

DE GRUYTER

Timothy J. Vance

IRREGULAR PHONOLOGICAL MARKING OF JAPANESE COMPOUNDS

BENJAMIN SMITH LYMAN'S PIONEERING
RESEARCH ON RENDAKU



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The Mouton-NINJAL Library of Linguistics



Edited by
Yukinori Takubo
Haruo Kubozono

Volume 4

Timothy J. Vance

Irregular Phonological Marking of Japanese Compounds



Benjamin Smith Lyman's
Pioneering Research on Rendaku

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林貞子を偲んで

In memory of Teiko Hayashi (1922–2021)

Series preface

The Mouton-NINJAL Library of Linguistics (MNLL) series is a new collaboration between De Gruyter Mouton and NINJAL (National Institute for Japanese Language and Linguistics), following the successful twelve-volume series *Mouton Handbooks of Japanese Language and Linguistics*. This new series publishes research monographs as well as edited volumes from symposia organized by scholars affiliated with NINJAL. Every symposium is organized around a pressing issue in linguistics. Each volume presents cutting-edge perspectives on topics of central interest in the field. This is the first series of scholarly monographs to publish in English on Japanese and Ryukyuan linguistics and related fields.

NINJAL was first established in 1948 as a comprehensive research organization for Japanese. After a period as an independent administrative agency, it was re-established in 2010 as the sixth organization of the Inter-University Research Institute Corporation “National Institutes for the Humanities”. As an international hub for research on Japanese language, linguistics, and Japanese language education, NINJAL aims to illuminate all aspects of the Japanese and Ryukyuan languages by conducting large-scale collaborative research projects with scholars in Japan and abroad. Moreover, NINJAL also aims to make the outcome of the collaborative research widely accessible to scholars around the world. The MNLL series has been launched to achieve this second goal.

The authors and editors of the volumes in the series are not limited to the scholars who work at NINJAL but include invited professors and other scholars involved in the collaborative research projects. Their common goal is to disseminate their research results widely to scholars around the world.

The current volume is an outcome of the long-standing endeavor by Tim Vance, who has worked on rendaku voicing and Lyman’s Law at NINJAL and other places for many years. Through his careful study, the author succeeds in fully describing the contributions made by Benjamin Lyman and his contemporaries to the study of rendaku voicing and related issues, thereby enhancing our knowledge about how phonological studies of Japanese have developed over the past century and a half.

Yukinori Takubo
Haruo Kubozono

Preface

The project that led to this book had its roots in the research I did for my dissertation while I was in Japan in the late 1970s. I got interested in *rendaku*, and I soon came across Lyman's name in publications by Martin (1952:48), Okumura (1955), and Maeda (1977), and all of them cited an article by Ogura (1910). Lyman's Law figured prominently in the dissertation that eventually emerged (Vance 1979), but I had not actually seen Lyman's original 1894 article. The University of Chicago library did not have it, so I just relied on the references to it in readily available sources.

Many years later, as I was preparing for the fifth or sixth time to teach a graduate course on Japanese phonology, it occurred to me that I might be able to get a look at Lyman's article at long last by taking advantage of the interlibrary loan system, which by then was highly developed. I sat down at my office computer and sent in a request to the University of Arizona library, and a few weeks later, a photocopy of the article appeared in my campus mailbox. It came from the Cleveland Public Library, and the photocopy showed "withdrawn" stamped on the cover of the original. It is hard to know why the librarians of Cleveland decided to keep such an old and obscure item, but I am very much in their debt. As I will explain in the pages that follow, there were two things about Lyman's article that surprised me. First, what we now call Lyman's Law is not exactly what Lyman said. And second, Lyman pointed out a number of other tendencies involving *rendaku* that are not usually attributed to him.

Once I got my hands on Lyman's article, I searched the Internet for information about him, and I quickly discovered that a collection of his books and papers is maintained by the Special Collections and Archives of the W. E. B. DuBois Library at the University of Massachusetts in Amherst. Thanks to a travel grant from the Northeast Asia Council of the Association for Asian Studies, I was able to spend a week in Amherst looking at this collection in the summer of 2007. Since Lyman was a geologist and mining engineer by profession, there has been some understandable skepticism about whether he himself actually discovered what we call Lyman's Law. I was hoping to find things that would help me make a case one way or the other, and one of the items in the collection was an 1878 article by Lyman on the pronunciation of Japanese. This article is in some respects quite sophisticated for its time (Vance 2012a), and for that reason it enhances the plausibility of the idea that Lyman could in fact have discovered the "law" that bears his name.

This book is organized into seven chapters. Chapter 1 provides an introductory explanation of *rendaku* and Lyman's Law, and Chapter 2 is a brief biography of Lyman. Chapter 3 reproduces Lyman's 1878 article, and Chapter 4 is my

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assessment of his description of Japanese pronunciation. Chapter 5 is a minimally corrected version of Lyman's 1894 article, and Chapter 6 is an English translation of Ogura's superb critique of the 1894 article (Ogura 1910). Chapter 7 incorporates my commentary on Lyman 1894 and Ogura 1910 into a description of some of the important aspects of *rendaku* in modern Tōkyō Japanese. An appendix following Chapter 7 provides an annotated list of all the Japanese examples that Lyman cited in his 1894 article.

I transcribe modern Tōkyō Japanese phonemically in the “surfacy” system that I presented in excruciating detail in Vance 2008. This system assumes a uniform phonemic inventory for all vocabulary strata. I omit accent marking except in those few places where accent is relevant to the discussion. When I do mark accent, I use a downward-pointing arrow to show the location of the distinctive fall in pitch, as in /ha[↓]to/ 鳩 ‘dove’. On those few occasions when syllable and mora divisions are relevant, I use a caret to mark a syllable boundary and a period to mark a mora boundary within a long syllable, as in /pa_˘to_˘ro[↓].H_˘ru/ パトロール ‘patrol’.

I mark most morpheme divisions with a plus sign, but I use a hyphen between a stem and an inflectional ending, as in /tabe-ta/ 食べた ‘ate’, and a dot between the two elements of a Sino-Japanese binom, as in /dai-gaku/ 大学 ‘university’. The morphemic divisions of inflectional forms follow the widely adopted analysis of Bloch (1946). I use these divisions just for convenience and do not intend them to imply an endorsement of the analysis behind them. Verb forms in particular raise problems for morphemic analysis that I will not try to resolve here (Vance 1987:175–208, 1991; Klafehn 2003). A **Sino-Japanese binom** (*kango-niji-jukugo* 漢語二字熟語) is a prototypical Sino-Japanese vocabulary item written with two kanji. The term is Martin's (1975:151).

I use angled brackets when I cite elements of a writing system (e.g., the kanji (虹) or the romanization ⟨niji⟩). When I romanize modern Tōkyō Japanese examples, I use so-called modified Hepburn romanization. This system represents the moraic nasal /N/ consistently as ⟨n⟩, followed by an apostrophe when ⟨n⟩ alone could be mistaken for a representation of syllable-initial /n/, as in *kin'yū* for /kiN-yuH/ 金融 ‘finance’ (cf. *kinyū* for /ki-nyuH/ 記入 ‘writing in’). I represent vowel length (transcribed phonemically as /H/) with a macron in romanization, as in the examples just given, except for the citation forms of adjectives in which the second half of a long vowel is analyzable as an inflectional ending, as in *atarashii* for /ataraši-H/ 新しい ‘new’. I use this same romanization system for the Japanese proper nouns that occur in my English text, and the appropriate macrons appear even on common place names such as Tōkyō and Kyōto. I italicize romanized examples but not romanized proper nouns unless I am citing them as examples. The same romanization system applies to

Japanese words used in my English text as terminology, and I italicize these terms except for a few that occur very frequently. For example, I italicize *da-kuten* 濁点 ‘voicing diacritic’, but not kanji, kana, hiragana, katakana, or *rendaku*. In the two articles by Lyman (Chapters 3 and 5), of course, I have retained Lyman’s romanization unchanged.

I follow the periodization of Japanese that Frellesvig (2010:1) adopts, and I use the same abbreviations: OJ = Old Japanese (700–800 CE), EMJ = Early Middle Japanese (800–1200), LMJ = Late Middle Japanese (1200–1600). When I give a phonemic transcription for a Japanese example from one of these earlier periods, I mark it explicitly with a superscript, as in ^{OJ}/kapa/ for the Old Japanese word corresponding to modern Tōkyō /kawa/ 川 ‘river’. A Japanese phonemic transcription with no superscript represents a modern Tōkyō form, but I occasionally use a superscript when I think it might be helpful: ^{MT}/kawa/.

Some well-known features of the Japanese writing system come up repeatedly, and I refer to them without explanation except when such details are crucial to the point I am trying to make. First, I refer to the kana spelling system in use today (*gendai-kana-zukai* 現代仮名遣い) as **modern kana spelling** and to the system in use before the dramatic 1946 reform (*rekishi-teki-kana-zukai* 歴史的仮名遣い) as **historical (or old) kana spelling**. Kana spelling is particularly relevant in §1.1, §4.5–6, and §7.3.3. Second, I use the term *ateji* 当て字 ‘assigned character’ very broadly to include not just pronunciation-based (phonogram) uses of kanji but also meaning-based uses. The strict, narrow definition of *ateji* includes only the former, and a well-known example is 〈矢張〉 for /yahari/ ‘as one would expect’. There is no etymological or semantic connection between /yahari/ and /ya/ 矢 ‘arrow’ or /hari/ 張り ‘tension’. An example of a meaning-based use is 〈足袋〉 for /tabi/ ‘split-toed sock’, a monomorphemic native Japanese word. Although 〈足〉 can represent native /aši/ ‘foot’ or Sino-Japanese /soku/ ‘foot’, and 〈袋〉 can represent native /fukuro/ ‘bag’ or Sino-Japanese /tai/ ‘bag’, /tabi/ obviously does not contain any of these morphemes. Instead, the combination of ‘foot’ and ‘bag’ suggests (at least vaguely) the meaning ‘split-toed sock’. The technical term for meaning-based spellings like this is *jukuji-kun* 熟字訓 ‘combined-character *kun* reading’, but ordinary native speakers do not know this term and use *ateji* to refer to the whole spectrum of “assigned” characters.¹ In any case, most assigned kanji are motivated to some degree by both phonological and semantic links to other words, so there is no sense in pretending that there is a clear-cut distinction (Vance 2002b:189–190). When I need to talk about assigned characters, I will call them all *ateji* and discuss the complications case by case.

Many publications written in Japanese are included in the references, and I cite these in the romanization system described above. When any author or

editor of an English-language publication happens to be a Japanese person, I have simply retained whatever romanization that person chose for his or her own name, regardless of how that name would appear in the system I have adopted. For example, the author of Otsu 1980 is Ōtsu Yukio 大津由紀雄. Except for here in the Preface, I use the order surname first, given name second when I mention a Japanese person's full name in the text (e.g., Yamada Yoshio 山田孝雄).

To save space and reduce clutter, I have adopted non-standard ways of referring to a few dictionaries that I cite over and over in the text. *Nihon kokugo dai-jiten* 『日本国語大辞典』 is a Japanese counterpart to the *Oxford English Dictionary*, and I refer to the 2000–02 second edition as just *NKD*. The 1967 *Jidai-betsu kokugo dai-jiten: Jōdai-hen* 『時代別国語大辞典–上代編』 is the standard dictionary for Old Japanese (i.e., the language recorded in the Japanese portions of 8th-century texts), and I cite it as *Jōdai*. I also make frequent references to two widely used comprehensive dictionaries, one or the other of which is included in almost all of the compact electronic dictionaries that are ubiquitous in present-day Japan. I cite the 2008 sixth edition of Iwanami's *Kōjien* 『広辞苑』 as just *Kōjien* and the 1995 second edition of Sanseidō's *Daijirin* 『大辞林』 as just *Daijirin*. These are the editions that happened to be in the electronic dictionaries that I owned while I was working on this book. Finally, I use *NHK* to refer to the accent and pronunciation dictionary published in 2016 by NHK (Japan's public broadcasting network) and *Meikai* to refer to the 2014 version of a similar dictionary published by Sanseidō. The full citation for each of these six dictionaries appears in the list of references at the end of the book.

I have presented earlier versions of small parts of this book at academic conferences and to a variety of audiences at several universities in the United States and in Japan, and some of those bits and pieces have appeared in print (Vance 2007a, 2012a, 2012b). I am grateful to many listeners for making perceptive comments and for helping me to locate important sources. So many people helped me with my “Lyman project” that I cannot possibly acknowledge all of them individually, but I want to mention a few of the major contributors. Mike Milewski and Sharon Domier made sure that my 2007 visit to the Lyman Collection in the UMass library was as productive as possible. Many years later, Danielle Kovacs helped me secure permission from the UMass library to use two of the photographs in Chapter 2. The project began while I was a faculty member at Arizona, and Brenda Fraker, the administrative assistant for my department, provided essential logistical support during those early years. I moved to NINJAL, the National Institute for Japanese Language and Linguistics (Kokuritsu Kokugo Kenkyūjo 国立国語研究所), in January of 2010 and worked there until March of 2017. No words can adequately express my gratitude to my NINJAL colleagues, especially Tarō Kageyama and Haruo Kubozono, for making me feel

welcome and for creating the kind of environment that allowed me to devote a large fraction of my time to thinking about Lyman and rendaku. As part of my role at NINJAL, I headed a collaborative research project on rendaku, and this book has benefited enormously from my interactions with project members, especially Atsushi Asai, Mark Irwin, Emiko Kaneko, Shigeto Kawahara, Laurence Labrune, Paul Lyddon, Mizuki Miyashita, Nobuyuki Nakazawa, Kōhei Nishimura, Kazutoshi Ohno, Satoshi Ohta, Takayo Sugimoto, Yutaka Suzuki, Tomoaki Takayama, Katsuo Tamaoka, Zendō Uwano, Seiji Watanabe, Ian Wilson, and Hideki Zamma. I am also indebted to my two project post-docs, Akiko Takemura and Hyun Kyung Hwang, and to my NINJAL department's administrative specialist, Junko Yoneda, for their tireless devotion. Finally, I would like to thank Heiko Narrog and Yukinori Takubo for their sage advice about publication.

This book is dedicated to my mother-in-law, Teiko Hayashi. A *haiku* aficionado of considerable skill, she patiently provided many of the examples that appear on the following pages, even though she only vaguely understood why I needed them. It was often a challenge for me to ask a question in a way that would make sense to a non-linguist of her generation, but once she understood what I was after, she was able to access her prodigious vocabulary quickly and precisely, even in her late 80s.

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1 The Rendaku Alternations

1.1 Alternating Phonemes and Kana Spelling

Many Japanese morphemes have one allomorph that begins with a voiceless obstruent and another allomorph that begins with a voiced obstruent. A typical example is a morpheme meaning ‘bird’: sometimes it appears as /tori/, with a voiceless initial /t/, as in /tori/ 鳥 ‘bird’ and /tori+kago/ 鳥籠 ‘birdcage’, and sometimes it appears as /dori/, with a voiced initial /d/, as in /oya+dori/ 親鳥 ‘parent bird’. When a morpheme shows this kind of alternation, the allomorph that begins with a voiced obstruent can only appear when it is not the first morph in a word. Notice in the three words just cited that /dori/ appears only in /oya+dori/. From here on, it will save some space to call the allomorph that begins with a voiceless obstruent (/tori/ in this case) the **voiceless alternant** and the allomorph that begins with a voiced obstruent (/dori/ in this case) the **voiced alternant**.¹

This /tori~/dori/ alternation is just one instance of the conspicuous morphophonemic phenomenon that caught Lyman’s attention in his study of Japanese. The modern Japanese technical term for the phenomenon is **rendaku** 連濁, but this word was not yet in common use among scholars in the late 19th century.² Lyman used the word **nigori** 濁り, and this is how non-linguists usually refer to the phenomenon even today. Martin (1952:48) proposed the English translation **sequential voicing alternation**, but the phenomenon is now widely known among linguists, and many recent publications in English refer to it as (**Japanese**) **rendaku**. In the rest of this book, I will just call it *rendaku*, and I will not italicize the word.

The description of *rendaku* in the preceding two paragraphs is misleading in three respects. First, /oya+dori/ 親鳥 ‘parent bird’, the example containing the voiced alternant /dori/ (~/tori/) ‘bird’, is a compound, inviting the inference that all instances of *rendaku* occur in compounds. The overwhelming majority of words that exhibit *rendaku* are in fact compounds, but a few are at least arguably prefix+base combinations. For example, the diminutive /o/ in /o+gawa/ 小川 ‘brook’ (cf. /kawa/ ‘river’) and the intensifier /ka/ in /ka+boso-i/ か細い ‘skinny’ (cf. /hoso-i/ ‘slender’) are ordinarily analyzed as derivational prefixes.³

Second, and more seriously, the elements that alternate are not necessarily monomorphemic. Alternating single morphemes like /tori~/dori/ 鳥 ‘bird’ are typical, but quite a few Sino-Japanese binoms (see the Preface) alternate, and binoms are usually treated as bimorphemic (see §7.3.2). One such binom is /toH.roH/ 灯籠 ‘lantern’, which appears with /d/ instead of /t/ in /iši+doH.roH/

石灯籠 ‘stone lantern’. There are also compounds consisting of native Japanese elements that occur as non-initial elements in longer compounds (see §7.2.3), and some of these show rendaku. An example is /tate+mono/ 立者 ‘important actor/figure’, which appears with /d/ instead of /t/ in /oH+date+mono/ 大立者 ‘leading actor/figure’.

The third misleading aspect of the description above is the intimation that the rendaku alternations pair consonants realized as voiceless obstruents with counterparts that differ only in voicing. As one of the alternating elements cited above shows, however, this straightforward phonetic characterization is not accurate. In the adjectival root /hoso/~/boso/ ‘slender’, [h] alternates with [b], which is obviously not the result of simply adding voicing to [h]. The examples in Table 1.1 show the phonemes that the rendaku alternations pair.

Table 1.1: The Rendaku Alternations.

/f/~ /b/	[ɸ]~[b]	/fune/ 船 ‘boat’	/kawa+bune/ 川船 ‘river boat’
/h/~ /b/	[h],[ç]~[b]	/hako/ 箱 ‘case’	/haši+bako/ 箸箱 ‘chopstick case’
/t/~ /d/	[t]~[d]	/tama/ 玉 ‘ball’	/me+dama/ 目玉 ‘eyeball’
/k/~ /g/	[k]~[g]	/kami/ 紙 ‘paper’	/kabe+gami/ 壁紙 ‘wallpaper’
/c/~ /z/	[ts]~[(d)z]	/cuka/ 塚 ‘mound’	/ari+zuka/ 蟻塚 ‘anthill’
/s/~ /z/	[s]~[(d)z]	/sora/ 空 ‘sky’	/hoši+zora/ 星空 ‘starry sky’
/č/~ /j/	[tɕ]~[dʒ]	/či/ 血 ‘blood’	/hana+jī/ 鼻血 ‘nosebleed’
/š/~ /j/	[ɕ]~[dʒ]	/šima/ 縞 ‘stripe’	/tate+jīma/ 縦縞 ‘vertical stripe’

The phoneme /b/ alternates with /f/, as in /fune/~ /bune/, and with /h/, as in /hako/~ /bako/, not with /p/. The /f/~ /b/ and /h/~ /b/ alternations are due to a sequence of well-known historical changes, and initial /f/ and /h/ in native Japanese words are both descended from a single phoneme that was once pronounced [p].⁴ Initial /p/ remains in mimetic words (e.g., /pika+pika/ ぴかぴか, ‘glitter-glitter’), and many recent borrowings with initial /p/ are now in common use (e.g., /posuto/ ポスト ‘mailbox’), but rendaku does not pair /p/ with any other phoneme. Notice also that /z/ alternates both with /c/, as in /cuka/~ /zuka/, and with /s/, as in /sora/~ /zora/, and that /j/ alternates both with /č/, as in /či/~ /jī/, and with /š/, as in /šima/~ /jīma/. These pairings reflect mergers of voiced fricatives and affricates; Tōkyō Japanese has lost earlier phonemic distinctions between [z] and [dʒ] and between [ɕ] and [dʒ].⁵ Because of all these changes, the difference between the voiced and voiceless alternants of an alternating morpheme is often

more than just the presence or absence of voicing in the initial obstruent, and one voiceless obstruent, namely /p/, does not alternate at all. The rendaku alternations thus involve a phonetically unnatural class of voiceless consonants (Mielke 2008:51–54; Vance 2019:193–197).⁶

In fact, it is not immediately obvious that we should treat all the alternating phoneme pairs in Table 1.1 as instances of a single phenomenon. We run into the same sort of problem in connection with the three voiceless/voiced fricative alternations in English nouns, illustrated in Table 1.2.

Table 1.2: English Fricative Alternations.

/f/~ v/	/wʊlf/ <i>wolf</i>	/wʊlv-z/ <i>wolves</i>
/θ/~ ð/	/bæθ/ <i>bath</i>	/bæð-z/ <i>baths</i>
/s/~ z/	/haʊs/ <i>house</i>	/haʊz-əz/ <i>houses</i>

These three English pairings are all phonetically parallel, but many noun morphemes end in /f/ or /θ/ both in the singular and in the plural (e.g., *gulf/gulfs* /gʌlf-s/ and *myth/myths* /mɪθ-s/), *house* is the only morpheme that shows the /s/~|z/ alternation, and no morpheme shows a parallel /ʃ/~|ʒ/ alternation. It is far from certain that ordinary native speakers of English intuitively recognize the three fricative alternations as instances of a single more abstract phenomenon.

When it comes to rendaku, however, there is no real doubt that native speakers of Japanese see all the alternations in Table 1.1 as instances of a single more general phenomenon, despite the phonetic complications noted above. One likely reason is that the Japanese rendaku alternations are much more widespread than the English fricative alternations. The Japanese alternations appear in a very large number of vocabulary elements, while the English alternations are confined to a small set of noun morphemes. At the same time, almost any preceding element in a compound or derivative provides an environment for rendaku. In the English case, the plural morpheme is the only environment for the allomorphs ending with a voiced fricative.⁷

The Japanese writing system provides what I suspect is an even more powerful reason for native speakers to see the rendaku alternations as a unitary phenomenon: modern kana spelling represents all the alternations in exactly parallel fashion. The kana voicing diacritic (*dakuten* 濁点) represents more than just the addition of voicing in some cases, and the relationships between kana letters with and without *dakuten* mirror the alternations shown in Table 1.1 above.⁸ For example, the diacritic is added to the letters for /ta/ <た>, /sa/ <さ>, /ka/ <か>, and /ha/ <は> to write the syllables /da/ <だ>, /za/ <ざ>, /ga/ <が>, and

/ba/ ⟨ば⟩). Because of the mergers of voiced fricatives and affricates (mentioned earlier in this section), each of the syllables /zu/, /ji/, /ja/, /jo/, and /ju/ has two possible spellings. In most cases, the diacritic is added to /su/ ⟨す⟩, /ši/ ⟨し⟩, /ša/ ⟨しゃ⟩, /šo/ ⟨しょ⟩, and /šu/ ⟨しゅ⟩ to write /zu/ as ⟨ず⟩, /ji/ as ⟨じ⟩, /ja/ as ⟨じゃ⟩, /jo/ as ⟨じょ⟩, and /ju/ as ⟨じゅ⟩.⁹ But when an element has a voiceless alternant that begins with one of /cu/ ⟨つ⟩, /či/ ⟨ち⟩, /ča/ ⟨ちゃ⟩, /čo/ ⟨ちょ⟩, and /ču/ ⟨ちゅ⟩, the practice is to represent its voiced alternant by just adding the diacritic and writing /zu/ as ⟨づ⟩, /ji/ as ⟨ぢ⟩, /ja/ as ⟨ぢゃ⟩, /jo/ as ⟨ぢょ⟩, and /ju/ as ⟨ぢゅ⟩. As a result, in terms of kana spelling, rendaku is simply the addition of *dakuten*, as in ⟨ありづか⟩ (*a ri tsu^h ka*) for /ari+zuka/ 蟻塚 ‘anthill’ (cf. ⟨つか⟩ [*tsu ka*] for /cuka/ ‘mound’) and ⟨はなぢ⟩ (*ha na či^h*) for /hana+jī/ 鼻血 ‘nosebleed’ (cf. ⟨ち⟩ [*chi*] for /či/ ‘blood’). (In romanized transliterations of kana spellings, whenever I think it might be helpful to readers who do not know hiragana, instead of just ⟨zu⟩ and ⟨ji⟩ I use ⟨tsu^h⟩ for ⟨づ⟩ [/*zu*/], ⟨su^h⟩ for ⟨ず⟩ [/*zu*/], ⟨chi^h⟩ for ⟨ぢ⟩ [/*ji*/], and ⟨shi^h⟩ for ⟨じ⟩ [/*ji*/].)

The modern kana spelling rules were formulated by the National Language Council (Kokugo Shingi-kai 国語審議会) and first adopted in 1946 as a cabinet proclamation.¹⁰ This document specifies ⟨ず⟩ (*su^h*) for /zu/ and ⟨じ⟩ (*shi^h*) for /ji/ but notes that some words with rendaku are exceptions.¹¹ It cites only a few examples to illustrate this point, but /hana+jī/ 鼻血 ‘nosebleed’ is one of them. In some instances, modern kana spelling reflects a lack of transparency in a word that is etymologically a compound. For example, in the case of /sakazuki/ 杯 ‘saké cup’, there are three factors that combine to obscure its composite origin.¹² First, the element /saka/ is etymologically an allomorph of the same morpheme as /sake/ 酒 ‘saké’. This pattern of alternation, with /a/ word-medially and /e/ word-finally, is restricted to a small number of morphemes in modern Tōkyō Japanese (see §7.2.3 for details). Of course, the allomorph /saka/ appears as the first element in several common words that are transparent compounds, such as /saka+ba/ 酒場 ‘tavern’ (containing /ba/ ‘place’) and /saka+dai/ 酒代 ‘drinking money’ (containing /dai/ ‘fee’). The second factor that obscures the etymology of /sakazuki/ is that /zuki/ originated as the voiced alternant of an obsolescent morpheme that used to occur as an independent word (cf. Old Japanese /tuki/ ‘shallow bowl’), which would be pronounced /cuki/ in modern Tōkyō Japanese if it had survived. As far as I know, /taka+cuki/ 高坏 ‘small one-legged table’ (cf. /taka-i/ 高い ‘tall’) is the only word other than /sakazuki/ that is still in use and involves what is etymologically this same morpheme.¹³ The third factor is that when /sakazuki/ is written in kanji, a single character is used: ⟨杯⟩ or ⟨盃⟩. Despite all this, modern speakers are likely to analyze /sakazuki/ as a combination of /saka/ and /zuki/ and to identify /saka/ as a realization of the morpheme that means ‘saké’. But this analysis leaves /zuki/ as a residue like *cran* in English

cranberry (an element that we could describe as a bound root with an extremely limited distribution). There is nothing else in the modern language that speakers are likely to identify with this /zuki/, and the modern kana spelling of /sakazuki/ is <さかすき> (*sa ka su^h ki*), with the syllable /zu/ written by adding the voicing diacritic to the letter for /su/ <す>, not to the letter for /cu/ <つ>. This spelling implies that there is no connection between the /zuki/ in /saka+zuki/ and the /cuki/ in /taka+cuki/.

The verb /cumazuk-u/ 躓く ‘to trip, stumble’ is etymologically a combination of the noun morpheme /cume/~cuma/ 爪 ‘(finger/toe) nail’ and the verb /cuk-u/ 突く ‘to push, thrust’. The historical kana spelling was <つまづ< (tsu ma tsu^h ku) but the modern spelling is <つまづく> (tsu ma su^h ku), with /zu/ written by adding the voicing diacritic to the letter for /su/ <す> instead of the letter for /cu/ <つ>. This etymological compound is written with the single kanji <躓>, and the first element shows the same /a/~e/ alternation mentioned just above in connection with /saka/~sake/ 酒 ‘saké’, but the second element /cuk-u/ is still in common use as an independent verb. Even so, the combination is opaque to present-day Tōkyō speakers, as the modern kana spelling implies.

Modern kana spelling suggests the same loss of transparency for /inazuma/ 稲妻 ‘lightning’, which originated as a two-element compound: /ina+zuma/. The first element is etymologically an allomorph of the same morpheme as /ine/ 稲 ‘rice plant’, so this is another instance of the /e/~a/ alternation that we saw just above in /sake/~saka/ 酒 ‘saké’ and /cume/~cuma/ 爪 ‘(finger/toe) nail’. The /zuma/ in /inazuma/ is etymologically the voiced alternant of the same morpheme as /cuma/ 妻 ‘wife’. This example differs from /sakazuki/ 杯 ‘saké cup’ in two important respects. First, the independent word /cuma/, corresponding to /zuma/, is not obsolete. Second, when /inazuma/ is written in kanji, the character <稲>, ordinarily associated with /ine/~ina/, is combined with the character <妻>, ordinarily associated with /cuma/~zuma/. On the other hand, the semantic connection between ‘rice-plant wife’ and ‘lightning’ is completely opaque to a modern speaker. The historical explanation is that the compound came into use at a time when the word corresponding to modern /cuma/ meant ‘spouse’, and the combination was motivated by an ancient belief that lightning fertilized rice plants and caused them to bear grain.¹⁴ The modern kana spelling of /inazuma/ is <いなづま> (*i na su^h ma*), and here again the syllable /zu/ is represented by adding the voicing diacritic to the letter for /su/ <す>, not to the letter for /cu/ <つ>. But this officially sanctioned kana spelling does not necessarily reflect the intuition of present-day native speakers.¹⁵ In fact, most speakers seem to feel that /inazuma/ is a straightforwardly analyzable compound, in spite of the fact that it is semantically opaque. Educated adults will normally write /inazuma/ with the kanji (稲妻), but if asked to write it in hiragana, many will give the spelling <いなづま> (*i na tsu^h ma*),

representing /zu/ by adding the voicing diacritic to the letter for /cu/ (づ). The Japanese government (Bunka-chō 1986:6) recognized this fact of life in the 1986 cabinet notification that reaffirmed modern kana spelling rules with a few minor modifications. The basic principle is that words that are not clearly divisible in the modern language should be spelled with (ず) (*su*) for /zu/ and (じ) (*shi*) for /ji/ (that is, with the voicing diacritic added to the letters for /su/ and /ši/), but etymologically correct spellings with (づ) (*tsu*) for /zu/ and (ぢ) (*chi*) for /ji/ (that is, with the voicing diacritic added to the letters for /cu/ and /či/) are also permissible, and /inazuma/ and /cumazuk-u/ are cited as examples that allow both spellings. The dispreferred but now permissible spelling of /inazuma/ reflects the analysis /ina+zuma/ and implies that rendaku is involved.¹⁶

1.2 Historical Origin

There is a plausible story about the historical origin of rendaku that involves prenasalization. It is generally accepted that voiced obstruents in Old (8th-century) Japanese (OJ) were prenasalized: [^mb ⁿd ⁿ(d)z ^ŋg] (Asayama 1943; Hamada 1952; Martin 1987:20–26; Frellesvig and Whitman 2008b:3). Prenasalization disappeared long ago in Tōkyō and Kyōto Japanese, but an early 17th-century description by the Portuguese missionary João Rodrigues makes it clear that prenasalization was still present to some extent in Kyōto at that time (Hashimoto 1932; Morita 1977:260).¹⁷ Prenasalization is still preserved even today in some dialects, most famously those of the Tōhoku (northeastern Honshū) region (Martin 1987:21; Frellesvig 2010:36; Miyashita et al. 2016).¹⁸

Hamada (1952:23) cites examples like the one in Figure 1.1 to show how a well-known type of historical change makes sense if voiced obstruents were prenasalized.¹⁹ As noted in the Preface, EMJ is Early Middle Japanese (800–1200), and MT is modern Tōkyō Japanese.

EMJ/sumi+suri/ > MT/suzuri/ 硯 ‘inkstone’
 cf. MT/sumi/ 墨 ‘india ink’, MT/suri/ 擦り ‘rubbing’
 [sumisuri] > [sūmsuri] > [sūmzuri] > [sūⁿ(d)zuri] (= EMJ/suzuri/)

Figure 1.1: Attested Example of NV Syllable Contraction.

The etymology in Figure 1.1 is uncontroversial.²⁰ The earliest attestations in *NKD* are 934 for EMJ/sumi+suri/ and late 10th century for EMJ/suzuri/. As the last line in the figure shows, the change from EMJ/mis/ to EMJ/z/ is easy to understand if EMJ/z/ was prenasalized. The first step in the process was the loss of the vowel between

the nasal [m] and the voiceless obstruent [s] – an unremarkable rapid-speech reduction that resulted in salient nasalization on the vowel that was now followed by a coda nasal consonant. The second step was the spread of voicing into the onset following the nasal consonant. The third step was the assimilation of the nasal to the place of articulation of the following onset consonant. At this point, listeners could reinterpret the phonetic sequence [ũⁿ(d)z] as the realization of “underlying” ^{EMJ}/uz/, since ^{EMJ}/z/ and other voiced obstruents were realized with prenasalization.²¹ It is hard to know how many separate stages were really involved in this process and what order they occurred in, but something like the last line in Figure 1.1 is a believable scenario.²² Since phonemic coda nasals were still not permissible (at least in the colloquial vocabulary) at this time, it was not possible to reinterpret [ũn(d)z] as something like ^{MT}/uNz/.²³ Modern Tōkyō [sw(d)zuri] (= ^{MT}/suzuri/) reflects the later loss of prenasalization.²⁴ This correspondence between ^{EMJ}/mis/ and ^{MT}/z/ is just one instance of the general pattern: an earlier sequence of a nasal consonant (N) followed by a vowel (V) followed by a voiceless obstruent (T) corresponds to a modern Tōkyō voiced obstruent (D) with the same place of articulation as the original voiceless obstruent: NVT > D.²⁵

The proposed explanation for the origin of *rendaku* depends on the reasonable assumption that voiced obstruents were prenasalized in late prehistoric (pre-Old) Japanese as well. It also depends on the uncontroversial assumption that pre-Old Japanese (like Old Japanese) did not allow coda nasals (or any other coda consonants for that matter). As an illustration, consider ^{MT}/asa+giri/ 朝霧 ‘morning fog’. The corresponding OJ word is attested, and it had *rendaku*: ^{OJ}/asa+gwiri/.²⁶ Compare ^{MT}/asa/ ‘morning’, corresponding to ^{OJ}/asa/, and ^{MT}/kiri/ ‘fog’, corresponding to ^{OJ}/kwiri/.²⁷ The voiced obstruent in ^{OJ}/asa+gwiri/ was realized with prenasalization: ^{OJ}/asa+[ⁿg]wiri/. Assuming prenasalization in pre-Old Japanese, and given the natural development NVT > D, it makes sense to infer that ^{OJ}/asa+gwiri/ developed from an ancestor of the form ^{pre-OJ}/asa+/NV+/kwiri/. The obvious candidate for the NV syllable here is the ancestor of the OJ genitive particle ^{OJ}/no/ (cf. ^{MT}/no/), as in Figure 1.2 (Murayama 1954:107; Unger 1975:8–9; Vance 1982:335–338; Frellesvig 2010:40–43).

$$\begin{array}{l}
 (\text{pre-OJ}/\text{asa}+\text{no}+\text{kwiri}/) > \text{OJ}/\text{asa}+\text{gwiri}/ [\text{as}\tilde{\text{a}}^{\text{n}}\text{gwiri}] > \text{MT}/\text{asa}+\text{giri}/ \\
 \text{/nok/} > \text{/g/} \\
 \text{NVT} > \text{D}
 \end{array}$$

Figure 1.2: Prehistoric NV Syllable Contraction.

The prehistoric form in parentheses on the left in the top line in Figure 1.2 is, of course, hypothetical.²⁸

On the other hand, there is no reason to assume that every Old Japanese noun + noun compound noun developed from an ancestor of the form noun+^{pre-OJ}/no/+noun.²⁹ Modern Tōkyō Japanese has frozen noun+^{MT}/no/+noun phrases like ^{MT}/te+no+hira/ 手の平 ‘palm of the hand’ (containing ^{MT}/te/ ‘hand’ and ^{MT}/hira/ ‘flat’) alongside simple noun+noun compounds like ^{MT}/te+kubi/ 手首 ‘wrist’ (containing ^{MT}/kubi/ ‘neck’).³⁰ The situation in prehistoric Japanese was probably much the same. Consider the three attested OJ examples in Table 1.3.³¹ The forms in parentheses on the left are hypothetical prehistoric forms.

Table 1.3: Old Japanese Compounds and Phrases.

(^{pre-OJ} /kaperu+te/ >)	^{OJ} /kaperu+te/ ‘maple’ [lit. ‘frog hand’] ³²
(^{pre-OJ} /tama+no+te/ >)	^{OJ} /tama+de/ ‘jewel-like hand’ ³³
(^{pre-OJ} /kwo+no+te/ >)	^{OJ} /kwo+no+te/ ‘child’s hand’ in ^{OJ} /kwo+no+te+kasi+pa/ ‘oriental arbor-vitae’ ³⁴

The idea is that some prehistoric noun+^{pre-OJ}/no/+noun combinations remained phrases in outward form (like ^{OJ}/kwo+no+te/), while others contracted and developed into compounds with rendaku (as in ^{OJ}/tama+de/). Meanwhile, combinations formed by simple juxtaposition remained compounds without rendaku (like ^{OJ}/kaperu+te/). If the proposed account of the origin of rendaku is correct, these examples show why we would expect the phenomenon to be as irregular as it was in Old Japanese. Some OJ compounds (those with rendaku) had developed from phrases, while others (those without rendaku) had been formed by simple juxtaposition. The irregularities have not been leveled out in the subsequent 1,200 years; modern Japanese rendaku is similarly irregular, although many individual vocabulary items have gained or lost rendaku over the centuries.

Lyman (1894:172) understood that it was possible to explain the historical origin of rendaku along these lines, since he said explicitly that rendaku is the residue of an earlier voiced consonant, usually a nasal. When it comes to reduplicated words, of course, the prehistoric ancestor of genitive /no/ is not a plausible historical source for rendaku. Non-mimetic reduplicated words very strongly favor rendaku in modern Tōkyō Japanese (see §7.5), as in /hito+bito/ 人々 ‘people’ (cf. /hito/ ‘person’), and Lyman (1894:172), like several later researchers (Martin 1987:103–104; Frellesvig 2010:41), suggested the ancestor of locative/additive /ni/ (instead of the ancestor of genitive /no/) as the historical source. Unger (1975:36–37) and Martin (1987:103–104) cite several non-mimetic reduplicated words attested in Old Japanese without rendaku, and these examples suggest that the modern Tōkyō tendency was not yet firmly established at the time.

In one case, a form with *rendaku* and a form without are both attested, and the pronunciation difference seems to have carried a semantic distinction. The *Jōdai* entry for ^{OJ}/toki+doki/ (cf. ^{OJ}/toki/ ‘time’, ^{MT}/toki+doki/ 時々 ‘sometimes’) also cites an example with ^{OJ}/toki+toki/ and explains that the form with *rendaku* probably meant ‘sometimes’, while the form without *rendaku* probably meant ‘each time’.³⁵ Whatever the case may be with regard to the origin of *rendaku* in reduplicated words, as Frellesvig (2010:40–41) points out, there are examples of *rendaku* in Old Japanese that do not seem to be derivable from any earlier phrase with an NV syllable between the the elements, and he draws the reasonable conclusion that “*rendaku* already in OJ was established as a morphophonemic process.”

Also of interest in this connection are examples that correspond to OJ frozen phrases of the form noun+^{OJ}/tu/+noun. Genitive ^{OJ}/tu/ was already obsolete in OJ (Frellesvig 2010:126,131), but examples like those in Table 1.4 are attested phonographically.

Table 1.4: Noun+^{OJ}/tu/+Noun Phrases.

^{OJ} /oki+tu+tori/ ‘offshore bird’ (cf. ^{OJ} /oki/ ‘offing’, ^{OJ} /tori/ ‘bird’)
^{OJ} /mapye+tu+two/ ‘front door’ (cf. /mapye/ ‘front’, /two/ ‘door’)
^{OJ} /kuni+tu+kamwi/ ‘earthly god’ (cf. ^{OJ} /kuni/ ‘land’, ^{OJ} /kamwi/ ‘god’)
^{OJ} /ya+tu+kwo/ ‘servant’ (cf. ^{OJ} /ya/ ‘house’, ^{OJ} /kwo/ ‘child’)

As expected, the final elements in these examples do not have *rendaku* (Martin 1987:103), but modern Tōkyō /macuge/ 睫毛 ‘eyelash’ corresponds to an OJ item that was etymologically a combination of ^{OJ}/ma/(~/me/) ‘eye’, genitive ^{OJ}/tu/, and ^{OJ}/ke/~ge/ ‘hair’. The date of the earliest phonographic attestation of this combination is uncertain, and the phonogram representing the last syllable is problematic.³⁶ It seems likely that the OJ pronunciation was ^{OJ}/ma+tu+ke/, and that *rendaku* developed later by analogy with compounds like ^{EMJ}/asi+ge/ ‘dappled gray horsehair’ (cf. ^{MT}/aši+ge/ 葦毛).³⁷

1.3 Lyman's Law

In modern Tōkyō Japanese, a non-initial voiced obstruent in an element seems to inhibit *rendaku* in that element. For example, compare /umi+kaze/ 海風 ‘sea breeze’ and /umi+game/ 海亀 ‘sea turtle’. The independent words /kaze/ ‘wind’

and /kame/ ‘turtle’ both begin with /k/, realized as voiceless [k], but /kaze/ contains /z/, which is realized as a voiced obstruent ([dz] or [z]).³⁸ The idea is that the /z/ in /kaze/ prevents rendaku and rules out the form **/umi+gaze/*. The [m] that realizes the /m/ in /kame/ is voiced but is not an obstruent. This apparent constraint on rendaku is usually called **Lyman’s Law** (*Raiman no hōsoku* ライマンの法則 in Japanese), although it is not exactly what Lyman (1894:162) said in his famous article (see §5.2 and §7.2.1). The first appearance of the label *Lyman’s Law* that I am aware of is in an article by Ramsey and Unger (1972:287), and they enclose it in quotation marks, clearly indicating that it was not yet established terminology. *Raiman no hōsoku* first appeared in the Japanese scholarly literature at about the same time (Suzuki 2017:28). Lyman’s Law has figured prominently in a number of theoretical proposals, and I will mention some of these in the course of the detailed discussion of Lyman’s Law in §7.2.

Ramsey and Unger (1972:287–289) say that rendaku did not occur in Old Japanese if either the first or the second element in a two-element compound contained a voiced obstruent. Unger (1975:9) calls this the **strong version of Lyman’s Law**, and he attributes its original discovery to Ishizuka Tatsumaro 石塚龍磨 (1764–1823), who was a disciple of the famous scholar Motoori Norinaga 本居宣長.³⁹ It is very likely that this OJ counterpart of Lyman’s Law was actually a prohibition against prenasalized voiced obstruents in consecutive syllables (Vance, Kawahara, and Miyashita 2021). Consequently, an E2 like ^{OJ}/pagwi/ ‘bush clover’ could not have rendaku, even though it began with a voiceless obstruent as an independent word, because the voiced alternant would have been *^{OJ}/bagwi/ (cf. the attested compound ^{OJ}/aki+pagwi/ ‘autumn bush-clover’). Furthermore, when the last syllable of an E1 began with a prenasalized voiced obstruent, even an E2 that had a voiced alternant could not appear with rendaku. For example, ^{OJ}/pune/ ‘boat’ appeared with rendaku in ^{OJ}/sipo+bune/ ‘tide boat’, but ^{OJ}/suzu+pune/ ‘bell boat’ could not have been *^{OJ}/suzu+bune/. No phonographically attested OJ compound violates the strong version of Lyman’s Law interpreted as a constraint on adjacent syllables.

The three-element Old Japanese compound ^{OJ}/kuzu+pa+gata/ ‘kudzu-leaf vine’ (cf. ^{OJ}/kuzu/ ‘kudzu’, ^{OJ}/pa/ ‘leaf’, ^{OJ}/kata/ ‘vine’) is consistent with this adjacent syllable interpretation, but it leaves open the possibility that rendaku could have been inhibited by a prenasalized voiced obstruent anywhere in the immediately preceding morph. Since E1 is ^{OJ}/kuzu+pa/ and E2 is ^{OJ}/kata/, in relation to the consonant that shows rendaku (the ^{OJ}/g/ in ^{OJ}/kuzu+pa+gata/), ^{OJ}/z/ is not in the immediately preceding syllable and is not in the immediately preceding morph. Thus, the rendaku in this three-element compound does not violate the strong version of Lyman’s Law, regardless of whether the relevant domain

was the neighboring syllable or the neighboring morph (Vance 2005b:37).⁴⁰ To decide the issue, we need to examine two-element compounds with an E1 containing a prenasalized voiced obstruent in a non-final syllable, but such examples are very rare. There were almost no word-initial voiced obstruents in OJ (Martin 1987:93), so for all practical purposes, we are limited to first elements with more than two syllables, and not many OJ morphs were that long.⁴¹ One of the few relevant examples listed as a headword in *Jōdai* is ^{OJ}/abura+pwi/ 'oil lamp' (cf. ^{OJ}/abura/ 'oil', ^{OJ}/pwi/ 'fire'), but we cannot really be sure that the second element did not have *rendaku*, because it is written with (火) in the only attestation (from *Man'yōshū*). Although (火) was used as a phonogram for ^{OJ}/pwi/ in *Man'yōshū* (*Jōdai*:899), it could be a logogram in this case (cf. ^{MT}/hi/~bi/ 火 'fire'), as Ramsey and Unger (1972:288) note.

If at least some examples like ^{OJ}/abura+pwi/ had *rendaku*, we could conclude that it was a prenasalized voiced obstruent in the syllable immediately preceding the boundary that inhibited *rendaku*.⁴² If no such examples had *rendaku*, we would suspect that it was a prenasalized voiced obstruent in the morph immediately preceding the boundary that was relevant. Suzuki (2017:35–37) discusses examples ending in ^{OJ}/pikwo/ 'prince; male god' and reports that the proper name ^{OJ}/nagisa+bikwo/, with *rendaku*, is attested phonographically twice in *Kojiki* (dated 712). Assuming that the first element is ^{OJ}/nagisa/ 'shore', there is little doubt that it was monomorphemic in OJ, although it may have a compound etymology (Martin 1987:491). The second element is etymologically a compound of ^{OJ}/pi/ 'sun' and ^{OJ}/kwo/ 'child', and this analysis may still have been obvious to OJ speakers.⁴³ It thus appears that the *rendaku* in ^{OJ}/nagisa+bikwo/ can be construed as evidence that a prenasalized voiced obstruent had to be in an immediately preceding syllable to inhibit *rendaku*. One other example that can be construed in the same way is ^{OJ}/madara+busuma/ 'multicolored bedding' (cf. ^{OJ}/madara/ 'multicolor', ^{OJ}/pusuma/ 'bedding'), with ^{OJ}/da/ and ^{OJ}/ba/ in adjacent morphs but not in adjacent syllables.⁴⁴

We could be more confident about the claim that the OJ counterpart of Lyman's Law was a constraint on adjacent syllables if there were phonographically attested examples of *rendaku* in two-element compounds with an E2 that was clearly monomorphemic, had more than two syllables, and contained a prenasalized voiced obstruent in the third syllable or later. Unfortunately, there simply are no such examples. *Jōdai* lists ^{OJ}/ni+tutuzi/ 'red azalea' and ^{OJ}/ipa+tutuzi/ 'rock azalea' as headwords, without *rendaku*, but the absence of *rendaku* in a small number of examples is not persuasive evidence that *rendaku* could not occur in any relevant compound.⁴⁵ Thus, we can say that the available evidence from compounds is consistent with the idea that Lyman's Law in OJ was a prohibition against prenasalised voiced obstruents in adjacent syllables.

The strong version of Lyman’s Law clearly does not apply to modern Tōkyō Japanese. It is trivially easy to find counterexamples like /sode+guči/ 袖口 ‘cuff’ (cf. /sode/ ‘sleeve’, /kuči/ ‘mouth’), /kagi+zume/ 鉤爪 ‘hooked claw’ (cf. /kagi/ ‘hook’, /cume/ ‘claw’), and /tabi+bito/ 旅人 ‘wayfarer’ (cf. /tabi/ ‘journey’, /hito/ ‘person’).⁴⁶ Lyman himself (1894:162) explicitly denied the strong version: “A sonant in the syllable before has no effect on the nigori (about 150 words with, and about 150 without).” In the context of his article, it is obvious that Lyman intended *sonant* to mean ‘voiced obstruent’ here.

1.4 Concluding Summary

The first section of this introductory chapter (§1.1) provides a basic but careful description of the rendaku alternations in modern Tōkyō (“standard”) Japanese. The prototypical environment for rendaku “voicing” is immediately following the boundary between elements in a two-element compound (e.g., /yama/ ‘mountain’ + /tera/ ‘temple’ → /yama+dera/ 山寺 ‘mountain temple’), but some instances of rendaku occur in words that can be analyzed as prefix+base derivatives, and many instances appear in second elements that are not monomorphemic. Although the rendaku alternations all pair a voiceless obstruent with a voiced obstruent, the phonetic difference is in most cases not just a matter of the absence versus presence of voicing. Native speakers see all the rendaku alternations as subcases of a single phenomenon, at least in part because kana orthography represents all the alternations in exactly parallel fashion, namely, absence versus presence of the *dakuten* voicing diacritic on the first letter of the alternating element (as in /yama/ やま + /tera/ てら → /yama+dera/ やま^でら). The term *rendaku* is so widely known among phonologists today that there is no need to use an English translation.

According to the historical explanation in §1.2, rendaku originated in prehistoric Japanese by contracting sequences of a nasal consonant (N) followed by a vowel (V) followed by a voiceless obstruent (T). This scenario assumes that, at the stage when this kind of contraction took place, pre-OJ voiced obstruents were prenasalized (as they were in OJ) and that pre-OJ (like OJ) did not allow coda consonants. The likely source for the NV syllable in the ancestors of most OJ compounds with rendaku was the ancestor of the genitive particle ^{OJ}/no/, and the result of the contraction was a prenasalized voiced obstruent (D): NVT > D. A typical example is ^{OJ}/matu+bara/ ‘pine field’, from hypothetical ^{pre-OJ}/matu/ ‘pine’ + ^{pre-OJ}/no/ genitive + ^{pre-OJ}/para/ ‘field’: [matunopara] > [matu^mbara]. In a pioneering cross-linguistic survey, Labrune (2016) compares rendaku to irregularly occurring compound markers in several languages, and many of these

markers seem to have originated historically, like *rendaku*, as contracted genitives.

Rendaku was not a consistent marker of compound status in OJ, and the most obvious cause of this inconsistency is the fact that the second element of a compound (E2) could begin with a vowel or a sonorant as an independent word. *Rendaku* was, of course, impossible in such an element. For example, vowel-initial ^{OJ}/*omopi*/ ‘love’ could not have had *rendaku* in ^{OJ}/*kata+omopi*/ ‘unrequited love’, and sonorant-initial ^{OJ}/*nipa*/ ‘garden’ could not have had *rendaku* in ^{OJ}/*asa+nipa*/ ‘morning garden’. A second cause of inconsistency is that some OJ compounds were the outcome of simple juxtaposition, with no NV syllable to trigger contraction in the ancestral form. As a result, some OJ compounds with *rendaku*-eligible E2s like ^{OJ}/*kusa*/ ‘grass’ had *rendaku*, as in ^{OJ}/*ayamyē+gusa*/ ‘iris grass’ (presumably from ^{pre-OJ}/*ayamyē+no+kusa*/), whereas others did not have *rendaku*, as in ^{OJ}/*natu+kusa*/ ‘summer grass’ (presumably from ^{pre-OJ}/*natu+kusa*/).

Yet another major cause of inconsistency in the marking of OJ compounds by *rendaku* was the counterpart of Lyman’s Law (§1.3). In modern Tōkyō Japanese, Lyman’s Law prohibits *rendaku* in E2s that contain a medial voiced obstruent, as in */aki+saba/* 秋鯖 ‘autumn mackerel’ (^{*}/*aki+zaba*/) and */yama+cucuji/* 山躑躅 ‘mountain azalea’ (^{*}/*yama+zucuji*/). The available evidence indicates that the so-called strong version of Lyman’s Law, which held in OJ, was a straightforward ban on prenasalized voiced obstruents in adjacent syllables.

No fully satisfactory account has been provided for the diachronic transition from the strong version of Lyman’s Law to the modern Tōkyō version, which prohibits *rendaku* from appearing in an E2 that already contains a voiced obstruent (see §7.2 for details) regardless of whether the syllable beginning with that voiced obstruent is adjacent to (i.e., immediately follows) the initial syllable of E2 (i.e., the syllable beginning with the potential *rendaku* site). Thus, modern Tōkyō */hagi/* 萩 ‘bush clover’, just like corresponding ^{OJ}/*pagwi*/, cannot have *rendaku*; the only compound with this E2 in common use today is */nusubito+hagi/* 盗人萩 ‘tick trefoil’ (cf. */nusubito/* ‘thief’, not ^{*}/*nusubito+bagi*/). In addition, however, modern Tōkyō morphemes such as */cucuji/* 躑躅 ‘azalea’ also resist *rendaku* (see the paragraph just above), even though ^{*}/*zucuji*/ would not contain voiced obstruents in adjacent syllables. The OJ constraint against prenasalized voiced obstruents in adjacent syllables would not have prevented corresponding ^{OJ}/*tutuzi*/ from alternating with ^{?OJ}/*dutuzi*/, but as we saw in §1.3, it appears that the attested OJ compounds with this E2 did not have *rendaku*. However, the OJ constraint predicts only that ^{OJ}/*tutuzi*/ could have had a *rendaku* alternant, not that it must have had one.

As explained above, the OJ constraint also prevented rendaku when an E1-final syllable began with a prenasalized voiced obstruent. That is, the boundary between E1 and E2 was irrelevant, and we find examples like ^{OJ}/matu+bara/ ‘pine field’ (cited above) but not like ^{×OJ}/suga+bara/ (cf. attested ^{OJ}/suga+para/ ‘sedge field’). In contrast, the modern Tōkyō version of Lyman’s Law says nothing about E1 and thus does not prevent rendaku in compounds like /kaze+gusuri/ 風邪薬 ‘cold medicine’ (cf. /kaze/ ‘cold’, /kusuri/ ‘medicine’).

To sum up, rendaku was irregular in OJ, and it remains so in modern Tōkyō Japanese, as we will see in detail Chapter 7 (especially §7.7). One aspect of irregularity not mentioned above is variability, that is, examples that allow both a pronunciation with rendaku and a pronunciation without (see §7.7.1). For example, ^{OJ}/ipye/ ‘home’ and ^{OJ}/tutwo/ ‘gift’ combined to form a compound meaning ‘gift for the family’ that is attested in phonograms both as ^{OJ}/ipye+tutwo/ and as ^{OJ}/ipye+dutwo/.⁴⁷ Similarly, modern Tōkyō /yoko/ 横 ‘side’ and /taoši/ 倒し ‘toppling’ (cf. /taos-u/ ‘to knock over’) combine to form a compound meaning ‘sideways toppling’ that can be pronounced either as /yoko+taoši/ or as /yoko+daoši/.

Many different factors appear to influence the likelihood of rendaku, and Chapter 7 assesses those that Lyman mentioned in his 1894 article. The tendencies researchers have found differ in strength and sometimes interact, occasionally pulling in opposite directions. There are many well-documented cases of rendaku appearing in a vocabulary item that formerly lacked it or disappearing in a vocabulary item that formerly had it. These changes have not leveled out the irregularities; rendaku is not and never has been entirely predictable.

2 Lyman's Life and Work

2.1 A Brief Biography

Benjamin Smith Lyman was born into a very prominent family in Northampton, Massachusetts, on December 11, 1835.¹ His ancestors were among the earliest European settlers in Northampton, arriving in 1654. His father, Samuel Fowler Lyman (1799–1876), was a judge, and his mother, Almira (Smith) Lyman (1799–1871), was a cousin of Sophia Smith (1796–1870), whose bequest led to the founding of Smith College. Sara Ann Delano Roosevelt (1854–1941), Franklin Delano Roosevelt's mother, was Lyman's cousin on his father's side.²

Lyman graduated from Harvard in 1855. There were no transcripts at that time, but most of the courses in the curriculum were required. We can be sure that he took several semesters each of Greek and Latin, and a semester of French was required in his sophomore year. Elective courses included mineralogy (for juniors) and geology (for seniors), but it is uncertain whether Lyman took either of these. German, Italian, and Spanish were also offered as electives for juniors and seniors.³

After graduation, Lyman taught briefly at private high schools, but he felt himself ill-suited to this kind of life.⁴ In the summer of 1856, he got an assistant's job on a geological survey in Pennsylvania headed by J. Peter Lesley (1819–1903), a well-known geologist who was Lyman's uncle by marriage. In the spring of 1857 Lyman gave up teaching entirely, and for the next two and a half years he worked for geological projects in Alabama, Iowa, and Pennsylvania.⁵

From 1859 to 1862 Lyman studied at the School of Mines in Paris and at the Freiberg Mining Academy in Saxony. After returning to the United States, Lyman opened his own office in Philadelphia and did private geological work in the United States and Canada for a few years. At the end of 1869, he went to India and worked there more than a year surveying oil fields for the British government, mostly in the Punjab. On his way home in the spring of 1871, Lyman stopped at several ports in China and Japan, and he was apparently quite impressed by Japan.

In January of 1873, Lyman arrived in Japan to begin working for the Development Bureau (Kaitakushi 開拓使). He was one of the many foreign technical experts (*o-yatoi-gaikoku-jin* 御雇外国人) hired by the Japanese government during the Meiji era (1868–1912). Lyman led the geological survey of Hokkaidō and trained several assistants in the process.⁶ The photograph in Figure 2.1 shows the veranda of Lyman's house in Tōkyō, in the Hirakawa-chō 平川町 section of Kōji-machi 麹町.⁷ Figure 2.2 shows a letter addressed to Lyman at his Tōkyō address.⁸

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Figure 2.1: Lyman and His Assistants (ca. 1877).

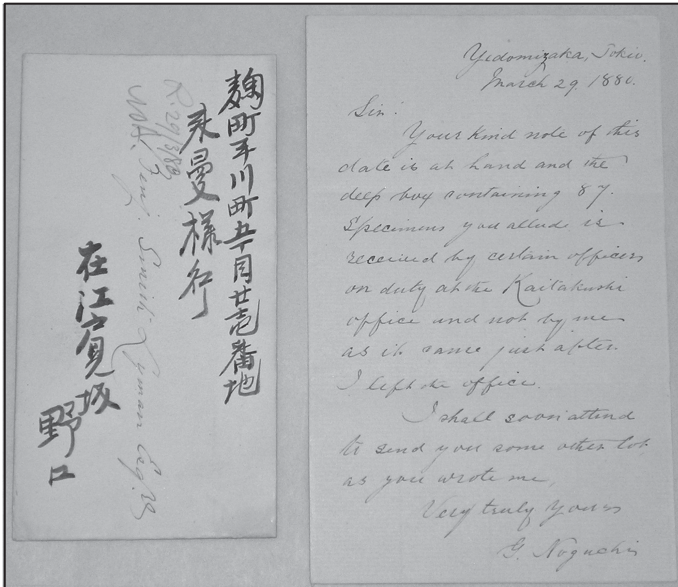


Figure 2.2: 1880 Letter from Noguchi to Lyman.

Lyman moved from the Development Bureau to the Ministry of Home Affairs (Naimushō 内務省) in 1876 and then to Ministry of Public Works (Kōbushō 工部省) in 1877. He traveled widely in Japan, doing geological survey work and visiting mines and oil fields. After his last contract ended in July of 1879, he stayed on at his own expense to finish his survey reports.

Lyman seems to have become quite proficient in Japanese. In the Japanese language textbooks that he owned, there are many handwritten corrections of typographical errors in the romanized Japanese. There is also a newspaper story about Lyman that appeared in 1879 in the *Chōya Shinbun* 『朝夜新聞』 and contains the following passage.⁹

Mr. Lyman of the Ministry of Public Works is able to write in Japanese just like a Japanese person; his only problem is that he says things such as “*Kinō wa wachiki ga omahan no hō e mairu hazu de arimashita ga*” [Yesterday I was supposed to go to your place]

Presumably it was the personal pronouns *wachiki* わちき and *omahan* おまはん in the reported sentence that would have struck an 1879 newspaper reader as odd. The entry for *wachiki* in *NKD* describes it as a first-person pronoun used by (1) *geisha* or prostitutes, or (2) the daughters of townspeople. The entry for *omahan* in the same dictionary describes it as an Edo-period second-person pronoun used mainly in the pleasure quarters by *geisha* or prostitutes to address customers, mostly in Ōsaka but also in Edo.¹⁰ It is hard to know how accurate this newspaper report was, but it certainly invites speculation about how Lyman learned his Japanese.¹¹ In any case, the phrase “just like a Japanese person” was surely an exaggeration. According to a more realistic assessment, Lyman was able to read and write kana and simple kanji and could handle everyday conversation without difficulty.¹²

When Lyman left Japan in December of 1880, he had been there almost eight years. He returned to Northampton and was active in town affairs for several years, but he moved back to Philadelphia in 1887 and lived there for the rest of his life.¹³ Lyman made one more visit to Japan on his way home from a survey of coal mines in the Philippines in 1906. He saw some of his former assistants while he was there, and Figure 2.3 shows a photograph taken during that final visit.¹⁴

Lyman patented an instrument called a solar transit in 1871 and another called a topographer’s light transit in 1886. He became a vegetarian in 1864, and in 1917 he published a cookbook of vegetarian recipes. Lyman’s obituary in the *New York Times* (August 31, 1920) described him as a “geologist, mining engineer and inventor of worldwide reputation.”



Figure 2.3: Lyman and His Former Assistants in 1906.

2.2 The Lyman Collection

Most of Lyman's books and papers are now in the Special Collections and Archives of the W. E. B. DuBois Library at the University of Massachusetts in Amherst. These materials are known as the Benjamin Smith Lyman Collection.¹⁵ Lyman's cousin, Frank Lyman, donated these materials to the Forbes Library (the public library in Northampton) in 1921. Fukumi Yasuko 副見恭子, a librarian at the University of Massachusetts, found out about the Lyman materials in the late 1970s, and the university purchased the books in 1980 and the other materials in 1987. Fukumi raised funds in Japan to preserve the materials in 1987–88. She also did some research of her own using the materials.¹⁶

2.3 Lyman's Research on Japanese

When I visited the Lyman collection in the summer of 2007, I discovered an article that I had never heard of before called "Notes on Japanese Grammar" (Lyman 1878). Chapter 3 below reproduces the full text of this meticulous description of the pronunciation of late 19th-century Tōkyō Japanese, and Chapter 4 is an extensive commentary on it.¹⁷

The text of Lyman's 1894 article on *rendaku* appears below in Chapter 5, and my interpretations of the many examples he cited appear in the Appendix. Lyman told his readers that this article was based on a talk he gave at the 1883 meeting of the American Oriental Society (Lyman 1894:160). The 1894 article appeared in a collection published by the Oriental Club of Philadelphia, and Lyman was a founding member of this organization.

Several years after Lyman's *rendaku* article appeared, the Japanese scholar Ogura Shinpei 小倉進平 (1882–1944) was asked to write a response to it, and his critique was published in the journal *Kokugakuin Zasshi* 『国学院雑誌』 in 1910. Ogura is best known for his later work on Korean, but his response to Lyman is a very important early contribution to *rendaku* research. My English translation Ogura's critique appears below in Chapter 6.

2.4 Doubts about the Discovery of Lyman's Law

It is only natural to wonder whether Lyman actually discovered Lyman's Law on his own. (See §1.3, §5.2, and §7.2 for discussion of Lyman's Law.) For one thing, the famous national learning scholar Motoori Norinaga 本居宣長 (1730–1801) wrote a mammoth commentary on the 8th-century *Kojiki* called *Kojiki-den* 『古事記伝』, and it contains a terse statement of Lyman's Law.¹⁸ Miyake (1932:135–136) was the first scholar to bring Motoori's statement to the attention of linguists, quoting the following passage.¹⁹

In general, the beginning of the second word in a combination becomes voiced, but, when there is a voiced [obstruent] sound in that word, as in these examples [of names of gods], its beginning never becomes voiced.

The 44 volumes of *Kojiki-den* were published over the course of more than 30 years, with the last volume appearing in 1822. Thus, there is no question that Motoori's discovery predated Lyman's discovery, and some researchers refer to the constraint as Motoori-Lyman's Law (e.g., Irwin 2014:93). Lyman actually owned a copy of *Kojiki-den*, and it is in the Lyman Collection, but according to Sharon Domier, who was the East Asian Librarian at the University of Massachusetts when I visited in 2007 (see the Preface), there are no handwritten notes in it of the sort that we see in Lyman's Japanese language textbooks. *Kojiki-den* is written in an archaic style that would have been very hard for Lyman to read, and even if we suppose that he could have read it, the chances are very small that he would have stumbled on the relevant passage that Miyake found buried in this enormous work.²⁰

Ogura (see §2.3 just above), on the other hand, was able to read *Kojiki-den*, and it was the source of the many Old Japanese examples from *Kojiki* that he cited in his 1910 critique (see §6.2). Nonetheless, he said nothing about Motoori having discovered Lyman's Law before Lyman, and he surely would have made this point forcefully if he had known about the passage above that Miyake reported.²¹ Furthermore, Lyman included the voiceless obstruent /p/ on his list of inhibiting consonants (see §5.2 and §7.2), and this notion could not have come from Motoori's version of the constraint. Thus, despite the understandable suspicion that Lyman got the idea of Lyman's Law from someone else, there is no source that we can identify. In short, Lyman almost certainly discovered Lyman's Law independently, and this conclusion is not at all implausible for three reasons. First, as we saw above in §2.1, Lyman was a serious learner of Japanese as a foreign language. Rendaku is the kind of phenomenon that arouses a learner's curiosity, and it is only natural that Lyman noticed it and was intrigued by it. Second, Lyman had the good fortune to be able to consult J. C. Hepburn's famous dictionary (Hepburn 1867, 1872; see §5.1). This newly published resource was absolutely indispensable for Lyman's rendaku research. Third, Lyman had a wide-ranging intellect and extraordinary perseverance (see §2.1 above), and his 1878 article (Chapter 3) shows a high degree of linguistic sophistication (see the commentary in Chapter 4). Even with the appropriate resources at hand, he would not have been able to investigate rendaku so thoroughly without these talents.

3 Lyman's 1878 Article

3.1 Background

In 1878, a two-part article by Lyman called “Notes on Japanese Grammar” appeared in the *Japan Weekly Mail*, an English-language newspaper published in Yokohama.¹ Despite the title, there is nothing about grammar in either of the two installments, unless we take *grammar* in the modern sense of all the rule-governed aspects of a language, including a phonological component, a syntactic component, and so on. Interestingly, Lyman seems to have taken it in something like this way himself: “trusting to special grammatical notes for a full explanation of the precise difference [between similar but different sounds in different languages].” It is the subtitles of the two parts that give the reader a better idea what to expect: “Pronunciation” (January 12) and “Orthography” (January 19). It could be that Lyman intended to write further installments but never got around to it. It is also possible that the newspaper was planning to publish further installments by other authors. In the pamphlet version that I found in the Lyman Collection, however, there is no hint of any installments still to come. The complete text of the pamphlet version is reproduced below. I have left Lyman’s text unchanged except for correcting a few typographical errors and adding two note reference numbers. These two notes, which appear at the end of this book, supply bibliographical information; there are no footnotes or endnotes in Lyman’s original text. Lyman used the older name *Yedo* (*Edo* in modern Hepburn romanization) to refer to Tōkyō, and he used the romanization ⟨Kiyōto⟩ for Kyōto.

3.2 Lyman 1878

Notes on Japanese Grammar

Benjamin Smith Lyman

From the “*Japan Weekly Mail*,” January 12th.

I Pronunciation

It will doubtless seem absurd that a tyro in the use of Japanese should make bold to publish any notes on its grammar, and it would be brazen-faced if he should laugh back (in advance) and say with the witty author of “Exercises in the Yokohama Dialect” that “he should be content if he obscured the subject no

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more than his learned predecessors had done;" yet, seriously, it should be remembered that scarcely three foreigners do use the spoken Japanese with the correctness that thousands not born in France talk French, and it can hardly be expected that only those three should make remarks on Japanese Grammar.² Surely there are some points in regard to which even a beginner can properly form an opinion. At any rate the present papers are made public in the firm belief that some of their leading principles have been generally far too much neglected (to say the least), but have in one case been a great aid in learning the language, and may perhaps become so to other beginners, even if the notes be taken merely as doubtful suggestions or queries and tested as to their truth or falsity.

Pronunciation

VOWELS. – The vowels are reckoned by the Japanese as only five. The following illustrations of them are given in conformity with Mr. Samuel Porter's excellent classification of the "vowel elements in speech," in Silliman's Journal, Sept., 1866, XLII. 176.³

A has the sound of the "Italian *a*," that is, of *a* in *father*, longer and more open than the *a* of *ask* or French *la*, and closer and perhaps shorter than the *a* of *arm* or French *âme*. A nice ear may possibly distinguish in certain Japanese words a longer *a* as in *arm* or as in *âme* and a shorter one as in *ask*; but it is certainly an hallucination to suppose that such a distinction exists between the words *matsu*, *tatsu* on the one hand and *sake*, *yama*, *minato*, *hana*, *asa*, *tachibana*, *naru*, on the other.

O has a sound between that of *o* in *snow* and the *o* of *lord* or *a* in *war*; that is, it is made like both those vowels with the lips stiffened but with the tongue raised at a point between the points required by those sounds, rather farther back than for the *o* of *snow* and farther forward than for that of *lord*. It would seem therefore to be the same as the Italian "*o aperto*."

U is also made with the lips stiffened and with the tongue raised between the points needed for the *u* of *rule*, or German *schule*, or *ou* of French *rouler*, and the French *eû* in *jeûne*; and is (if I mistake not) heard in the South Carolina pronunciation. There is also in Japanese a shorter *u* of the same general character, and coming therefore between the *u* of *pull*, or German *bund*, or the French *ou* in *bourse* and the French *eu* in *jeune*, *leur*, *amateur*.

E has a sound similar to that of *e* in *met*, *get*, but more prolonged, as in drawling those words, and consequently with the tongue slightly less raised, or more "open." It is probably the French *ê* in *tête*, *bête*. In Japanese there is also perhaps a shorter *e* just like the *e* in *met*; at all events the combination *ae* is often confounded by the Japanese in pronunciation and even in writing with *ai*; which might happen from the shortness and obscurity of the second vowel.

I has the sound of *i* in *machine*. There is also in Japanese a shorter *i*, like the first *i* in *divine* or the *i* of French *ami*, or German *mit*.

All the above-mentioned Japanese vowels (except perhaps the short *i* and short *u*) occur also with the nasal modification produced by opening the nasal passage from the throat while pronouncing them, and similar in that respect to the nasal vowels indicated in French by the letter *n* as in *mon*, *vin*, *un*, and in Portuguese by the letter *m*, as in *dom*.

Those are the sounds (or at least the principal ones) of the vowels (commonly so called) heard at Yedo and probably also at Kiyôto; but in the provinces there are decided variations, and possibly even in the capitals a close observation would distinguish slight but constant differences in their pronunciation in certain syllables. In the north *e* becomes apparently the French *é* as in *bonté*. The *i* there (and perhaps elsewhere) seems to become the corresponding short sound, the French *e* in *cet* or the English *y* in *city*; or possibly sometimes the still more open *e* in *goodness* or in the German *denn*. It may be however that in some cases the difference of pronunciation is simply an interchange between the common Japanese *e* and *i*. The other three vowels seem to be pronounced more uniformly throughout the empire.

The chief difficulty however for a foreigner in pronouncing the vowels is carefully to observe whether they are single or double, as the difference makes often a difference of meaning which puzzles a Japanese hearer. For example, a single *o* prefixed to the name of a thing sometimes marks it as a small thing, whereas a double *o-o*, the same sound doubly prolonged, or repeated, marks the thing as large. A foreigner is apt merely to give greater stress to the vowel instead of doubling it.

In addition to the vowels commonly so called the surd, aspirate or whispered vowels, all represented by the letter *h*, should be reckoned as vowels quite as much as the usual, sonant ones, though their true nature seems to have been generally overlooked in modern times. The inventor of the Greek rough breathing (Aristophanes) would seem to have understood their nature by his mode of writing them, and it is possible that the same may have been the case with whoever first put the *h* into the Roman alphabet. But the moderns seem to have been misled by the fact that all such vowels have but one written character, and have considered that character to represent a consonant. Their true nature is readily perceived by the help of a very simple experiment. If the word *he* be whispered and, however prolonged, be suddenly cut short by a loud pronunciation of the vowel *e* of the same word, it will be seen that the whispered portion is precisely the same as the (commonly very short) sound of the *h* of that word in ordinary loud speech. The same experiment may be made with the word *ho*, or with any syllable beginning with *h*; and it will be found that the difference between the *h* and the vowel sound following it is simply the same as that between *p* and *b* in the words *rope*, *robe*, which in whispering sound

alike. The whispered vowels are sometimes heard in Japanese (at least in rapid pronunciation) without any vowel immediately following them, particularly those corresponding to short *i* and short *u*.

In spoken Japanese there are properly no diphthongs (unless the *h* sounds followed by vowels be called so); at least, any two vowel sounds actually following one another have the same sounds as if pronounced quite separately, and do not unite into one syllable. The English combinations *ay* and *oy* (which, though commonly called diphthongs, are really, when rightly sounded, a vowel sound followed by the consonant *y*, or when carelessly pronounced, simply a succession of two vowels) do not occur, and the Japanese *ai* and *oi* have each of the vowels distinctly sounded in two syllables; and the same may be said of the two parts of all the double vowels. Of course, in Japanese, certain vowels theoretically coming together are by euphonic laws converted into other sounds; so that in some methods of writing not strictly phonetic a sort of literary diphthong may be said to exist – and perhaps that is the only kind (apart from the *h* sounds) that really exists in any language. Those and other laws of euphony come more properly under the head of Etymology.

CONSONANTS. – The sounds of the English *k*, *g*, (in *get*), *ng* (in *hanging*), *p*, *b*, *m* and *w* are found in Japanese without any difference. The *w* is not at all the German *w*.

The Japanese sounds corresponding to our *t*, *d*, *n*, *ch* (in *church*), *j*, *s*, *z*, *sh* (in *hush*), *r* and *y*, all made with the tongue raised more or less at the same point, differ from our sounds in having the tongue raised at a point rather further forward in the mouth and close behind the teeth; and agree in that respect rather with the Irish and German and (principal) Hindustani *t*, *d* and *r*. The difference in sound is particularly noticeable in the *sh* and in the *r*. The *r* is extremely different from the English *r* in *art*, *part*, and is made perhaps still further forward in the mouth than the German *r*, and with “the root of the tongue kept” not only “almost motionless” but altogether so; and is consequently as far removed as possible from being a “guttural *r*” (whatever that may be); as is shown also by its close affinity with *d*. The Japanese *sh*, owing to its difference from ours, is sometimes confounded with *s*, especially before the vowel *i*. Also vulgarly at Yedo, instead of an *h* before the vowel *i*, there is a sound made with the tongue in the same position as for the *sh* but with the teeth open instead of closed, and corresponding therefore to the German *ch*, made very far forward in the mouth. Although by natives of Yedo completely distinguished from the *sh*, by natives of some provinces and by foreigners, judging roughly with the ear, no difference between the sounds is commonly noticed, and they are therefore often spoken of as the same.

Our *ch* and *j* are sometimes described as compound sounds equivalent to *t* and *sh* or *d* and *zh*. But a careful attention to the mode of producing the sounds will show a decided difference: in *ch* and *j* the tongue is not fully brought to the position needed for making *t* or *d*, where the tongue completely and quietly closes the passage of the mouth, nor can the sounds *ch* and *j* be prolonged indefinitely like the sounds *sh* and *zh*. In fact the difference in mode of formation between *ch* and *t* is simply the same that there is between a smack of the lips and a *p* made with the breath drawn in. Moreover the sounds of *ch* and *tsh* are quite different to the ear; as may easily be perceived in listening to an unpractised German, who pronounces *t* followed by *sh* without difficulty, but cannot give the English *ch*. It needs no very nice ear to make that experiment with complete success. The Sanscrit and Arabic alphabet makers clearly recognized the simple character of the sounds *ch* and *j*; but as those sounds were foreign to Latin we have no single character for the *ch*, and one only for the *j* by a corruption of the original sound of that letter. It seems really to be the absence of a single letter for each of the sounds in Greek, Latin and the principal modern European languages that has (at least in part) given rise to the impression that the sounds (needing to be written by a combination of letters) are compound sounds.

The English sounds of *h* in *hue* (a surd or whispered *y* that might have been written *yh*), of *th*, *l*, *f*, *v* and *wh* (or its first part, a surd or whispered *w*) are not found in the Japanese of Yedo and Kiyôto. The *yh* however may perhaps be heard sometimes in rapid speech (as in the word *hiyaku*); and the Japanese *r* sometimes sounds to an unpractised ear very much like our *l*. The English *f* occurs distinctly in the pronunciation of a man of Higo, and probably on account of its occurrence in that portion of Japan best known to Europeans a couple of centuries ago, it was long supposed to be an essential part of the Japanese language. In other provinces of Western Japan (at least in Idzumo) the same sound is replaced by the sound of the Greek *phi*, made with the lips brought nearly together instead of with the lower lip touching the upper teeth. It seems highly probable that one of those sounds originally took the place of the present Japanese *h* in general, and by the natural process of degradation in time has become weakened. As the Japanese vowel *u* requires the stiffening or protrusion of the lips in a marked degree, *h* coming before it has been mistaken for *f* or *ph* more than before other vowels. Dr. Hepburn, therefore, though using *h* before other vowels uses *f* for it before *u*; but says justly that it “resembles the sound of *wh* in *who*” and that his “*fu* might for the sake or uniformity be written *hu*.” The only difference between the *hu* (of Yedo and Kiyôto) and the English word *who* is in the fact that the Japanese vowel is made a little further forward in the mouth; and it seems unfortunate that for the sake of uniformity it was not written *hu* in a dictionary that was destined to be for many years the best standard of romanized Japanese.

THE SOUNDS IN GENERAL. – It is noticeable in Japanese that in general both the vowels and the consonants are made very far forward in the mouth. There are few vowel sounds made so far back in the mouth as the *a* in *war*, and no guttural sounds back of *k*, and almost all the consonants are made either close behind the teeth or in front of them.

ARRANGEMENT OF THE SOUNDS. – The Japanese arrangement of the “fifty sounds,” so-called, is not by any means an irrational one. The five principal vowels arranged according to the position of the tongue in sounding them would be: *a*, *o*, *u*, *e*, *i*; but in pronouncing them in that order they tend to coalesce owing to the similarity of the position of the tongue required for the neighboring sounds. The Japanese arrangement departs from that almost as far as possible, on purpose to prevent to the highest degree any coalescing in rapid pronunciation, and the order becomes therefore: *a*, *i*, *u*, *e*, *o*. Of course the *e* is given before the *o*, because it is less closely allied to the *u* than *o* is. If the order had been *a*, *i*, *o*, *e*, *u*, the tendency for *e* and *u* to coalesce would have been greater than it is in the order *u*, *e*.

The consonants (joined with vowels and so prevented from coalescing or confusion) are given in the natural enough order, *k*, *s*, *t* (with *ch*, *ts*, to which the *t* is converted before *i* and *u* respectively by the habits of Japanese organs of speech), *n*, *h* (formerly *f* or *ph* probably), *m*, *y*, *r*, *w*; the last three having a certain resemblance in their mode of production to justify their standing together apart from the rest, although not made all at the same point in the mouth.

ACCENT. – The Japanese accent seems to be very uniform, like the French, upon all syllables alike, except that the short *i* and *u* are more lightly passed over (just as the unaccented French *e*, or so-called mute *e*, is). To talkers of English the first impression caused by such uniformity of accent is that certain syllables which by our habits of speech would be unaccented are accented more strongly than the neighboring syllables. The statement that Japanese accent seems to be so uniform (or, in other words, wanting) is made with some doubt; for the learned Dr. Hepburn says that the Japanese accent is a slight raising of the tone on certain syllables, on the penult in dissyllables and trisyllables, and on the antepenult in longer words, but always on the double vowels. It seems to me decidedly that his ear was deceived in regard to the double vowels, which do not appear to become any single vowel, but to be only a succession of equally accented like vowels. Moreover an example he gives of a distinction between two words merely by the accent (*hána* a flower, and *haná*, the nose) is a case where some Japanese at least can perceive no difference of accent or pronunciation whatever. In regard to his other example (*hashí*, a bridge, and *háshi*, chopsticks), the latter word gives simply an illustration of the short and unaccented condition of the *i* and *u*; and the other

hashi seems clearly to have the two syllables equally accented. Some Japanese at least can also perceive no difference in the pronunciation of *hara*, a moor, and *hara* the belly; nor between: *jishin*, one's self, and *jishin*, an earthquake; *kasa*, an umbrella, and *kasa*, an eruption; *kawa*, a river, and *kawa*, the skin; *umi*, the sea, and *umi*, pus; *uchi*, to strike, and *uchi*, a house; *mushi*, steaming, and *mushi* an insect; *moeru*, to burn, and *moeru* to germinate. The common word *anata*, you, sometimes sounds to a foreigner as if accented on the penult, sometimes on the antepenult, probably because in reality the syllables are all equally accented.

In taking the opinion of a native speaker in such matters it is extremely necessary to beware of a certain sciolistic pedantry that exists in Japan as well as elsewhere, and that in other countries tends to corrupt the spoken language by making it conform to an imperfect orthography, and in Japan sometimes makes a distinction to be sought and imagined where none really exists except in the mode of writing. It is commonly better on the whole in those cases and in many like them, both here and in western countries, to listen carefully to somebody of good intelligence and clear articulation who makes no pretence whatever to a literary education. In the wise words of the very ancient Chinese saying: "Ask the grass-cutters and wood-choppers."

TONES. – Although so large a part of the present Japanese language is taken from the Chinese, "tones" or certain combinations of inflection, pitch and abruptness are not used in Japanese (as they are in Chinese) to distinguish between words of otherwise the same sound but of different meanings. Nevertheless in the Japanese composition of Chinese poems the tones are borne in mind, and they are marked in Chinese-Japanese dictionaries.

Postscript

A discussion with some educated Japanese friends has thrown a little light on the subject of accent. They insist that at Yedo and Kiyôto there is such a distinction between words that are otherwise similar; yet it appears not to be in the stress laid upon any one syllable more than another but in a slight rising or falling inflection, which needs some practice to be discerned at all. For example, *haná*, the nose, has a rising inflection in the last syllable, whereas *hanà* a flower seems to have a falling inflection there. In the same way *amé*, jelly, is distinguished from *amè*, rain. But it is admitted that in some provinces (in Aidzu at least) no such distinction of tone is known, and some at least of the less educated inhabitants of Yedo seem to be quite unaware of any such difference.

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II Orthography

The object of these notes is to discuss not the very imperfect Japanese and Chinese methods of writing now in vogue in Japan; nor on the other hand any ideally perfect system of writing, such as may come into general use at some far distant time; but rather the best and most practical method for general adoption in the more immediate future; and that evidently must be with the Roman alphabet. There has been so much diversity hitherto in the modes of Romanizing Japanese that it is worth while to inquire which of the three or more regular systems already set up should be maintained and whether or not any further modifications are needed. It will therefore be necessary to consider not only the reasons why the Roman alphabet should be adopted by Japan; but also the principles on which a romanizing system should be based; and finally to give the details of such a system.

The reason for generally adopting the Roman alphabet in Japan is certainly not a desire to obtain greater beauty by exchanging the graceful Chinese characters for our plain, if not even uncouth, letters as printed now-a-days, but rather a wish to have a method of writing more complete phonetically than the Japanese *kana*, far more practical in many ways and more easily learned than the Chinese characters, and above all by the removal of a most serious barrier to bring Japan into closer relationship with our western world and its civilization. The adoption of Roman letters is furthermore very important as a help in the cultivation and more complete development of pure Japanese, which is now used mainly by the ignorant only, and which, as long as Chinese characters are prevalently used (and consequently read as Chinese with the effect of grossly barbarizing the language of the educated both in its spoken words and written idiom), is like a smaller tree overshadowed and repressed by the dense foliage of a lofty encompassing forest.

The difficulty to young Japanese of learning a sufficient number of Chinese characters and of keeping up their knowledge of them is very great, as they are well aware; though it is perhaps not quite beyond comparison with the corresponding labour to be spent in learning our irregular English spelling; and the practice of Chinese writing has the great merit of a most admirable training of the hand (possibly too of the eye) that may afterwards be of very great use in drawing or even in other matters. But in romanizing Japanese it is not impossible to avoid in a very great measure the irregularities of our spelling; and by simplifying very much the arts of reading and writing not only to add very much to the number of those who can acquire them at all and thereby gain the

key to all learning, but to widen very greatly the opportunities of those who are seeking after enlightenment within the limits of a lifetime and especially within those of easily learning youth. Of course it is the average enlightenment of the nation that is the measure of its civilization, a matter in which the Japanese are eager not to be outstripped by western countries; and they perceive instinctively and correctly that our more practical alphabet is in many ways, besides the facility of learning to use it, an important advantage, and that it is far better adapted to the needs of modern times; not only to printing, but to easy and rapid writing or reading without strain upon the eyes and attention, and yet to the great reduction of the bulk of books (as well as manuscripts), and so to their ready consultation, their more convenient accumulation in libraries, their greater cheapness and wider diffusion among the people. Even the smaller but not unimportant details of our mode of writing from left to right are more practical than the Japanese and Chinese method, in that the hand and pen have not to pass over the freshly written words with danger either of blurring them or of inopportunately concealing them. It is very plain also that our alphabet is far better suited than the Chinese characters or even the Japanese *kana* to represent the sounds of speech, the prime object after all of every method of writing, whether characters are used for whole words or single syllables or separate sounds; and the adoption of Roman letters would do away with many a vexatious delay and unavoidable doubt that arise from the use of the present methods, especially in the reading and writing of proper names, but also frequently in trying to make out the proper sound or meaning of common written words. The making and using of dictionaries would be immensely facilitated.

An ideally perfect alphabet and mode of writing must no doubt represent every sound by a separate letter and only one sound by each letter and be easy both to write and to read and be adapted without the slightest confusion to all languages. It may be doubted by many whether the myriad variations and gradations of sound that occur in the multitude of languages on the earth can ever possibly be represented by separate characters at once easily formed and as easily read as the sounds can be distinguished by the ear; but all will probably admit that the general adoption of such an alphabet will not by any means speedily take place, and that in the mean time at least the Roman alphabet will continue to be the one used by the greater part of the more civilised portions of the world, and that it is in some respects an admirable compromise of the difficulties referred to. At all events I am ready to make such an admission, although believing myself the inventor long since of such an ideal, rational, universal, alphabet.

An attempt to convert the Roman alphabet into a Universal or Standard Alphabet may be valuable for the writing of vocabularies and grammars of new languages to be used with comparative ease and precision by professed philologists; but it is preposterous to suppose that such an alphabet, peppered with

dots and bristling with accents, can ever be suited to practical use for a whole people. It is already bad enough to have to dot our *i* and cross the *t*. Efforts have sometimes been made to increase the number of sounds represented by the Roman letters through slight changes of form, but so strongly is the taste of men opposed to such changes, or perhaps so seldom have the changes been fully in keeping with the simple character of the alphabet, that, although the *G* derived from *C* gained a complete foothold in early times, the *J* and *U* still at the end of hundreds of years have scarcely been admitted to some dictionaries and other modern books. The crossed *D* for English *th* in *this* has long since disappeared; and all the complicated changes of form suggested by the phonotype reformers, however useful and easy to learn, seem never to have made any approach towards satisfying the taste or the practical common sense of the general public.

The most that appears to be practically feasible in reforming the use of the Roman alphabet and not opposed to its ancient spirit is simply to drop letters that are not needed, either because they represent compound sounds, or because two letters have the same sound; to represent new sounds by a combination of the old letters; to use each letter only for one sound or for a few that are closely related and that can be readily distinguished by their collocation, or easily taken up by the memory; and to use in different languages the same letter for sounds that are nearly alike, without any attempt at a more universal character, trusting to special grammatical notes for a full explanation of the precise difference. Of course in certain languages an unusual number of allied sounds may require an uncommon exercise of ingenuity; as, for example, the three *t* sounds in Hindustani (if so many be really sounded by the natives), and the "cerebral" sounds generally; though even there, without going beyond the number of letters contentedly used by the Germans for the simple sound of English *sh*, a cerebral sound might perhaps without confusion be marked by the addition of *rh* to the letter used for the corresponding common sound. But happily in Japanese there are no such extraordinary difficulties.

The representation of accents or tones is so foreign to the Roman alphabet that in languages like the Chinese where they are important, it seems advisable to use separate accents for the different inflections of the voice; also to use (if necessary) a short curved line for short quantity; perhaps for slowness, or the opposite of abruptness, a small ring added to the accent; placing such signs either above or below the vowel according as the pitch is high or low; using a dot, if need be, to mark the pitch in the single case or two of the absence of other signs; and so indicating by a simple sign, composed of at most two parts, each one of the twenty-four combinations given in Edkins' Mandarin Grammar as the whole number of possible Chinese tones. The four really different tones of the Mandarin dialect would by that system need at most only a grave or an

acute accent placed above or below the vowel; as follows: the first tone (“shang ping”) would have either no accent at all or a grave accent above the vowel; the second tone (“shang”) would have an acute accent below the vowel; the third tone (“ch’ü”) would have a grave accent below; the fourth tone is “distributed among the other four;” and the fifth tone (“hia ping”) would have an acute accent above (or else an inverted circumflex above). Of course in ordinary books the Mandarin dialect with these easily written accents would be the standard; but even in writing any one of the separate dialects of China the signs might perhaps be abbreviated by writing only their most essential portions. In the Japanese use of Chinese words it is, however, probably quite unnecessary to mark the tones at all, except possibly in versifying.

In romanizing Japanese it is not reasonable to suppose that a system of transliteration can ever be popularly used that aims chiefly for the benefit of philologists to perpetuate all the irregularities of the present very imperfect, Japanese orthography, even though they be the record of some ancient pronunciation now obsolete. Such a system might indeed be applied to ancient books, in order to give the sounds intended by their writers; but for a like reason should not be used for the present living language.

The simplest mode of transliterating written Japanese into Roman letters is the one already most in favour among the Japanese themselves because the easiest for them to learn. It represents the consonants of each group in the “fifty sound” arrangement by a single Roman letter; for example, by a simple *t* not only before *a*, *e* and *a*, but before *i* where it is pronounced *ch* and before *u* where it is pronounced *ts*. In the same way *si* is made to stand for *shi*. There is in such irregularities no possibility of confusion as far as the present Japanese are concerned, because the habits of their organs of speech absolutely require them to convert a *t* before *i* into *ch* and before *u* into *ts*, and an *s* before *i* into *sh* (and the sounds *ch* and *sh* before other vowels are written *ti* and *si*, analogously to the *kana* writing). But in spite of the simplicity and easiness to the Japanese of this method as far as mere transliteration of written words is concerned, it departs perhaps rather too widely from the principles that require in the reduction of spoken language to Roman writing as much as possible of phonetic consistency (one sound for each letter), phonetic completeness (one letter or combination of letters for each sound) and universality (the same letters for the same sound throughout as large a portion of mankind as possible).

The same reasons would shut out from any discussion whatever the French mode of transliteration, in which the simple *u* sound appears as *ou*, the English *ch* as *tch* and the English *j* as *dj*.

Indeed the principle just mentioned of using Roman letters as they are already used by the greater number of men who use them at all, seems to be the

most practical guide towards accomplishing the chief result desired by the Japanese, namely the conversion of their orthography into one resembling as far as possible that already most in use in the most civilized parts of the world. The main object is not the mere ease of transition from the present Japanese writing to the new, still less the making it easy for foreigners to learn the present mode, or for philologists to set forth the ancient pronunciation of modern speech, nor yet to use Roman letters with the value they had among the ancient Romans; but rather to use them as they are now most commonly used.

As for the details, then, of the best way of romanizing Japanese (not merely transliterating) it is clear that in regard to the vowels in general the talkers and writers of English, though more numerous than those of any other one language, must yield as a minority to the substantially universal use of the letters in question among other nations; and happily so, as in English the irregularity in their use is extremely great. *A, e, i, o, u* should then be used for sounds similar to the ones they represent in German, Italian, Spanish (and French, except the *u*). The Japanese sounds are, as already described, not always exactly the same as in those western languages, yet they are so nearly similar as to leave no doubt as to the choice of the letter for each sound. There is no need whatever of diacritical marks to increase the number of vowel sounds for the cases of short *i* and short *u* and perhaps other short vowels can easily be borne in mind; and even if not so, would lead to no great confusion. There seems to be no serious objection to the indication of the nasal vowels by the added letter *n*, as already customary in French, the chief western language where such sounds occur; a method corresponding closely to the present Japanese usage, and causing no troublesome confusion whatever. The *h* as representing a whispered vowel should be used as in all western languages where it is pronounced at all.

The double vowels would undoubtedly much better be written by doubling the letter of the single vowel; and the only objection to doing so is that the double *oo* suggests to readers of English a sound already provided for by the letter *u*. But the objection seems hardly strong enough; for the mode of writing the vowels generally is not to be based on the English, and in German the double *oo* is a long *o*. The argument too would hold equally against the indispensable *ei* and *ai*. If necessary in Japanese, a pair of dots (diaeresis) may be written over the second *o*, a mark that on the other hand might cause the vowel to be mistaken for another German sound. There is perhaps no serious objection, for the benefit of English readers or for brevity of space, to writing optionally the double *oo* (or other double vowels) by a single letter with a long mark or circumflex over it; though even that leads foreigners into pronouncing the letter as merely a single emphatic long vowel instead of two, and by the frequent omission of the mark to still greater error. The use of a long mark or a wave shaped circumflex in

that way for the repetition of a letter (even of a consonant) is sanctioned by old usage. The common angular circumflex is perhaps needed also in some Chinese dialects for the “rising circumflex,” enabling the “falling circumflex,” to be distinguished from it by simple inversion.

The consonants can hardly be disposed of so readily in a lump; but the *b*, *d*, *k*, *m*, *n*, *p*, *r*, *s*, *t*, and *z* should be used essentially as they are in all western languages, in spite of the slight difference in the mode of forming some of the sounds in different countries. Clearly *g* should be used as in English *get*, *give*, and as in the beginning of German words; and *w* as in English. The only doubt can be how to write the English *ng*, *y* (the consonant), *j*, *ch* and *sh*.

Since the sound of English *ng* is considered only a provincial variation (though a very wide spread one) of the *g* (as in *get*), and in the provinces where used replaces the *g* with great uniformity, except in easily remembered cases; and since it is really a simple sound, it seems unnecessary to use a separate letter or combination of letters for it. If any be used, the English and German usage should doubtless prevail and the sound be written *ng*.

As regards *y* and *j* it can hardly be disputed that in Japanese they should have the same value as in English, the prevailing language as to numbers (that uses the Roman alphabet) in the western world, and especially so in the East, and apparently likely to become more and more so everywhere (as it fortunately deserves to for its grammatical simplicity and its excellent adaptation to the needs of both talking and writing); and those letters should have that value too, in spite of the fact that both of them have in German their more ancient sounds.

In respect to *ch* and *sh*, the English usage must for like reasons prevail, although they are not single letters for single sounds. Something might be said in favor of using for *ch* the otherwise useless *c*, or, as the Japanese seem at present to prefer, the *t* (though before other vowels than *i* they use *ti*); but both seem too great a violation of the principles laid down. It would also be a great convenience if our obstinate occidental conservatism would sanction the use of a reversed *j* for *ch*, just like the reversal of *s* and *z* for a similar difference of sound. In the same way a reversed long *f* for *sh* and perhaps a reversed *f* for *zh* (common enough in French) would be very convenient. Such reversed letters would not only be easy to read when printed but would be very easy to write. But the use of *ch* and *sh*, combinations of *h* with other letters to represent simple sounds, is to a great degree in conformity with ancient Roman usage, where *ph*, *th* and *ch* itself were used to represent simple Greek sounds; and in Japanese too such a method would cause no confusion, since the language has not the combinations (so common in some countries) of the *ph*, *th* and *ch*, of *uphill*, *outhouse*, *public-house*. In all those Roman cases, to be sure, the resemblance of the sounds to the ordinary sound of the letter before the *h* is slightly greater than it is in our

common *ch*. Nevertheless it is better even here to stick to our rule of following the prevalent modern usage in orthography, merely extending to the use of the letters the rule that the best authorities have for thousands of years expressly acknowledged as the only sensible and practical one in other grammatical and rhetorical matters, “the law and test of correct speech.”

The Japanese alphabet, then, would consist of twenty-one letters: *a, b, c, d, e, g, h, i, j, k, m, n, o, p, r, s, t, u, w, y, z*. Of course the other Roman letters could be used, if desired, for foreign words, the introduction of which into Japanese is often so convenient to students of our western arts and sciences, and would be so very greatly facilitated by exchanging the present cumbrous characters for our alphabet.

The “fifty sounds,” with the addition of two series of equally simple syllables now written in Japanese with two characters each, and of the series of nasal vowels indicated by the letter *n*, would be written as follows:

<i>a,</i>	<i>i,</i>	<i>u,</i>	<i>e,</i>	<i>o,</i>
<i>an,</i>	<i>in,</i>	<i>un,</i>	<i>en,</i>	<i>on,</i>
<i>ka,</i>	<i>ki,</i>	<i>ku,</i>	<i>ke,</i>	<i>ko,</i>
<i>sa,</i>	<i>shi,</i>	<i>su,</i>	<i>se,</i>	<i>so,</i>
<i>sha,</i>	<i>shi,</i>	<i>shu,</i>	<i>(she),</i>	<i>sho,</i>
<i>ta,</i>	<i>chi,</i>	<i>tsu,</i>	<i>te,</i>	<i>to,</i>
<i>cha,</i>	<i>chi,</i>	<i>chu,</i>	<i>(che),</i>	<i>cho,</i>
<i>na,</i>	<i>ni,</i>	<i>nu,</i>	<i>ne,</i>	<i>no,</i>
<i>ha,</i>	<i>hi,</i>	<i>hu,</i>	<i>he,</i>	<i>ho,</i>
<i>ma,</i>	<i>mi,</i>	<i>mu,</i>	<i>me,</i>	<i>mo,</i>
<i>ya,</i>	<i>i,</i>	<i>yu,</i>	<i>(y)e,</i>	<i>yo,</i>
<i>ra,</i>	<i>ri,</i>	<i>ru,</i>	<i>re,</i>	<i>ro,</i>
<i>wa,</i>	<i>i,</i>	<i>u,</i>	<i>e,</i>	<i>(w)o;</i>

and the corresponding “impure sounds:”

<i>ga,</i>	<i>gi,</i>	<i>gu,</i>	<i>ge,</i>	<i>go,</i>
<i>za,</i>	<i>(zhi),</i>	<i>(zu),</i>	<i>ze,</i>	<i>zo,</i>
<i>da,</i>	<i>ji,</i>	<i>dzu,</i>	<i>de,</i>	<i>do,</i>
<i>ja,</i>	<i>ji,</i>	<i>ju,</i>	<i>(je),</i>	<i>jo,</i>
<i>ba,</i>	<i>bi,</i>	<i>bu,</i>	<i>be,</i>	<i>bo;</i>

and the “half impure:”

<i>pa,</i>	<i>pi,</i>	<i>pu,</i>	<i>pe,</i>	<i>po;</i>
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making ninety-five syllables in all, including twelve or more repetitions or syllables that do not really occur in the Japanese of Yedo and Kiyôto. Surely there can be no serious difficulty to the Japanese in learning so simple a table to replace their *kana*.

The syllables *she, che, yi, ye, wi, wu, we, zha, zhi, zhu, zhe, zho, zu, je* do not seem to occur in the present spoken language of Yedo and Kiyôto. *Ye* (except in some provinces, as for example, Higo) is found only in the recitation of the “fifty sounds”; and *wo* as distinguished from simple *o* seems also not to be found elsewhere. The fact that the protrusion of the lips for the Japanese *o* is more marked than for our *o* in *lord* may account for the incorrect impression that a *w* exists before it, especially when following *i*. In the word *iwoo*, or *iwô* (sulphur), derived from *iwau*, the combination *wo* apparently does occur; and perhaps in some other like cases. Some Japanese maintain that *zu* and *dzu* are both distinctly heard in Yedo or Kiyôto in correspondence with their two *kana* characters, but the idea would appear to be an illustration of the desire already mentioned to find a difference in pronunciation where one exists in writing. Nevertheless, in some provinces or individuals there may be such a distinction, or perhaps *zu* may be used always instead of *dzu*. *Je* is said to be used at Nagasaki instead of *ze*. *Sha, shu, sho, cha, chu, cho, ja, ju, jo*, are now written in *kana shiya, shiyu, shiyo, chiya, chiyu, chiyo, jiya, jiyu, jiyô*; and the other *kana* combinations, *shia, shiu, shio, chia, chiu, chio, jia, jiu, jio* (if they all occur) ought still to be written in that way; since they are by natives clearly so sounded, though by foreigners often pronounced as one syllable.

The clumsy Japanese modes of indicating the doubling of the sound of consonants, by writing the character for *tsu* before *p, t, ch, s, sh* and *k*, and sometimes *ku* before *k* and *n* before *m*, should not by any means be copied in romanizing modern Japanese. Strict analogy requires even that the *ch* and *sh* should in such a case be written double as they commonly are in romanizing Indian languages, though the sound of the first *ch* is scarcely distinguishable by the ear from *t*, and that of the first *sh* from *s*. Indeed the two halves of a double consonant are but the two halves of a single one emphasized and sometimes slightly separated.

The custom of some foreigners to write *n* instead of *m* before *p, b, m*, is inconsistent with Japanese pronunciation and with the laws of euphony of most languages.

The *y* after a vowel following other consonants than *sh* or *ch* is often dropped by mere carelessness in foreign pronunciation (that may, however, by this time have become well established); as in *miya, riyô, daimiyô, Tôkiyô, Kiyôto*; but there is nothing in good native pronunciation or writing to sanction such a practice, and sometimes the meaning would become different by the omission.

It should not for a moment be forgotten that the object in romanizing Japanese for the Japanese is very different from what is aimed at in anglicizing or gallicizing or germanizing a Japanese word, and that the methods must often be extremely unlike.

The differences, then, between the system of romanizing here recommended and that of Dr. Hepburn, which has already deservedly made more progress than any other towards general acceptance among foreigners, consist merely in writing *hu* instead of *fu*, in dropping the silent (or only provincial) *y* of *ye* and *w* of *wo*, in not replacing *jiu* and *shiu* by *jū* and *shū*, in preferably writing the double vowels as well as consonants in full, and in using, if desired, certain accents for Chinese words.

4 Commentary on Lyman's 1878 Article

4.1 Introduction

Lyman's 1878 article is in some respects remarkably sophisticated for its time, and his extensive prior experience with languages was a great help in his endeavor.¹ Because of his European training (§2.1), we can be sure that he knew French and German well, and he had at least some exposure to several other languages, including Mandarin and Hindi. On the other hand, we can see very clearly that existing conceptions of phonetics and phonology did not allow an account of Japanese pronunciation that present-day linguists would find satisfactory. Something like IPA transcription would have been a big help, especially in Lyman's treatment of Japanese vowels, but the International Phonetic Association was not founded until 1886. Also, the phonemic principle was a notion whose time had not yet come; the idea that different phonetic segments (physical entities) could be understood as realizations of a single phoneme (a psychological entity) did not become commonplace until the mid-20th century.² The need for such a conceptual framework is especially obvious in Lyman's efforts to describe Japanese consonants.

Lyman's descriptions of Japanese vowel qualities are far more detailed than those of his contemporaries. For example, Brown (1863) says the five short vowels are "invariably" like English *a* in *ah*, *ey* in *they*, *i* in *machine*, *o* in *no*, and *oo* in *fool*, and Hepburn (1872:xii–xiii), in the introduction to the second edition of his famous dictionary (the latest available when Lyman was writing), provides only slightly more information.³ Of course, Brown and Hepburn were only trying to give useful advice to ordinary learners of Japanese as a foreign language. Lyman's more thorough explanations would have been excessive and of little practical value to such people, despite his claim in the first paragraph of his article that he was motivated by a desire to help others learn Japanese (Vance 2012a:40).

Lyman said that he was following a classification scheme proposed by Porter (1866) for describing vowels in articulatory terms, but he did not include any information about this scheme. Porter's proposal was a commendable effort for the time, but his descriptions do not always translate straightforwardly into a modern framework. Porter used two parameters to specify tongue position and treated the presence or absence of rounding as an independent feature. His diagram showing the tongue-position parameters appears below in Figure 4.1.

One tongue-position parameter was similar to the modern front–back dimension. It appears to specify a point on the surface formed by the palate (with the velum closed) and the rear wall of the pharynx by determining where the distance

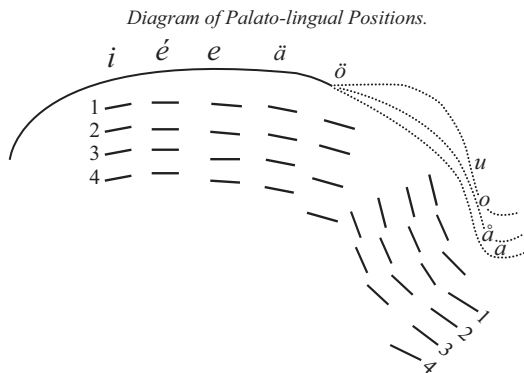


Figure 4.1: Porter’s Tongue-Position Diagram (Porter 1866:176).

between the tongue and this surface begins to widen on the path from the larynx to the lips. For positions near the front of the mouth, this parameter corresponds closely to the modern front–back dimension, but for positions near the rear of the mouth, it corresponds to a mixture of the modern front–back and high–low dimensions. Porter’s other tongue-position parameter was degree of openness, that is, the degree of separation between the tongue and the palato-pharyngeal surface at the point specified by the first parameter. He provided for four degrees of openness at every position, with 1 representing the minimum and 4 the maximum. For positions near the front of the mouth, the openness parameter corresponds closely to the modern high–low dimension, but for positions near the rear of the mouth, it corresponds to a mixture of the modern high–low and front–back dimensions. We can see how Lyman applied Porter’s system to English in an article on English orthographic reform that he published many years later in the *Proceedings of the American Philosophical Society* under the title “A Practical Rational Alphabet” (Lyman 1915). This later article provides a number of hints that help us better understand what Lyman wrote in 1878, and I will refer to it several times in this chapter.

In the end, Lyman’s descriptions of Japanese vowels are just a matter of comparison, using vowels in other languages, especially English, as reference points. But without anything like IPA transcriptions, diachronic change and dialect variation often make it highly problematic to determine exactly what vowel quality he had in mind when he cited an example. As we saw in §2.1, Lyman had lived in Boston, Philadelphia, and India before coming to Japan in 1873, and the native English speakers that he interacted with in Japan were a heterogeneous group. To make matters worse, it is difficult to be sure about some of the relevant aspects of his native western Massachusetts dialect. It is clear from his later article

(Lyman 1915:362) that he was well aware of dialect differences in English pronunciation, but he was a hopeless purist. He believed that English should become the universal language of humankind and that his proposed orthography would improve its prospects, but he realized that the spellings chosen in the new system would have to reflect a particular variety of English. He argued that the norm should be “the usage of speakers of some region, or of some degree of cultivation” (Lyman 1915:369), and there is little doubt that he considered himself a model speaker. We will see several indications of Lyman’s belief in the supremacy of English in §§4.5–6 below.

Lyman’s hometown, Northampton, is in the area that Kurath and McDavid (1961:14) label the Lower Connecticut Valley, and they provide narrow phonetic transcriptions of the vowels in several words produced by a Northampton speaker who was interviewed at age 51 in 1931 (Kurath and McDavid 1961:24, 41). This speaker seems to have had a so-called *r*-less dialect, since there is no indication of rhoticity in the transcriptions of any of the diagnostic words.⁴ Kurath and McDavid (1961:14) say that the absence of /r/ in syllable codas was typical of “cultivated city speech” in this area around 1930, but the situation was probably different in the mid-19th century when Lyman was growing up. We can be virtually certain that Lyman’s native dialect was not *r*-less, because in his later article on writing reform he cites “dropping *r* altogether after a vowel and before a consonant, as in *arm*” to illustrate “slackness or slovenliness of articulation or enunciation” (Lyman 1915:362), and he even suggests that “well taught children should . . . everywhere learn to pronounce the words as they are spelled, and not be allowed to drop the sound of *r* in *arm* . . .” (Lyman 1915:369). Lyman cited the *a* in *arm* and the *o* in *lord* as reference vowels in his attempts to zero in on the qualities of Japanese /a/ and /o/ (see §4.2 below), and assuming these examples were taken from an *r*-ful American dialect, they were rather poor choices. The combination of a vowel followed by a coda /r/ in such a dialect is realized phonetically as what could be described as a rhotic diphthong, and the reduced inventory of vowel contrasts in such syllables is a notorious problem for phonemic analysis (Twaddell 1935; Harris 1994:254–265). On the other hand, as we will see in §4.3, Lyman cited the words *art* and *part* to illustrate “English *r*,” and these choices would be inexplicable if they were taken from an *r*-less dialect.

One aspect of Lyman’s 1915 article that casts additional doubt on his descriptions of English vowels is that he not only followed Porter’s (1866) system but, with very few exceptions, cited the same words as examples. Porter was from Farmington, near Hartford in central Connecticut (Barnhart and Halsey 1954:3229), and he was a generation older than Lyman. Farmington is only about 70 kilometers from Northampton and is in the same Lower Connecticut

Valley dialect region (Kurath and McDavid 1961:14). Porter and Lyman undoubtedly spoke very similar native dialects, but we have to wonder whether their vowel systems were really identical.⁵

Overall, Lyman's descriptions of Japanese consonants are relatively easy to interpret phonetically. We will see glimmers of phonemic intuitions here and there when we examine these descriptions in §4.3, and also when we consider Lyman's romanization recommendations in §4.6, but he certainly did not have anything like a modern concept of a phoneme. In contrast to his knowledge of vowels and consonants, Lyman had only a vague understanding of the Japanese pitch-accent system, as we will see in §4.4.

4.2 Vowels

Lyman's descriptions of the five distinctive vowel qualities of late 19th-century Tōkyō Japanese are fairly easy to interpret, although it is not always clear exactly what he meant when he said that a vowel sound is long or short. He treated contrastively long and short vowels as single versus double vowels, and he described a double vowel as "the same sound doubly prolonged, or repeated." When he labeled a vowel sound as long or short, he obviously meant something else, and in most cases he was clearly referring just to small, non-distinctive differences in duration. In presenting the vowel-description system that Lyman had adopted, Porter (1866:173) strongly cautioned his readers not to confound length differences and quality differences, but he acknowledged a "natural and universal" tendency for quality changes to accompany duration changes. We can assume that Lyman tried his best to follow Porter's advice, but we cannot be sure that he was always successful.

In the case of the phoneme corresponding to ^{MT}/a/, Lyman cited the *a* in English *father* to illustrate the prototypical pronunciation, and he added that it was "closer" and "perhaps shorter" than the *a* in English *arm* or the *â* in French *âme* 'soul'. It seems safe to assume that the variety of French Lyman had in mind maintained a contrast between back [ɑ] in words like *âme* and front [a] in words like *ami* 'friend'.⁶ Judging from Porter's (1866:176) diagram, "closer" would have meant both higher and more back for vowels like the ones that Lyman was comparing with Japanese /a/, but as mentioned above in §4.1, it is sometimes hard to reconcile a description couched in Porter's terms with a modern description of vowel articulation. In any case, Lyman's description seems to indicate that the Japanese vowel in question had a quality close to [ɑ].

Lyman went on to comment on what linguists today would call allophonic variation, noting that some instances of this Japanese vowel might be longer, like the

a in English *arm* or the *â* in French *âme*, while others might be shorter, like the *a* in English *ask*. There is no doubt that the vowel in *ask* is typically shorter than the vowel in *arm*, primarily because it precedes a voiceless coda.⁷ But the vowels in these two words have very different qualities in the varieties that are typically used to represent American English in linguistics textbooks: [a] in *arm* as opposed to [æ] in *ask*.⁸ On the other hand, the vowels in these two words have the same quality in the British variety treated as standard in dictionaries: [a] both in *arm* and in *ask* (see, e.g., the entries in Procter 1978). Judging from the remarks and the transcriptions provided for Northampton by Kurath and McDavid (1961:14,41), it seems likely that in Lyman's native dialect the *a* in *father*, the *a* in *arm*, and the *a* in *ask* all had essentially the same quality, probably more central than [a]. In his later article on English orthographic reform, Lyman (1915:364–366) claimed that the vowel in *ask*, the first vowel in *father*, and the vowel in *arm* were the same on Porter's constriction-location dimension but differed both in length and in degree of openness, describing the *a* in *ask* as short and close (degree 1 of openness), the *a* in *father* as longer and more open (degree 2 of openness), and the *a* in *arm* as even longer and even more open (degree 3 of openness). He recommended using ⟨a⟩ for *ask* and ⟨aa⟩ both for *father* and for *arm*, arguing that the additional length and openness in *arm* were predictable from the following *r*. We can probably take Lyman's remarks about instances of Japanese /a/ being long or short as straightforward reports of differences that he perceived as purely durational. All in all, Lyman's description of Japanese /a/ does not seem out of line with my own description of the prototypical pronunciation in modern Tōkyō as between [a] and [a] (Vance 2008:54).

Unfortunately, Lyman did not provide any helpful information about the environments of the longer and shorter variants of Japanese /a/ that he tentatively acknowledged, but the phrase “in certain Japanese words” indicates that he saw any differences that might have existed as inherent properties of lexical items and not as something that might have varied from token to token of the same item. His later article (Lyman 1915:363) shows that he was well aware (at least by then) of token-to-token variability in the pronunciation of individual speakers, but he was quite right to insist (Lyman 1915:369) that a writing system had to reflect what he called a certain “degree of emphasis,” which, in context, clearly means something like careful pronunciation. In his 1878 article he cited two lists of words containing /a/ and insisted that it was a “hallucination” to think that some had a longer /a/ and some had a shorter /a/. It is possible that this strongly worded passage reflected some kind of intuition on Lyman's part that all instances of /a/ were psychologically the same sound, that is, realizations of the same phoneme, but I do not offer this suggestion with any confidence. As noted above

in §4.1, he certainly did not have a modern understanding of the phonemic principle. The two lists that Lyman cited are: (1) *matsu, tatsu*; and (2) *sake, yama, minato, hana, asa, tachibana, naru*. He did not say anything about where these lists came from, but it seems very likely that he was responding to some public claim that the instances of /a/ in (1) and (2) differed in length. (Some of the words on the second list contain more than one /a/, and Lyman did not make it clear whether the claim he rejected was supposed to apply to every /a/ or just to the first /a/ in each word.) Whatever might have been responsible for the idea that the examples of /a/ in (1) were longer, it does not seem possible that it could have been just a matter of perceiving vowels in accented syllables as longer than vowels in unaccented syllables.⁹ Without definitions, of course, we cannot be sure about the intended vocabulary items, but the likely candidates for modern Tōkyō counterparts of the items in (1) have /a/ in an initial accented syllable: /ma⁺c-u/ 待つ ‘to wait’ or /ma⁺cu/ 松 ‘pine’, and /ta⁺c-u/ 立つ ‘to stand’.¹⁰ The likely candidates for modern Tōkyō counterparts of some of the items in (2) also have /a/ in an initial accented syllable: /a⁺sa/ 朝 ‘morning’ and /na⁺r-u/ 成る ‘become’.¹¹ There is probably no point in speculating about these lists any further, but a possible contributing factor is the susceptibility to devoicing of the final /u/ in the items on list (1). When /u/ is devoiced, /ma⁺c-u/, /ma⁺cu/, and /ta⁺c-u/ sound monosyllabic to a native English speaker, and in stress-timed languages like English, the single syllable in a monosyllabic word is normally longer than the same syllable in a polysyllabic word (Reetz and Jongman 2009:217). There is a brief discussion of vowel devoicing later in this section.

Lyman described the phoneme corresponding to ^{MT}/o/ as between the *o* in English *snow* and the *o* in English *lord*. His wording seems to imply that these two English vowels differed on the front–back dimension rather than the high–low dimension, but he presumably meant just that the *o* in *snow* was one step closer to the lips than the *o* in *lord* on Porter’s (1866) constriction–location dimension. As we saw in §4.1, this parameter mixes the modern high–low and front–back dimensions for back vowels. Lyman added that Japanese /o/ was pronounced “with the lips stiffened,” and as we will see below in §4.3, he made it clear in his discussion of consonants that he took stiffening and protrusion as the same thing, that is, rounding. In his later article, Lyman (1915:365–366) described both the vowel in *snow* and the vowel in *lord* in as close (Porter’s degree 1 of openness), long, and rounded. I have described the prototypical pronunciation of ^{MT}/o/ as between [o] and [ɔ] in terms of height (Vance 2008:54), and Lyman’s native dialect probably had a monophthong close to [ɔ] in *lord* and a diphthong close to [ou] in *snow*, although the latter may have been more monophthongal than this transcription suggests. Kurath and McDavid (1961:14) say that Lower Connecticut Valley speakers

around 1930 had a diphthong for /o/ (the vowel in *snow*), but they say that the upglide was swift and brief, and the transcription for their Northampton speaker (Kurath and McDavid 1961:41) has the equivalent of [o^u] for the vowel in *know*. Lyman summed up his description of Japanese /o/ by identifying it with the Italian “*o aperto*” (i.e., open *o*) that dictionaries of modern Italian describe as [ɔ] in the variety they treat as standard (see, e.g., the phonetic symbols used in Nogami 1964:vii). In contrast to the other four Japanese vowel qualities, Lyman does not mention a shorter variant of /o/.

Lyman’s description of the phoneme corresponding to ^{MT}/u/ implies a tongue position between the positions for [u] and for [ø]. The English example he cited for the former was *rule*, and there is no real doubt that this word had something close to [u] in his native dialect. In his later article (Lyman 1915: 365–367), he described it in Porter’s (1866) terms as close (degree 1 of openness), long, and rounded. Kurath and McDavid (1961:14) do not have anything special to say about this vowel for Lower Connecticut Valley speakers around 1930, and the transcriptions of the vowels in *two* and *tooth* are both half-long [uː] for the Northampton speaker (Kurath and McDavid 1961:41). The example Lyman cited for the second of his two reference vowel qualities was French *jeûne* ‘fasting’, which has [ø] in the variety that modern dictionaries treat as standard (see, e.g., the entry in Cousin 1988).¹² It is interesting to compare the vowel diagrams provided by Fougeron and Smith (1999:78) for French and by Okada (1999:117) for Japanese. As Figure 4.2 below shows, if we draw a line on the French diagram connecting the dots that show the prototypical tongue positions for French /u/ and /ø/ and then superimpose the dot from the Japanese diagram that shows the prototypical tongue position for ^{MT}/u/, the superimposed dot falls near the line, although it is quite a bit closer to the dot for French /u/ than to the dot for French /ø/.

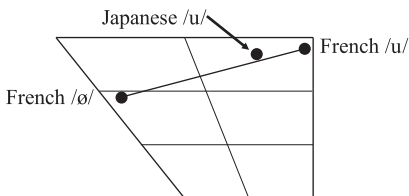


Figure 4.2: Prototypical Tongue Positions for Modern Tōkyō Japanese /u/ and for Modern Parisian French /u/ and /ø/.

Lyman said that this vowel quality was “heard in the South Carolina pronunciation,” and almost all the transcriptions provided for South Carolina speakers by Kurath and McDavid (1961:91–97) represent the vowels in *two* and *tooth* as close to [u̠], that is, high and rounded but more central than [u].¹³

Lyman also mentioned a shorter allophone of Japanese /u/, and it is clear that he perceived it as differing from the longer allophone not only in duration but also in quality. He described it as having a tongue position between the *u* in English *pull* and the *eu* in French *jeune* ‘young’. The 1931 transcription of the vowel in *pull* reported by Kurath and McDavid (1961:41) for their Northampton speaker is half-long [ʊ̄], and in his later article, Lyman (1915:365–367) described it in Porter’s (1866) terms as more open (degree 2 of openness) and shorter than [u] (i.e., the *u* in *rule*), with the same constriction location. In the variety of French that modern dictionaries treat as standard, *jeune* has [œ] (see, e.g., the entry in Cousin 1988).¹⁴ It seems safe to take Lyman’s description of the shorter allophone of Japanese /u/ as implying a tongue position between [ʊ̄] and [œ], that is, slightly lower than the tongue position for the longer allophone. He did not say anything about the distribution of these variants of /u/.

Lyman said that Japanese /u/, like /o/, was pronounced “with the lips stiffened” (i.e., rounded).^{MT}/u/ lacks prototypical rounding (protrusion), although it has lip compression in careful pronunciation (Okada 1999:118; Vance 2008: 54–55). Broad phonetic transcriptions of modern Tōkyō Japanese often use [u] for the high back vowel. It is widely reported that western dialects of Japanese have a more rounded high back vowel, although not as rounded as [u] (Kubozono 1999:36), and even in less careful pronunciation, modern Tōkyō Japanese maintains an allophone of /u/ with obvious lip activity immediately following alveopalatal /š/ [ç], /č/ [tʃ], or /j/ [dʒ] (Schane 1971:509–511; Vance 2008:209). It could well be that Tōkyō /u/ was more rounded when Lyman was writing than it is today. The cursory description of Japanese /u/ in the second edition of Hepburn’s dictionary (Hepburn 1872:xii) is basically consistent with Lyman’s: the sound of *u* in English *rule* or *oo* in English *moon*. Interestingly, however, Hepburn clearly heard something different immediately following an alveolar fricative, since he added that the vowel following *ts*, *dz*, and *s* (corresponding to ^{MT}/c/ [ts], ^{MT}/z/ [dz]~[z], and ^{MT}/s/ [s]) was “pronounced with the vocal organs fixed in the position they are in just after pronouncing the letter *s*.” The 1867 first edition of the dictionary has the romanizations ⟨masz⟩, ⟨matsz⟩, and ⟨madz⟩ where the 1872 second edition has ⟨masu⟩, ⟨matsu⟩, and ⟨mazu⟩ (cf. modern Tōkyō /masu/ 鱒 ‘trout’, /macu/ 松 ‘pine’, /mazu/ 先ず ‘first’), and regarding the vowel at the end of these words, Hepburn (1867:ix) wrote, “It has no equivalent in English, but as near as possible to the sound expressed by the letters.” Some more recent descriptions of Tōkyō Japanese note a central allophone of /u/ immediately following alveolar [s], [z], or [n] (Homma 1973:352–353; Sakuma 1973:35; Kawakami 1977:24), and Hepburn’s account suggests something similar. Hepburn probably perceived less rounding in /u/ following [s] or [z] than elsewhere, since

an English-speaking user of his dictionary would not have been likely to produce a rounded final [zʷ] in response to a romanization ending in ⟨z⟩ (like ⟨masz⟩, ⟨matsz⟩, and ⟨madz⟩).

Lyman described the phoneme corresponding to ^{MT}/e/ as similar to the *e* in English *met* and probably identical to the *ê* in French *tête* ‘head’, which has [ɛ] in the variety that modern dictionaries treat as standard (see, e.g., the entry in Cousin 1988). Lyman’s native dialect probably had a monophthong close to [ɛ] in words like *met*. The 1931 transcriptions of the vowels in *ten*, *egg*, and *head* reported by Kurath and McDavid (1961:41) for their Northampton speaker are all [ɛ]. Nonetheless, Lyman apparently felt that the *e* in English *met* was not exactly the same as the *ê* in French *tête*, although it may be that he was just following Porter (1866:186), who described these two vowels as sharing the same constriction location but differing in degree of openness: degree 3 for the *e* in English *met* and degree 4 for the *ê* in French *tête*. I have described the prototypical pronunciation of ^{MT}/e/ as between [e] and [ɛ] in terms of height (Vance 2008:53), and I have no explanation for Lyman’s intuition that Japanese /e/ had a lower tongue position than the *e* in *met*. Lyman’s feeling that Japanese /e/ was “more prolonged” than the *e* in *met* is presumably just a reflection of the fact that all English vowels are short before a voiceless coda, as noted earlier in connection with *ask*. Lyman remarked tersely that there might also have been “a shorter *e* just like the *e* in *met*,” which presumably means that he perceived it as differing from the allophone already described not only in duration but also in tongue position. Tranel (1987:50) says that there are no vowel length distinctions in modern “standard” French, but there almost certainly were in the varieties that Lyman heard in Paris in the late 19th century, and the vowel in *tête* would have been long.¹⁵

Lyman described the phoneme corresponding to ^{MT}/i/ as similar to the *i* in English *machine*, which almost certainly had [i] in Lyman’s native dialect. Kurath and McDavid (1961:14) do not have anything special to say about this vowel for Lower Connecticut Valley speakers around 1930, and the transcriptions of the vowels in *three* and *grease* are both half-long [iː] for the Northampton speaker (Kurath and McDavid 1961:41). In his later article, Lyman (1915:368), following Porter (1866:187), described the *i* in English *pique* and *machine* as having a constriction location as far forward as possible with minimum openness (degree 1). Like everyone else, I have used [i] consistently for the modern Tōkyō vowel over the years (Vance 1987:10, 2008:53).

Lyman also mentioned a shorter allophone of Japanese /i/, but once again he did not provide any information about distribution. As examples of vowels similar to the allophone that he perceived as shorter, he cited the first *i* in English *divine*, the *i* in German *mit* ‘with’, and the *i* in French *ami* ‘friend [masc.]’.

Here again, Lyman's examples were taken from Porter (1866:187–188), who said that the first *i* in English *divine*, the *i* in German *mit*, and the *i* in French *ami* all had the same maximally forward constriction position as [i] (i.e., the *i* in English *machine*) but one more degree of openness (degree 2). Modern dictionaries of American English give the first vowel in *divine* as [i] (see, e.g., the entries in Barnhart 1947 and in Morris 1969), although [i] and [ə] seem possible as well. German *mit* has [i] in the modern variety characteristic of educated northern speakers in Germany (Kohler 1999:87–88). Of course, as we saw in §2.1, Lyman studied in Freiberg, not in the region that later became northern Germany. French *ami*, on the other hand, has [i] in the variety that modern dictionaries treat as standard (see, e.g., the entry in Cousin 1988). As noted above in connection with Japanese /e/, late 19th-century Parisian French seems to have had vowel length distinctions, and Tranel (1987:50) says that some modern dialects have a long vowel in *amie* [ami:] 'friend [fem.]' contrasting with a short vowel in *ami* [ami]. Taken together, these examples at least suggest that Lyman perceived Japanese /i/ as having allophones that differed both in tongue position and in duration. Lyman's native dialect probably had an unambiguous [i] in monosyllabic words, since the 1931 transcriptions of the vowels in *six* and *crib* reported by Kurath and McDavid (1961:41) for their Northampton speaker are both [i]. As we saw above, Lyman cited the *u* in English *pull* as similar to the allophone of Japanese /u/ that he perceived as shorter, but instead of citing a monosyllabic word like *give* for his shorter allophone of Japanese /i/, he chose the unstressed syllable in *divine*. This asymmetry mirrors an asymmetry in Porter's descriptions of the relevant English vowels. Porter (1866:182, 187–188) said that the unstressed *u* in *fulfill* was more open (degree 3) than the stressed *u* in *full* (degree 2), but that the unstressed *i* in *divine* was less open (degree 2) than the stressed *i* in *give* (degree 3). All in all, it is hard to know exactly what to make of Lyman's description of Japanese /i/, but the same is true to some degree of all his descriptions of vowel quality.

Lyman said that all the Japanese vowels "except perhaps the short *i* and short *u*" have nasalized counterparts, which he described as "similar . . . to the nasal vowels indicated in French by the letter *n* . . ." All syllable-final nasal consonants in modern Tōkyō Japanese can be analyzed as realizations of a single moraic nasal phoneme /N/, and a vowel immediately preceding /N/ is clearly nasalized (Vance 2008:96–103). Kana spelling represents /N/ consistently as ⟨ん⟩ in hiragana or as ⟨ン⟩ in katakana, but this phoneme has a wide range of allophones, and there is no reason to think that the situation was any different in the variety of Japanese that Lyman was trying to describe. He seems to have interpreted some V/N/ sequences as just nasal vowels, and since /N/ is often realized as uvular [N:] immediately preceding a pause (Vance 2008:96),

his interpretation is understandable.¹⁶ Modern Tōkyō Japanese /boN/ 盆 ‘tray’, typically realized as [bõn:], and modern Parisian French *bon* ‘good’, typically realized as [bõ], are auditorily very similar, and there is evidence that the oral closure for Japanese /N/ is not always complete (Sakuma 1929:166; Hattori 1930:42; Bloch 1950:134–135; Aoki 1976: 204–205; Kawakami 1977:43). As noted above, Lyman did not say anything explicit about environments for the vowel allophones that he perceived as shorter, but his remark about “short *i* and short *u*” not having nasalized counterparts suggests that whatever the environments might have been, these allophones did not occur immediately preceding /N/.

On the other hand, Lyman apparently treated some instances of /N/ as consonants. It is impossible to be sure, but it seems likely that he would have seen the realizations of /N/ immediately preceding a fricative, a semivowel, or a vowel as just part of the nasalization on the preceding vowel. All these allophones in modern Tōkyō Japanese can be transcribed broadly as [ũ:], as in /daN·sa/ [dãũ:sɑ] 段差 ‘bump’, /daN·wa/ [dãũ:ɰɑ] 談話 ‘conversation’, and /daN·acu/ [dãũ:atsɯ] 弾圧 ‘oppression’ (Vance 2008:97–99). As noted above, Lyman also saw uvular [N:] (assuming that this was the prototypical pre-pausal allophone for late 19th-century Tōkyō speakers) as part of the nasalization on the preceding vowel, but all the other modern Tōkyō allophones of /N/ involve a more obvious oral closure (Vance 2008:96–100). As we will see below in §4.6, Lyman objected to romanizing /N/ as *n* before *b*, *p*, or *m*, calling this practice “inconsistent with Japanese pronunciation and with the laws of euphony of most languages.” This remark leaves little doubt that he interpreted /N/ preceding a bilabial closure as a consonant, since *n* as a representation of vowel nasalization would not be inconsistent in this way. ^{MT}/N/ is realized as [m:] before a bilabial closure, [n:] before an alveolar closure, [ŋ:] before velar closure, and so on, and of course the immediately preceding vowel is strongly nasalized. It seems likely that Lyman would have seen all these allophones as consonants, and he may well not have noticed the vowel nasalization that accompanies them. We will return to this question in §4.6.

Incidentally, syllable-final nasal vowels in modern Parisian French are not restricted to pre-pausal position. For example, *tomber* ‘to fall’ is pronounced [tõbe], and according to Tranel (1987:73), a “consonantal excrescence . . . does not occur . . .” He notes that English speakers tend to pronounce this word incorrectly as [tõ^mbe]. It would be interesting to know how Lyman would have described an example like this one, but the only French examples he cited were *mon* ‘my’, *vin* ‘wine’, *un* ‘one’.

As mentioned earlier, Lyman understood contrastive vowel length as a difference between “single or double” vowels, and he described the latter as “the same sound doubly prolonged, or repeated.” Instrumental studies on modern

Tōkyō Japanese typically show a ratio larger than 2:1 for long versus short vowels (Hirata 2004:566), but the only real problem with Lyman's impressionistic description is that the word *repeated* was not a good choice in this context. Modern Tōkyō Japanese allows sequences of two identical short vowels, usually across a morphological division, and it would be quite natural to refer to such a sequence as a repeated vowel. A sequence of two short vowels is phonetically distinct from the corresponding long vowel in careful pronunciation (Vance 2008:58–61; Toki 2010:22). To illustrate with examples that appear as headwords in the 1872 second edition of Hepburn's dictionary, ^{MT}/ono+ono/ 各々 'each' contains the two-syllable sequence /noo/, while ^{MT}/noH·ka/ 農家 'farmhouse' contains the long syllable /noH/. It probably did not occur to Lyman that there was anything to worry about here; it seems very unlikely that he would have been unable to distinguish between /oo/ and /oH/. We will return to this question below in §4.6.

Lyman's account of the "vowels" represented by *h* is quite modern-sounding. For example, Ladefoged and Maddieson (1996:137) say, "Forms of **h** . . . in which a turbulent airstream is produced at the glottis are also sometimes classified as fricatives . . . , but it is more appropriate to consider them in the chapter on vowels." Lyman's description of the *h* in English *he* amounts to saying that it is whispered [i]. Laver (1994:304–305) labels [h] a "whispered approximant" and describes the [h] in *he* [hi] as "a whispered or breathed version of [i]."

Lyman went on to say that whispered vowels also occurred "without any vowel immediately following them," and this is unmistakably a reference to the phenomenon that is usually called vowel devoicing when it occurs in modern Tōkyō Japanese. Strictly speaking, many so-called devoiced vowels are actually lost entirely except for coarticulation on the immediately preceding consonant (Kawakami 1977:71–74; Beckman and Shoji 1984; Faber and Vance 2000), but Lyman's feeling that the vowels were "there" in all such cases is very much in line with the intuitions of modern Tōkyō speakers (Vance 2008:210). Lyman noted that devoicing was especially likely to affect "short *i* and short *u*," but he did not say that other vowels could not be devoiced. It seems reasonable to infer that non-high vowels were not often but sometimes devoiced, just as in modern Tōkyō (Sakuma 1929:231–232; Martin 1952:14; Nihon Onsei Gakkai 1976:748). Lyman also mentioned that devoiced vowels were characteristic of "rapid pronunciation," and this may well have been true at the time, but in modern Tōkyō devoicing usually occurs even in careful speech, at least in the prototypical cases of a high vowel surrounded by voiceless consonants (Vance 2008:210). Lyman did not provide any hints about the environments that favored vowel devoicing.

Lyman was adamant that Japanese had no diphthongs, insisting that the sequences /ai/ and /oi/ had "each of the vowels distinctly sounded in two syllables,"

but he added that “the same may be said of the two parts of all the double vowels.” In modern Tōkyō Japanese, it is actually quite difficult to determine whether the two vowels in a V/i/ sequence are in the same syllable or not (Vance 2008:133–138, 2018b:144–148), but Lyman’s remark about the two halves of a long vowel being in separate “syllables” indicates that he was talking about something like moras rather than syllables. It appears that what Lyman was getting at here, using modern terminology, was the intuition that, just as in modern Tōkyō, a phonetic transition from [a] to [i] in Japanese was phonemically a sequence of /a/ followed by /i/, regardless of whether the two vowels are in separate syllables (Vance 2008:42). The appropriate phonemic analysis of English diphthongs is much less certain (Vance 2008:39–42), but one possibility is to treat *eye*, for example, as /ay/. This is the analysis that Lyman implied when he said, “The English combinations *ay* and *oy* . . . though commonly called diphthongs, are really, when rightly sounded, a vowel sound followed by the consonant *y* . . .” He added that these combinations could also be “when carelessly pronounced, simply a succession of two vowels,” and this can be taken as implying an analysis of *eye* as /ai/, that is, a sequence of the two vowel phonemes /a/ and /i/ within the same syllable. A third possible phonemic analysis is to treat [aj] in English as the realization of a single phoneme, and this analysis seems to be what Lyman was rejecting, although he would not have been able to put the matter in these terms. The issue for a phonemic analysis is the psychological status of such diphthong-like combinations in a particular language. It is not a question of pronunciation, as if it were possible to tell the difference between [aj] and [aj̥]. In any case, if we define a diphthong as a transition from one vowel quality to another within a single syllable, the number of phonemes involved is a separate question.

In an aside at the end of his description of Japanese /e/, Lyman mentioned that /ae/ tended to be confused with /ai/, and he suggested that this confusion was due to “the shortness and obscurity of the second vowel” in /ae/. Present-day Tōkyō speakers seem to feel that there is a syllable boundary between the two vowels in /ae/, but they arguably treat many instances of /ai/ as a diphthong (Vance 2008:133–138, 2018b:144–148). It is clear that /ae/ has been unstable historically. For example, comprehensive dictionaries (*Kōjien*, *Daijirin*) list /hai/ as an alternative pronunciation for /hae/ 蠅 ‘fly’, and according to *NKD*, /kairu/ is a historically attested alternative pronunciation for /kaeru/ 蛙 ‘frog’. The /ae/ sequence also behaves inconsistently in verb forms. The modern citation form of a verb (the *shūshikei* 終止形 ‘conclusive form’) is usually either unaccented, like /hare-ru/ 腫れる ‘to swell’, or accented on the second syllable from the end, like /hare⁺-ru/ 晴れる ‘to clear up’. The problem arises in accented citation forms. To account for /ha⁺ir-u/ 入る ‘to enter’, we can say that /ai/ is a diphthong, which makes /hai/ a long syllable: /ha⁺.i_̣r-u/ (cf. /to⁺.H_̣r-u/ 通る ‘to pass’). We

could take care of /ka⁺er-u/ 帰る ‘to return home’ and /ka⁺es-u/ 返す ‘to give back’ by saying that /ae/ is also a diphthong, making these two words /ka⁺.e_̂r-u/ and /ka⁺.e_̂s-u/, but this analysis makes /hae⁺-ru/ 生える ‘to grow’ an exception. Given the intuition of modern Tōkyō speakers that the two vowels in /ae/ are in separate syllables, it seems better to treat /ka⁺er-u/ and /ka⁺es-u/ as the exceptions and analyze all three words as containing three short syllables: /ha_̂e_̂r-u/, /ka_̂e_̂r-u/, /ka_̂e_̂s-u/ (Vance 2008:164–166).¹⁷ It could well be that at some time in the past, the two exceptional verbs were pronounced with the diphthong /ai/ rather than the sequence /ae/ (/ka⁺.i_̂r-u/, /ka⁺.i_̂s-u/) and that the phonemic forms were subsequently altered by spelling pronunciation while the accent locations remained unchanged. In fact, some phonologists who are native speakers of Tōkyō Japanese have told me they were surprised to learn as small children that the kana spellings of /ka⁺er-u/ and /ka⁺es-u/ have ⟨え⟩ (e) rather than ⟨い⟩ (i) as the second letter. There is also a published phonological treatment of modern Tōkyō Japanese that, without comment, transcribes the citation form of the verb meaning ‘to return home’ in a way that is equivalent to /ka⁺.i_̂r-u/ (Hayata 1966:64).

The point of this long digression is that a distinction between [ae] and [ai] is intrinsically difficult and unlikely to be stable diachronically. The confusion of /ae/ with /ai/ in Japanese does not require an appeal to some language-particular “shortness and obscurity” of the /e/ in /ae/.

4.3 Consonants

Lyman described the Japanese labial and velar consonants /p b m k g ŋ/ as exactly like their English counterparts, and as far as place of articulation is concerned, this account was probably correct. Neighboring vowels, especially immediately following vowels, have an effect on the precise place of articulation of the modern Tōkyō counterparts of these consonants, and the influence on velars is more obvious (Vance 2008:75–76, 87–88), but modern American English shows essentially the same coarticulatory effects. Most modern Tōkyō speakers do not have syllable-initial velar nasals (Hibiya 1999:106–112), and for those who do, it is not easy to decide whether these nasals ([ŋ]~[ŋʲ]) are allophones of the same phoneme as voiced velar stops ([g]~[gʲ]) or realizations of a separate phoneme (Vance 2008:214–222; Uwano 2010). We will come back to this question below in §4.6 in connection with the Roman-alphabet-based writing system that Lyman proposed for Japanese.

Lyman also listed Japanese /w/ as identical to its English counterpart.^{MT}/w/ seems to involve the same tongue position and lip activity as ^{MT}/u/ (Akamatsu

2000:97; Vance 2008:89–90), which means that it has lip compression (not true rounding) in careful pronunciation that tends to weaken or disappear in ordinary conversational speech. Some broad phonetic transcriptions use [u] for this modern Tōkyō semivowel. As mentioned above in §4.2, it is possible that Tōkyō Japanese /u/ was more rounded when Lyman was writing than it is today, and the same could be true of /w/.

Lyman lumped all the coronals together and said that the sounds corresponding to ^{MT}/t d n s z r š č j y/ were “all made with the tongue raised more or less at the same point.” He went on to say that they differed from English “in having the tongue raised at a point rather further forward in the mouth and close behind the teeth; and agree in that respect rather with the Irish and German and (principal) Hindustani *t*, *d* and *r*.” ^{MT}/t/, ^{MT}/d/, and ^{MT}/n/ are typically lamino-alveolar rather than apico-alveolar (Vance 2008:75–76, 87), but modern Irish /t/, /d/, and /n/ are usually described as apico-dental (Ní Chasaide 1999: 111–112) and modern Hindi /t/, /d/, and /n/ as lamino-dental (Ladefoged and Maddieson 1996:40).¹⁸ On the other hand, modern “standard” German /t/, /d/, and /n/ have been described as lamino-alveolar (Benware 1986:20, 28). Assuming the Tōkyō Japanese alveolars that Lyman heard were the same as those in use today, his imprecise remarks about place of articulation could reflect a vague awareness of the difference between laminal articulations in Japanese and apical articulations in English. Needless to say, he could not have known about the wide range of pairings of upper and lower articulators in the dental/alveolar region that modern phoneticians have documented (Ladefoged and Maddieson 1996:20–25).

Lyman said that the consonant corresponding to ^{MT}/š/ was “farther forward” than English /ʃ/, and assuming there have not been any notable changes since the late 19th century, this description is correct, as far as it goes. ^{MT}/š/ is typically realized as alveopalatal [ç] (Vance 2008:14, 77–79), and the constriction for [ç] is longer front to back than the constriction for postalveolar [ʃ] (Ladefoged and Maddieson 1996:143–144; Ladefoged 2007:164). ^{MT}/č/ and ^{MT}/j/ are also typically alveopalatal and can be transcribed broadly as [tç] and [dç] (Vance 2008:82, 84). Modern English are /č/ and /j/ are normally realized as postalveolar [tʃ] and [dʒ], but Lyman apparently did not notice this difference between the Japanese affricates and their English counterparts. (As noted below, the stop portions of the English affricates are homorganic with the following fricatives, so the commonly used symbols [t] and [d] are not really accurate.) Modern English /ʃ/ is ordinarily rounded [ʃ^w], no matter what the neighboring vowels are (Ladefoged and Maddieson 1996:148), but Lyman apparently was not aware of this secondary articulation. As noted above in §4.2, the lip compression in ^{MT}/u/ is normally maintained even in rapid pronunciation when this vowel immediately follows ^{MT}/š/, ^{MT}/č/, or ^{MT}/j/, and the consonants themselves

also have lip compression in this environment. These same three consonants are realized with rounding immediately before ^{MT}/o/ but without rounding or compression before the other modern Tōkyō vowels (^{MT}/i/, ^{MT}/e/, and ^{MT}/a/). Lyman mentioned that Japanese /š/ was “sometimes confounded with *s*, especially before the vowel *i*.” Even in modern Tōkyō Japanese, there is no contrast between /ši/ (realized as [çi]) and /si/ (realized as [si]). Only [çi] occurs in the kind of pronunciation that is recognized as “standard” (Vance 2008:78), although it has been widely reported in recent years that there is a trend among younger speakers to pronounce [si] rather than [çi] (Ōno 1994:271–272; Unger 2006). It is not entirely clear what Lyman meant by “confounded,” but it is possible that the consonant he romanized as *sh* was more variable in *shi* than in *sha*, *sho*, or *shu*.

Lyman noted that the consonant in the syllable he romanized as *hi* was pronounced “vulgarly” in Tōkyō as a sound that we can infer to be [ç]. He described the consonant in question as having “the tongue in the same position as for the *sh* but with the teeth open instead of closed . . .” Assuming that his *sh* corresponded to [ç] (see the paragraph just above), this description is not quite accurate. The tongue positions for these two consonants are not exactly the same, and the wider opening between the upper and lower incisors in [ç] is just a consequence of the small difference in jaw position required for dorso-palatal [ç] as opposed to lamino-alveopalatal [ç]. Since most phonetic transcriptions of ^{MT}/hi/ and ^{MT}/hy/ use [ç] (Kawakami 1977:48; Akamatsu 1997:90–91; Vance 2008:78–79), Lyman’s negative evaluation of [ç] comes as a surprise. On the other hand, some descriptions of Tōkyō Japanese have said that [hʲ], which lacks audible supraglottal turbulence, is a possible alternative for [ç] in most environments (Sakuma 1929:138–139; Kawakami 1977:49), and it could be that [hʲ] was more common in Lyman’s day. Later in his article, he listed the initial consonant in English *hue* as one of the sounds that did not occur in Japanese, and he described it as “a surd or whispered *y* that might have been written *yh*.” Phoneticians today understand that an approximant articulation is narrow enough to produce turbulence in the absence of voicing, and consequently, a voiceless [j] is the dorso-palatal fricative [ç] (Catford 1977:118–122, 1988:66). In fact, the word *hue* is sometimes cited to show that [ç] occurs in many varieties of American English (Ladefoged 1982:147; Vance 2008:79), but Lyman does not seem to have made the connection. Interestingly, in the sentence immediately following his list of sounds that did not occur in Japanese, he hedged and said that the whispered *y* might “be heard sometimes in rapid speech (as in the word *hiyaku*).” The word he intended here was undoubtedly the counterpart of ^{MT}/hyaku/ 百 ‘hundred’, and as we will see below in §4.6, he thought that it had three syllables in careful pronunciation, as his romanization implied.

Lyman maintained that Tōkyō natives clearly distinguished [ç]/[hʲ] (as in ^{MT}/hi/) from [ç] (as in ^{MT}/ši/), but he said that “natives of some provinces” and “foreigners” did not maintain the distinction. The merger of /hi hya hyo hyu/ with /ši ša šo šu/ was a stereotypical feature of so-called Shitamachi (下町 ‘downtown’) varieties of Tōkyō Japanese until late in the 20th century (Nakamura and Kindaichi 1955; Martin 1952:12; Hattori 1958:360), although it was probably as much a marker of social class as of geographical location. Traditional Shitamachi varieties had features that are typical of eastern dialects, while Yamanote (山の手 ‘foothills’) varieties probably originated as a sort of koiné used in upper-class neighborhoods with many residents who were originally often from other parts of Japan.¹⁹ According to Kindaichi (1988:25), the merger was no longer characteristic of Shitamachi residents by the time he was writing, but there is no question that varieties with the merger existed in Tōkyō when Lyman was living there. In fact, Hepburn (1872:xv) cited the merger as a characteristic of Tōkyō pronunciation: “*Hi* is pronounced *shi*; as *hibachi*, is pronounced *shibachi* . . .” But Lyman’s house (in Kōjimachi; see §2.1) was in the ritzier Yamanote part of the city, and the Japanese speakers that he usually associated with probably did not have the merger natively or, if they did have it, had learned a more prestigious variety.

Lyman correctly pointed out that the English affricates /č/ and /j/ do not have the same place of articulation as English /t/ and /d/. Although the affricates are typically transcribed as [tʃ] and [dʒ], the stop portions are actually homorganic with the following fricatives, so the symbols [t] and [d] are not really accurate here (Vance 2008:37). Lyman insisted that English /tʃ/ and /č/ were phonetically different, “as may easily be perceived in listening to an unpractised German, who pronounces *t* followed by *sh* without difficulty, but cannot give the English *ch*.” A /tʃ/ sequence is possible in English only if it straddles the boundary between words or between elements of a compound, as in *seat shop* /sit+ʃap/. Consequently, the two consonants in a /tʃ/ sequence are always in separate syllables. If we compare *sea chop* /si+çap/ and use the same stress pattern on both combinations (usually primary stress on the first element), the most obvious difference is the aspiration in the latter: *seat shop* [sitʃap] versus *sea chop* [sitʃ^hap]. (There is a brief discussion of aspiration in the paragraph just below.) Although the stop preceding [ʃ] is transcribed [t] in both these examples, it seems to be lamino-postalveolar (i.e., homorganic with [ʃ]) in both, although *seat shop* might allow something closer to the prototypical apico-alveolar place of articulation for /t/ in very deliberate pronunciation. In any case, Lyman’s observation about the pronunciation of non-native speakers gives his argument a very modern ring.

Using modern terminology, we can define an affricate as a single phoneme in some particular language that is realized as a stop+fricative sequence. In other

words, whether a phonetic sequence of a stop followed by a fricative is an affricate (as opposed to a sequence of two phonemes) is a question of phonology, not phonetics. (Compare the discussion above in §4.2 as to whether a diphthong should be analyzed as one phoneme or two.) Lyman clearly saw it as a mistake to treat English /č/ and /j/ as “compound sounds” (i.e., as two-consonant sequences), but since the distinction between a phoneme and its phonetic realization(s) is a notion that was not available to him, he felt compelled to back up his (phonemic) intuition that English /č/ and /j/ are single sounds by arguing that they were somehow phonetically unitary as well. He explained the “compound sound” error as due, at least partly, to “the absence of a single letter for each of the sounds in Greek, Latin and the principal modern European languages,” and he understood that the reason such letters are lacking is that the languages for which the alphabets were originally devised did not have the corresponding sounds. But he obviously was not prepared to entertain the idea that the same phonetic stop+fricative sequence could be a single phoneme for the speakers of one language but a sequence of two phonemes for the speakers of another language.

It is important to point out in this connection that Lyman did not say anything about [ts] being a single sound in Japanese. As we will see in Chapter 5, Lyman's 1894 article cited many examples of *rendaku* involving /c/ (realized as [ts]) alternating with /z/ (which he romanized as ⟨dz⟩ before /u/ but as ⟨z⟩ before other vowels), but *ts* is conspicuously missing from his list of voiceless obstruents (Lyman 1894:161).²⁰ He did list *t* and *s* separately as voiceless obstruents, and he presumably saw his statement that *rendaku* replaces voiceless consonants with “the corresponding sonant [i.e., voiced] ones” as covering the alternation of *ts* (/c/) with (d)z (/z/). It seems clear that Lyman was led astray by his intuition as an English speaker and never imagined that Japanese [ts] could be analyzed as something other than a sequence of /t/ followed by /s/. Interestingly, Lyman's knowledge of German did not help him here, even though the German writing system spells the affricate realized as [ts] with the single letter ⟨z⟩. We know that Lyman saw this as just a defect of the German writing system, because in his later article on English writing reform (Lyman 1915:360–361), he condemned the artificial languages *Vola-puek* and *Esperanto* for “giv[ing] to *z* the sound of two letters, *ts*, merely because it happens to have those sounds in German.”

The so-called voiceless stop and affricate phonemes in present-day English (i.e., /p t k č/) are sometimes aspirated and sometimes not, and the same was doubtless true in Lyman's day, but he seems to have been completely unaware of this phenomenon. Aspiration is variable in modern Tōkyō Japanese voiceless stops, and measurements show average VOTs in between those for prototypical voiceless unaspirated stops and prototypical voiceless aspirated stops (Riney et al. 2007).²¹ French voiceless stops are not aspirated (Tranel 1987:129–130),

but there is no way to know whether Lyman's French had the aspiration of a stereotypical American accent.

Lyman listed several English consonants for which he said there were no corresponding sounds in Japanese, and there is no real doubt about *th* (presumably covering both English /θ/ and English /ð/) or *v* (obviously English /v/).²² As for the other consonants on this list (*h* in *hue*, *l*, *f*, and *wh*), Lyman himself actually had more to say about each of them. The *h* in *hue* has already come up (see the discussion of [ç] above), and we will consider *l* (in connection with Japanese /r/) and then *f* and *wh* (in connection with Japanese /h/ and /f/) in the next few paragraphs.

Lyman described Japanese /r/ as “extremely different from the English *r* in *art, part . . .*” English examples with syllable-initial /r/ would have been better choices, especially for speakers of so-called *r*-less varieties of English. Lyman went on to say that Japanese /r/ had a “close affinity with *d*,” and this remark suggests that he was trying to describe the apico-alveolar tap [r] that is the prototypical realization of ^{MT}/r/ (Vance 2008:89). It is tempting to jump to the conclusion that “affinity with *d*” had something to do with the so-called “flap” realization of American English /t/ and /d/ as [r] (Kreidler 2004:118), but the historical development of this phenomenon is not well documented, and it may not have been a feature of Lyman's English. In any case, there is no need to appeal to English flapping as an explanation for the phonetic similarity that Lyman perceived between [d] and [r]. Children acquiring Japanese sometimes substitute [d] for [r] (Nihon Onsei Gakkai 1976:493), and the modern Tōkyō allophone of /r/ that occurs utterance-initially and immediately following /N/ is very [d]-like (Vance 2008:89, 97). In contrast to his extensive knowledge of French and German, Lyman apparently did not have enough experience with Spanish to compare Japanese /r/ to Spanish /r/, which is realized as [r] in most varieties (Hualde 2005:44, 186–188). Lyman also mentioned that “to an unpractised ear” Japanese /r/ resembled English /l/. It is common knowledge among teachers of Japanese today that English-speaking learners who cannot manage a tap [r] will sound better if they substitute English /l/ rather than English /r/ for Japanese /r/ (Alfonso 1971: xxvi).²³

Corresponding to Tōkyō [h], Lyman reported [f] in the province of Higo (now Kumamoto Prefecture) and [ϕ] (“made with the lips brought nearly together instead of with the lower lip touching the upper teeth”) in other western dialects, in particular in Izumo (now Shimane Prefecture). He offered the plausible diachronic explanation that Tōkyō [h] was the result of lenition of an earlier [f] or [ϕ], and as noted in §1.1, it is now universally accepted that all these fricatives are descendants of an earlier [p]. Lyman was troubled by the Tōkyō pronunciation of the CV sequence represented as ⟨fu⟩ in Hepburn romanization.

He was obviously struggling to capture a phonemic intuition, but, as already noted several times, he did not have a conceptual framework suited to this task. As mentioned above in §4.2, Lyman described Japanese /u/ as rounded (i.e., requiring “stiffening or protrusion of the lips in a marked degree”), and he said that this rounding caused the consonant in *fu* to be “mistaken for *f* or *ph* more than before other vowels.” Most phonetic transcriptions of the modern Tōkyō counterpart of the consonant in question use [ɸ] (Akamatsu 1997:86–89; Vance 2008:78–80), but Lyman insisted that “The only difference between the *hu* (of [Tōkyō] and [Kyōto]) and the English word *who* is in the fact that the Japanese vowel is made a little further forward in the mouth . . .” In fact, some descriptions of Tōkyō Japanese have said that [h], with no audible turbulence at the lips, is a possible alternative for [ɸ] in most environments (Bloch 1950:131; Kawakami 1977:52). It could be that [h] was more common in Lyman’s day, but it is also possible that his phonetic description was distorted by his phonemic intuition.

What Lyman presumably wanted to say, using modern terminology, is that the phonetic segments that occurred before /u/ (whether [h] or [ɸ]) and before /i/ and /y/ (whether [hʲ] or [ç]) were allophones of the same phoneme that was realized as [h] before /a/, /e/, and /o/, and this is why he was so unhappy with Hepburn’s decision to adopt the romanization ⟨fu⟩ rather than ⟨hu⟩. But at the time, linguists had not yet worked out the idea that different phonetic segments could be understood as realizations of a single phoneme, and Lyman undoubtedly felt a need to justify his intuition of “uniformity” by arguing that the pronunciation of the consonant in ⟨fu⟩ (and ⟨hi⟩) was essentially identical to that of the consonant in ⟨ha⟩, ⟨he⟩, and ⟨ho⟩. Incidentally, Hepburn described the consonant in ⟨fu⟩ unambiguously as [ɸ], but he apparently shared Lyman’s phonemic intuition, since he said in the introduction to the second edition of his dictionary (Hepburn 1872:xiii) that ⟨fu⟩ “might, for the sake of uniformity, be written *hu*.” In modern Tōkyō Japanese, [ɸ] occurs before vowels other than /u/ in recent loanwords, and one reasonable analysis of the current situation is to say that there has been a phonemic split, making [ɸ] and [h]~[ç] the realizations of two separate phonemes: /ɸ/, corresponding to Hepburn ⟨f⟩, versus /h/, corresponding to Hepburn ⟨h⟩ (Vance 2008:80, 225–226).

In regard to English *wh*, Lyman just mentioned in parentheses that there was no sound in Japanese corresponding to “its first part, a surd or whispered *w*.” What he had in mind here, of course, was the sound at the beginning of words like *which* and *where* in varieties of English that have a contrast between *which* and *witch* and between *where* and *wear*. My own intuition is that these pronunciations of *which* and *where* begin phonemically with the cluster /hw/, as in the transcriptions offered by Hockett (1958:86) and Kreidler (2004:90). Lyman presumably meant that these words begin phonetically with [ʍw], that is, with a

labial-velar approximant articulation accompanied by a transition from voiceless to voiced. Just voiceless [ɱ] is a more common phonetic description in modern sources, and the contrast is often presented phonemically as /ɱ/ versus /w/ (Ladefoged 1982:62; Rogers 2000:127). Since Lyman was convinced that Tokyo Japanese had [h], not [ɸ], immediately preceding /u/, he had no reason to point out the resemblance between [ɱ] and [ɸ].

It is not clear what accounts for Lyman's impression that "in general both the vowels and the consonants are made very far forward in the mouth" in Japanese, but it must have been something other than what is known as "articulatory setting" (Honikman 1964; Laver 1978). Someda (1966) argues that the articulatory setting for Japanese is more back than for English and French, citing a higher ratio of back to front vowels and a higher percentage of velar consonants in Japanese.

4.4 Accent

Lyman clearly understood that late 19th-century Japanese did not have a stress-accent system or a Chinese-like tone system. He was also well aware of Hepburn's (1872:xv) rudimentary account of the Tōkyō pitch-accent system, since he paraphrased it in its entirety. There is little doubt that the system was essentially the same as what we find in Tōkyō today, although the lexically specified accent on many individual words has certainly changed. The modern Tōkyō system is extremely well documented (see, e.g., Haraguchi 1977:7–56; Kubozono 2006), so there is no need to go into any detail here, but a brief description of how accent is realized will make it easier to interpret what Lyman and Hepburn said.

The unit that carries the characteristic Low-High(-Low) intonation contour of the Tōkyō dialect is called an **accent phrase** (AP), and in the modern system, an accent on an AP is realized as a steep drop from a relatively high pitch to a relatively low pitch. An AP can range from a single word (or even just part of a long word) to several words, and speakers often have some freedom as to how many APs they divide an utterance into, but all the examples that come up here are single words pronounced as single APs.

In general, it is only content words that are lexically specified for accent in the Tōkyō system. For a noun with n syllables, there are $n+1$ possibilities for accent location: it can be accented on any of the syllables, or it can be unaccented.²⁴ For a verb or adjective form, there are usually two possibilities at most, regardless of the number of syllables. As noted in the Preface, accent location is marked with a downward-pointing arrow (◌[◌]) in phonemic transcriptions, as in /ma[◌]kura/ 枕 'pillow', /tama[◌]go/ 卵 'egg', /takara[◌]/ 宝 'treasure', and (unaccented) /sakana/ 魚

‘fish’. If the final syllable is short and phrase-final, as in these last two examples, the distinction between final accent and no accent is neutralized, at least for most Tōkyō speakers.²⁵ A long (i.e., two-mora) syllable provides ample time for the steep drop in pitch that realizes an accent, so an accented long syllable starts very high and ends very low, although the tradition is to mark the accent between the two moras, as in /ȯ.Ṅdo/ 温度 ‘temperature’ and /ni̇.hȯ.N/ 日本 ‘Japan’. In accent phrases with long final syllables, it is easy to tell the difference between final accent, as in /ji̇.yu̇.H/ 自由 ‘freedom’, and no accent, as in /ri̇.yu̇.H/ 理由 ‘reason’.

The most important factor determining the intonation contour on an AP is whether or not there is an accent. The schematic diagrams in Figure 4.3 (Vance 2008:151–152) show the difference between an accented AP and an unaccented AP. The template for an accented AP includes an initial rise from the first mora (μ_1) to the second mora (μ_2), a further rise to the accented syllable, the sudden drop that realizes the accent, and a gradual decline thereafter.²⁶ The template for an unaccented AP involves just an initial rise and a gradual decline thereafter.

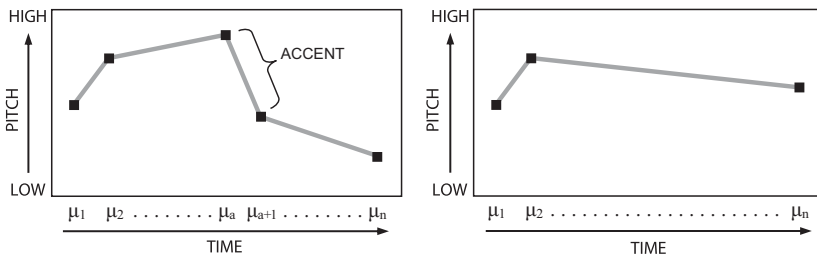


Figure 4.3: Basic Intonation Contours for Accented APs (Left) and Unaccented APs (Right).

An accent phrase can be so short that it does not provide enough moras to accommodate the entire template. Most of the examples that Lyman mentioned fall into this category, since they contain only two short syllables and thus only two moras.

Lyman’s initial response to Hepburn’s remarks on Tōkyō accent was very skeptical (see the “Accent” section of his article), but he was less dismissive after a “discussion with some educated Japanese friends,” who assured him that pitch differences could distinguish otherwise identical lexical items both in Tōkyō and in Kyōto (see the postscript at the end of the first installment). Hepburn (1872:xv) characterized accent as “a slight elevation of the tone upon the accented syllable,” but Lyman said it was “a slight rising or falling inflection.” Lyman used an acute accent mark to indicate a rise and a grave accent mark to indicate a fall, and he said that the final syllable was rising in the

words meaning ‘nose’ (*haná*) and ‘candy’ (*amé*) but falling in the words meaning ‘flower’ (*hanà*) and ‘rain’ (*amè*). Hepburn (1872:xv) used an acute accent mark to indicate high pitch, and he said that the words meaning ‘flower’ and ‘chopsticks’ had first-syllable accent (*hána*, *háshi*) while the words meaning ‘nose’ and ‘bridge’ had second-syllable accent (*haná*, *hashí*). Lyman challenged this description of the words meaning ‘chopsticks’ and ‘bridge’ in the “Accent” section of his article, as explained in more detail below, but it is not clear how to interpret what he said in terms of pitch patterns.²⁷

There is no indication that either Hepburn or Lyman understood that a content word might be unaccented, and as Table 4.1 shows, their accent markings cannot be reconciled with what we find in modern Tōkyō. The table also includes the accent locations reported by Yamada (1893) in the earliest dictionary to specify the Tōkyō accent for the headwords it lists (Mabuchi and Izumo 2007:151; Maeda 2007b), and for the words in the table, these 1893 specifications match the modern Tōkyō forms. Yamada’s original notation has been replaced with a number for each word to indicate which mora (counting from the beginning) would be followed by the downward arrow in the notation used here for modern Tōkyō accent; a zero indicates an unaccented word.²⁸

Table 4.1: Accent Examples (Hepburn and Lyman).

	Hepburn 1872	Lyman 1878	Yamada 1893	Modern Tōkyō	Modern Kyōto
‘flower’	花 <i>hána</i> (HL)	<i>hanà</i> (LF)	2	/hana ⁺ / LH	HL
‘nose’	鼻 <i>haná</i> (LH)	<i>haná</i> (LR)	0	/hana/ LH	HH
‘rain’	雨 —	<i>amè</i> (LF)	1	/a ⁺ me/ HL	LF
‘candy’	飴 —	<i>amé</i> (LR)	0	/ame/ LH	HH
‘chopsticks’	箸 <i>háshi</i> (HL)	—	1	/ha ⁺ ši/ HL	LH
‘bridge’	橋 <i>hashí</i> (LH)	—	2	/haši ⁺ / LH	HL

Table 4.1 includes the kind of mora-by-mora representations of pitch patterns that are traditional in Japanese dialectology, using H for high, L for low, F for falling, and R for rising. For the items reported by Hepburn and Lyman, these representations are in parentheses, since they are just inferences. There is not much doubt in Hepburn’s case, but Lyman did not say whether he thought the initial syllables in these four words were low or high. The modern Kyōto system and the very similar Ōsaka system are well documented (see, e.g., Haraguchi 1977:82–131; Nakai 2002), but they are considerably more complicated than the Tōkyō system, and I will not

introduce a way of marking Kyōto accent in phonemic transcriptions. Lyman does not seem to have realized that the Tōkyō and Kyōto systems were different, and it is likely that the accent patterns he reported involved a confusion of the two. There is no way to know what dialects his “educated Japanese friends” spoke natively.

Lyman was not completely unaware of dialect variation in accent, since he correctly noted the absence of accent distinctions in Aizu (now Fukushima Prefecture), which is in the center of the large “accentless” region in southern Tōhoku and northern Kantō (Hirayama 1998:129). On the other hand, it is not clear which speakers he was talking about when he claimed that “some Japanese” were not aware of accent distinctions. He recommended listening to “somebody of good intelligence and clear articulation who makes no pretence whatever to a literary education,” but this suggestion comes across as disingenuous when juxtaposed with his reliance on his “educated Japanese friends” for accent judgments. Lyman listed several additional pairs of segmentally identical words and said that “some Japanese” did not perceive any accent distinctions differentiating these items. These pairs are listed in Table 4.2, along with the corresponding modern Tōkyō and modern Kyōto forms.²⁹

Table 4.2: Accent Examples (Lyman).

Lyman 1878		Modern Tōkyō	HL	HL	Lyman 1878		Modern Tōkyō	HL	Modern Kyōto
‘field’	原	/ha ⁺ ra/	HL	HL	‘sea’	海	/u ⁺ mi/	HL	LH
‘belly’	腹	/hara ⁺ /	LH	HL	‘pus’	膿	/umi ⁺ /	LH	HL
‘oneself’	自身	/ji ⁺ šiN/	HLL	HLL	‘hitting’	打ち	/u ⁺ či/	HL	LF
‘earthquake’	地震	/jišiN/	LHH	HLL	‘house’	家	/uči/	LH	HL
‘umbrella’	傘	/ka ⁺ sa/	HL	LH	‘steaming’ ³⁰	蒸し	muši ⁺ /	LH	HL
‘eruption’	瘡	/kasa/	LH	HH	‘bug’	虫	/muši/	LH	HH
‘river’	川	/kawa ⁺ /	LH	HL	‘to burn’	燃える	/moeru/	LHH	HHH
‘skin’	皮	/kawa ⁺ /	LH	HH	‘to germinate’	萌える	/moeru/	LHH	HHH

Brown (1863) listed all the pairs in Table 4.2 except the first (^{MT}/ha⁺ra/ and ^{MT}/hara⁺/), and he said that in each pair the upper word was accented on the penultimate syllable and the lower word on the final syllable.³¹ Some of the

modern Tōkyō pairs have different pitch patterns even in isolation, some have a short final syllable and a distinction between final accent and no accent that is neutralized in isolation (as noted above), and some are accentually identical. Table 4.2 also includes the traditional mora-by-mora representations of pitch patterns (H=high, L=low, F=falling) for the modern Tōkyō forms and for the modern Kyōto forms. Notice that in some pairs the modern Kyōto forms are homophonous even though the modern Tōkyō forms are not, and vice-versa. If I am correct that Lyman was not aware of the difference between the Tōkyō and Kyōto accent systems, the examples in Table 4.2 make it easy to understand why he was so perplexed by accent.

Incidentally, Hepburn (1872:vi–xxxi) did not say clearly in the front matter of his dictionary that he was describing Tōkyō Japanese, and he noted that the language of Kyōto was “considered the standard” (Hepburn 1872:xiv), but his entries for many verbs list inflectional forms that clearly are not Kyōto forms. For example, he used *kai* as the citation form for the verb meaning ‘to buy’, and he provided the forms *kau* (^{MT}/ka-u/ 買った) and *katta* (^{MT}/kaQ-ta/ 買った). What is relevant here is this last form, since the corresponding Kyōto form is *kōta*, with vowel length instead of the moraic obstruent /Q/. Kyōto speakers today (especially younger speakers) are likely to use both *katta* and *kōta*, but this is just a result of the pressure for “standardization” that presumably had not yet begun to exert its influence when Hepburn was writing. On the other hand, he gave Kyōto forms for other verbs, including *omōta* (cf. ^{MT}/omoQ-ta/ 思った ‘thought’) and *sukūta* (^{MT}/sukuQ-ta/ 救った ‘rescued’). It looks as if eastern and western forms of verbs like these were in competition in Tōkyō in the late 19th century. I suggested above in §4.3 that the prestigious Yamanote varieties of modern Tōkyō Japanese originated as a koiné in upper-class neighborhoods with many residents who were originally from other parts of Japan, and this kind of competition would be unsurprising in such a situation. For verbs with a modern Tōkyō citation form ending in a vowel followed by /u/ (like ^{MT}/ka-u/), the eastern past-tense and gerund forms (that is, the forms with the moraic obstruent) were the eventual winners (as in past-tense ^{MT}/kaQ-ta/ and gerund ^{MT}/kaQ-te/). But the outcome was apparently still in doubt when Hepburn was compiling his dictionary, and Brown (1863:vi) gives only western gerunds for these verbs in the introduction to his textbook, illustrating with /oH-te/, /naroH-te/, /waraH-te/, and /omoH-te/, as opposed to ^{MT}/aQ-te/, ^{MT}/naraQ-te/, ^{MT}/waraQ-te/, and ^{MT}/omoQ-te/ (the gerunds of ^{MT}/a-u/ 会う ‘to meet’, ^{MT}/nara-u/ 習う ‘to learn’, ^{MT}/wara-u/ 笑う ‘to laugh’, and ^{MT}/omo-u/ 思う ‘to think’). In short, the past-tense form *katta* in Hepburn’s entry for the verb meaning ‘to buy’ is only weak evidence that the target language of his dictionary was late 19th-century Tōkyō Japanese. Stronger evidence comes from the fact that Hepburn consistently used the romanizations ⟨se⟩ and ⟨ze⟩ in all

three editions of his dictionary. In the introduction to the second edition (Hepburn 1872:xiii), he claimed that in Kyōto “*se* . . . is pronounced *she*, and *ze* like *je*,” so his choice of ⟨*se*⟩ and ⟨*ze*⟩ corroborates the claim that his target was Tōkyō Japanese.³² In short, it seems reasonable to assume that Hepburn was attempting to describe the Tōkyō accent system.

Hepburn (1872:xv) claimed that “as a general rule, in words of two syllables [the accent] falls on the first; in words of three syllables on the penult; and in words of four syllables on the antepenult.” Hepburn did not provide any evidence for these claims, and surveys of the modern Tōkyō vocabulary suggest that they had little basis in fact, although we have to be careful about interpreting the figures reported for modern Tōkyō, since the categories are defined in terms of the number of moras rather than the number of syllables. Leaving aside the very few modern Tōkyō words that arguably contain extra-long (i.e., three-mora) syllables (Vance 2008:131–132), a two-mora word can be one long syllable (like /o⁺.H/ 王 ‘king’) or two short syllables (like /o⁺ bi/ 帯 ‘sash’), a three-mora word can be two syllables (long-short, like /šo⁺ do.H/ 書道 ‘calligraphy’, or short-long, like /ko⁺.H do/ 光度 ‘brightness’) or three syllables (short-short-short, like /ka⁺ ra⁺ da/ 体 ‘body’), and a four-mora word can be two syllables (long-long, like /ho.H ko.H/ 方向 ‘direction’), three syllables (long-short-short, like /ho.H ko⁺ ku/ 報告 ‘report’, short-long-short, like /hi⁺ ko⁺.H ki/ 飛行機 ‘airplane’, or short-short-long, like /ko⁺ ku do.H/ 国道 ‘national highway’), or four syllables (short-short-short-short, like /ka⁺ ma⁺ bo⁺ ko/ 蒲鉾 ‘fish paste’). Despite this complication, it is possible to get a rough idea of how well the modern Tōkyō vocabulary conforms to Hepburn’s claims about accent location.

The most obvious discrepancy between the modern Tōkyō vocabulary and the tendencies that Hepburn suggested is that a large proportion of the words of interest are unaccented in modern Tōkyō, and the same was almost certainly true in the late 19th century. As noted above, a content word with no accent was something that Hepburn and Lyman did not even consider as a possibility. Tanaka and Kubozono (1999:59) report that in modern Tōkyō about 50% of three-mora nouns and about 70% of four-mora nouns are unaccented. If we restrict our attention to native-Japanese three-mora nouns, more than 70% are unaccented (Kubozono 2006:64). The great majority of these native nouns are three short syllables, like /ka⁺ ra⁺ da/ 体 ‘body’.

Taking verbs and adjectives into consideration does not change the overall picture very much. As noted above, for a verb or adjective form there are usually two possibilities at most, regardless of the number of syllables. The citation form listed in modern dictionaries is the *shūshikei* 終止形 ‘conclusive form’ (i.e., the

plain nonpast affirmative), and this form is accented for some verbs (like /hare⁺ru/ 晴れる ‘to clear up’) and unaccented for others (like /hare–ru/ 腫れる ‘to swell up’). If it is accented, the accent is generally on the next-to-last syllable, no matter how many syllables there are, as in /yo⁺m–u/ 読む ‘to read’ /ta₂no⁺m–u/ 頼む ‘to request’, and /i₁to₂na⁺m–u/ 営む ‘to manage’.³³ If we leave unaccented verbs aside and consider only accented examples, Hepburn’s claims about accent location are correct for citation forms with two syllables (initial) or three syllables (penultimate) but not for longer forms. Of course, to do a thorough assessment we would have to look at all the inflectional forms of verbs and adjectives, not just the citation forms, but doing so would require a long digression, and it would not make Hepburn’s account look any better.³⁴ To give just one illustration, many verbs with an accented, three-syllable citation form have a three-syllable past-tense form that is accented not on the middle syllable but on the initial syllable, as in /ta₂be⁺–ru/ 食べる ‘to eat’ versus /ta⁺be₂–ta/ 食べた ‘ate’. In cases like this, the citation form conforms to Hepburn’s generalization for three-syllable words, but the past-tense form does not. Incidentally, Hepburn and Lyman used the *ren-yōkei* 連用形 ‘adverbial form’ of a verb as its citation form, but this form matches the corresponding modern citation form in terms of accent: it is either unaccented or accented on the next-to-last syllable.³⁵ Adjectives are like verbs in that the citation form is accented for some adjectives (like /a₂cu⁺–i/ 暑い ‘hot’) and unaccented for others (like /a₂cu₂–i/ 厚い ‘thick’), but the great majority of adjectives have an accented citation form in modern Tōkyō (Kindaichi and Akinaga 2014[appendix]:66), and the accent on this form falls on the last syllable, which is always long, as in /su₂ru₂do⁺–i/ 鋭い ‘sharp’ and /a₂ta₂ka⁺–i/ 暖かい ‘warm’. In short, even if we look only at accented verb and adjective forms, Hepburn’s claims about accent location do not hold up very well.

It might be true that most two-syllable words have initial accent, as Hepburn suggested. As mentioned in the paragraph just above, if the citation form of a verb is accented and has two syllables, the accent is on the first syllable. As for nouns, according to Tanaka and Kubozono (1999:58), about 65% of two-mora nouns are initial-accented, and even though many of these consist of a single long syllable (like /o⁺.H/ 王 ‘king’), initial accent is the favored pattern for Sino-Japanese binoms consisting of two short syllables, like /ka⁺ko/ 過去 ‘past’ (Kindaichi and Akinaga 2014[appendix]:18–19).³⁶ Sino-Japanese binoms that are short-long, like /sa⁺ho.H/ 作法 ‘manners’, also tend to have initial accent, but those that are long-short, like /so⁺.Hko/ 倉庫 ‘storehouse’, are as likely to be unaccented as initial-accented, and those that are long-long, like /ho.Hso.H/ 放送 ‘broadcasting’, are mostly unaccented (Kindaichi and Akinaga 2014 [appendix]:19–20). In any case, even if the majority of two-syllable

words really did have initial accent when Hepburn was writing, that majority could not have been overwhelming.

When it comes to words with three syllables, it is not easy to tell how well they conform to Hepburn's suggestion that they typically have medial (i.e., penultimate) accent, since three syllables can involve anywhere from three moras (as in short-short-short /ta_ˆma^ˆ_ˆgo/ 卵 'egg') to six moras (as in long-long-long /ho.H_ˆso^ˆ.H_ˆmo.H/ 放送網 'broadcast network'). The same problem arises in assessing Hepburn's claim that most four-syllable words have antepenultimate accent, since a four syllable word can have anywhere from four moras (as in short-short-short-short /ka_ˆwa_ˆse_ˆmi/ 川蟬 'kingfisher') to eight moras (as in long-long-long-long /ši.N_ˆko.H_ˆšu^ˆ.H_ˆkyo.H/ 新興宗教 'new religion'). The great majority of accented nouns have the default accent location in modern Tōkyō (Kubozono 2006:13–15), that is, accent on the syllable containing the antepenultimate mora (the initial syllable if the word has fewer than three moras; McCawley 1968:133–134). This syllable is often, but by no means always, the penultimate syllable in three-syllable words and the antepenultimate syllable in four-syllable words. For example, three-syllable /a^ˆ_ˆra_ˆši/ 嵐 'storm' and /mu_ˆzo^ˆ.H_ˆsa/ 無造作 'casual' both have default accent, but only in the latter is the accent on the penultimate syllable. Similarly, four-syllable /ka_ˆmi^ˆ_ˆka_ˆze/ 神風 'divine wind' and /ka_ˆki_ˆgo^ˆ.H_ˆri/ 欠き氷 'shaved ice' both have default accent, but the accent falls on the antepenultimate syllable only in the former.

Brown (1863) put three- and four-syllable words in the same category, and since he did not hedge at all, his account is even less accurate than Hepburn's: "The penultimate syllable receives the primary accent in polysyllabic words, unless the penultimate vowel is suppressed, and then the antepenultimate is accented."³⁷ As noted above in connection with Table 4.2, Brown listed several pairs of disyllabic words that he said differed in accent, so by "polysyllabic words" he clearly meant words with three or more syllables. As we will see below in §4.6, Brown described so-called devoiced vowels as "suppressed" and used apostrophes to represent them in his romanization, and it is his remark about the interaction between accent and vowel devoicing that is of particular interest here, since Hepburn and Lyman did not say anything along these lines. Many 20th-century descriptions of the Tōkyō accent system mention a tendency to avoid accent on a syllable with a devoiced vowel (Han 1962:81), and Brown's statement foreshadows much later analyses that propose accent shifts to resolve the conflict (McCawley 1977:266; Haraguchi 1977:40–41).³⁸

Brown (1863) went on to say that "The secondary accent is thrown back two removes from the syllable that receives the primary accent." This sentence makes it clear that he mistakenly saw the Japanese accent system as basically what Hayes

(1995:202–203) calls a right-to-left syllabic trochee stress system, with main stress on the penultimate syllable. Brown cited only three examples: ⟨shirānu⟩ (cf. ^{MT}/širanu/ 知らぬ ‘not know’), ⟨wákarānu⟩ (cf. ^{MT}/wakara⁺nu/ 分からぬ ‘not understand’), and ⟨wakárimásh’ta⟩ (cf. ^{MT}/wakarima⁺šita/ 分かりました ‘understood’). The first of these three examples is unaccented in modern Tōkyō and almost certainly was unaccented in the late 19th century as well, but the syllable that Brown said carried the primary accent does correspond to the modern accented syllable in the other two examples, and the vowel in the penultimate syllable of ^{MT}/wakarima⁺šita/ is typically devoiced.

Brown (1863) also said that the words corresponding to ^{MT}/hašī⁺/ 橋 ‘bridge’ and ^{MT}/ha⁺ši/ 箸 ‘chopsticks’ differed not in accent but in devoicing: ⟨hashi⟩ ‘bridge’ versus ⟨hash’⟩ ‘chopsticks’. Some 20th-century descriptions note a difference in susceptibility to devoicing in examples like these but attribute it to the difference in accentuation. Martin (1952:14) says that a short high vowel immediately preceding a pause is devoiced only if there is a fall in pitch somewhere in the word. For example, when pronounced in isolation, there is an accentual pitch fall in initial-accented /ta⁺nuki/ 狸 ‘raccoon dog’ but not in final-accented /kataki⁺/ 敵 ‘enemy’ or in unaccented /misaki/ 岬 ‘promontory’, and the entries in a well-known dictionary (Hirayama 1960) show the final /i/ devoiced in /ta⁺nuki/ but not in /kataki⁺/ or /misaki/. Kawakami (1977:70–71) says that devoicing in such cases is virtually obligatory when there is an earlier pitch fall but only optional, though still typical, when there is not. In modern Tōkyō, devoicing is much less consistent when a short high vowel is preceded by a voiceless consonant and followed by a pause than when it is surrounded by voiceless consonants (Akamatsu 2000:68; Kindaichi and Akinaga 2014[front matter]:26), but if Martin and Kawakami are correct, /i/ should be more likely to devoice in /ha⁺ši/ than in /hašī⁺/, and the entries in the same dictionary (Hirayama 1960) show devoicing in the former but not in the latter. Given Brown’s faulty understanding of the Tōkyō accent system, it is not surprising that he took devoicing to be the distinctive feature in this pair, and Lyman was probably just following Brown when he wrote, “In regard to [Hepburn’s] other example (*hashi*, a bridge, and *háshi*, chopsticks), the latter word gives simply an illustration of the short and unaccented condition of the *i* and *u*; and the other *hashi* seems clearly to have the two syllables equally accented.” As we saw in §4.2, Lyman said that devoicing was especially likely to affect what he called “short *i* and short *u*.”

Hepburn (1872:xv) also said that “the accent always falls upon the syllable that has a double or prolonged vowel,” and he cited five examples. He did not provide any definitions, but the intended vocabulary items are almost certainly the ones shown in Table 4.3. (Morphological divisions have been omitted from the modern Tōkyō phonemic transcriptions to reduce clutter.)

Table 4.3: Hepburn’s Examples with Long Vowels.

Hepburn 1872	Modern Tōkyō
<i>ikō</i>	/iko ⁺ H/ ‘let’s go’ 行こう
<i>yosasō</i>	/yosaso ⁺ H/ ‘seems good’ 良さそう
<i>ii-kaeru</i>	/iHkae ⁺ ru/~iHka ⁺ eru/ ‘to rephrase’ 言い換える
<i>ii-tsukeru</i>	/iHcuke ⁺ ru/ ‘to order’ 言い付ける
<i>yū-meshi</i>	/yuHmeši/ ‘dinner’ 夕飯

The modern Tōkyō forms of the first two items in Table 4.3 are accented as Hepburn said, on syllable containing the long vowel /oH/. But according to Martin (1975:610–611), until recently the hortative form of an unaccented verb was unaccented, and /ik-u/ 行く ‘to go’ is unaccented, so we have to wonder whether the hortative form *ikō* was really accented for Tōkyō speakers when Hepburn was writing.³⁹ The third and fourth items in Table 4.3 are compound verbs containing two verb elements each (V+V=V compounds), and the first element in both is based on the unaccented verb 言う ‘to say’ (spelled in kana as if it were /i-u/ but normally pronounced /yuH/). It is well known that some compounds of this type were accented on the initial element in the not-too-distant past, but this seems to have been true only when the first element was based on an accented verb (Akinaga 1967:135; Martin 1987:207–210), so Hepburn was probably mistaken about these two items. The earliest dictionary that marks Tōkyō accent (Yamada 1893) does not list *ii-kaeru*, but it lists *ii-tsukeru* just as in Table 4.3, with penultimate accent. The last item in the table, *yū-meshi*, is a compound noun containing two noun elements. It is unaccented in modern Tōkyō and marked as unaccented in by Yamada (1893), so it was almost certainly unaccented in Hepburn’s day as well.⁴⁰ Lyman was probably right when he said that Hepburn’s “ear was deceived in regard to the double vowels,” but as we will see in the next paragraph, Lyman’s own ear does not seem to have been any better.

It is not clear what Hepburn would have said about words containing more than one long vowel, such as *sōdō* (^{MT}/so⁺H·doH/ 騒動 ‘riot’), *chōjō* (^{MT}/čoH·jō⁺H/ 頂上 ‘summit’), and *sōchō* (^{MT}/soH·čoH/ 早朝 ‘early morning’), all of which are listed as headwords in his second edition (Hepburn 1872). Lyman rightly rejected Hepburn’s claim that syllables with long vowels always carry accent, but the reason he gave is not satisfactory. As we saw earlier in §4.2, Lyman did not seem to be aware of the distinction between a long vowel and a sequence of two short vowels, and he described long vowels as “double vowels.” In the “Accent”

section of his article, he said that “double vowels . . . do not appear to become any single vowel, but to be only a succession of equally accented like vowels.” It is not entirely clear what Lyman meant by “equally accented,” but it is hard to imagine that he would not have noticed the different pitch patterns on the long syllables in *sentō* (^{MT}/se⁺N·toH/ 銭湯 ‘public bath’), *kentō* (^{MT}/keN·to⁺H/ 見当 ‘guess’), and *sentō* (^{MT}/seN·toH/ 戦鬪 ‘battle’), all of which were listed by Hepburn (1872) as headwords. Nonetheless, Lyman did not give any indication that he was aware of this contrast.

As mentioned earlier, Lyman disingenuously recommended learning accent distinctions by listening to “somebody of good intelligence and clear articulation who makes no pretence whatever to a literary education.” I want to return briefly to this suggestion because the rationale that Lyman offered for it was actually quite sound. He suspected that orthographic distinctions could induce educated speakers to impose artificial pronunciation distinctions, and this is an important reason for the skepticism in the “Accent” section of his article about accent distinctions in late 19th-century Tōkyō Japanese. The point, of course, is that accent judgments might not be reliable because native speakers actively try to impose a one-to-one correspondence between forms and meanings, even where the language they speak deviates from this ideal. This one-form-one-meaning principle (Hudson 2000:263) is behind what Bolinger (1968:110) calls bifurcation (for which I will use the more explicit term **semantic bifurcation**), that is, the tendency for alternative pronunciations of a word to diverge semantically and develop into separate lexical items (Vance 2002c:370–371; see §7.8.1). The conviction that different words should have different pronunciations is just the other side of the coin, and it may well be that an orthographic distinction between homonyms exacerbates the inclination to imagine or even impose a pronunciation distinction. Literate native speakers of English speakers often believe that homophonous words with different spellings must be pronounced differently, even if they cannot say exactly what the difference is.⁴¹

Hepburn (1872:xv) said, “In words of two and like syllables, the accent varies . . .” He may have meant just that some pairs of segmentally identical two-syllable words differed in accent, but Lyman seems to have interpreted this statement as asserting that there was an accentual distinction in all such pairs. Lyman may have been influenced by Brown (1863), who did not specify the number of syllables and just said that segmentally identical words “are distinguished by difference of accent.”⁴² In fact, of course, perfect homonyms do exist in modern Tōkyō Japanese (e.g., /kawa⁺/ 川 ‘river’ and /kawa⁺/ 皮 ‘skin’ in Table 4.2 above), and the same was surely true in the late 19th century. In any case, no matter how Lyman understood Hepburn’s statement, it was not at all unreasonable to be wary of accent judgments provided by educated native speakers. Lyman’s last remark

about accent distinctions, at the end of his postscript, was that “some at least of the less educated inhabitants of [Tōkyō] seem to be quite unaware of any such difference.” Lyman presumably took this lack of awareness as additional support for his skepticism about accent distinctions, but it is hard to know exactly what “unaware” means here. Assuming the “less educated inhabitants” in question were Tōkyō natives, they certainly internalized some version of the late 19th-century Tōkyō accent system, but conscious awareness of the system is another matter. Less educated speakers may be less able, or perhaps just less inclined, to provide explicit accounts of their own linguistic behavior, but Lyman's main point was that the explicit accounts of more educated speakers might not be accurate.

Lyman mentioned the word *anata* ‘you’ in the “Accent” section of his article and said that it “sometimes sounds to a foreigner as if accented on the penult, sometimes on the antepenult, probably because in reality the syllables are all equally accented.” This remark indicates that Lyman was not prepared to entertain the idea that the accent on a word might be variable, but it is well known that many modern Tōkyō lexical items allow alternative accent locations. To cite just one example, the noun meaning ‘bear’ (typically written 熊) is given in *NHK* and *Meikai* as either final-accented /kuma⁺/ or initial-accented /ku⁺ma/. Vocabulary items like this can vary from person to person or even from occasion to occasion for the same individual, depending at least in some cases on contextual and/or situational factors. The etymological source of *anata* ‘you’ (sometimes written 貴方) is a now obsolete word meaning ‘over there’ (typically written 彼方). Hepburn's 1872 second edition listed only one headword *anata* but gave two definitions separated by a semicolon: ‘that side, there’ and ‘you (respectful)’. For the meaning ‘you’, *NHK* and *Meikai* both give the modern Tōkyō counterpart as medial-accented /ana⁺ta/. For the meaning ‘over there’, *NHK* gives only initial-accented /a⁺nata/, but *Meikai* gives both /a⁺nata/ and /ana⁺ta/.⁴³ We cannot know for sure what the situation was when Lyman was writing, but both pronunciations (/a⁺nata/ and /ana⁺ta/) must have existed, and it is possible that the accent was variable for either meaning. In any case, Lyman's response was to allege misperception. Notice, incidentally, that this example shows the one-form-one-meaning principle in action. For speakers who know the obsolescent word and have the pronunciations given in *NHK*, the split into two lexical items is complete: each accent location corresponds to a different meaning.

4.5 Lyman's Rationale for Romanization

In the second installment of the 1878 article (entitled “Orthography”) Lyman promoted the idea that the traditional Japanese writing system should be abandoned and replaced by a system based on the Roman alphabet.⁴⁴ He offered a concrete proposal and explained its features in considerable detail, but his arguments are riddled with glaring inconsistencies. Part of the problem was that the choice of the Roman alphabet was obviously a foregone conclusion for Lyman, but he was also hampered by an inadequate understanding of how writing represents language, due largely to the fact that the phonemic principle was an idea whose time had not yet come (as noted above in §4.1). Basically, the graphic marks of a writing system correspond to units of (some variety of) a particular language, but Lyman still held the old-fashioned idea that it is possible to devise a universal writing system that could be used for all languages. This is what he was talking about when he referred to an “ideally perfect system of writing, such as may come into general use at some far distant time,” and he claimed to have already invented “such an ideal, rational, universal, alphabet.” As we saw in §4.1, it was not until many years later that Lyman's explanation of this system and his proposal for applying it to English appeared in print (Lyman 1915).

Lyman gave three main reasons for using a version of the Roman alphabet to write Japanese. The first was that the new system would be “more complete phonetically than the Japanese *kana* . . .” The second was that the new, simpler system would be “far more practical in many ways and more easily learned than the Chinese characters.” The third was that the new system would be “a help in the cultivation and more complete development of pure Japanese.” I will consider each of these reasons in turn.

With respect to the systematic representation of speech sounds, Lyman said that “our alphabet is far better suited than the Chinese characters or even the Japanese *kana* to represent the sounds of speech, the prime object after all of every method of writing, whether characters are used for whole words or single syllables or separate sounds.” The last part of this statement sounds like an endorsement of the modern idea that true writing is fundamentally glottographic (DeFrancis 1989:4–5; Trigger 2004:43–45), that is, that the “characters” (graphic marks) for the most part represent linguistic units: words/morphemes, syllables/moras, or phonemes. A written text in a true writing system can be read out loud, that is, converted into utterances in the relevant spoken language. But even though Lyman was willing to recognize logograms and syllabograms as possibilities, he insisted that a “perfect mode of writing must no doubt represent every sound by a separate letter.”

Alphabetic letters and syllabograms are both phonographic, of course, but Lyman was clearly referring to a segment-sized unit when he wrote “sound” here. Of course, without the modern distinction between concrete phonetic segments and abstract phonemes, Lyman did not understand that the same or similar phonetic entities could play very different phonological roles in different languages, and as we saw in §4.3, he was not equipped to deal with cases like affricates, where a sequence of two phonetic segments realizes a single phoneme. Leaving the issue of phonemic analysis aside, Lyman’s absolute certainty about the special status of segment-sized units warrants comment. The fact that most people can learn to use an alphabetic writing system without too much difficulty is often taken as evidence that the segment-sized units represented by alphabetic letters must have some kind of intuitive reality (Saussure 1959:38–39), but this idea has not gone unchallenged (Aronoff 1992; Daniels 1992; Faber 1992; Port 2007). There is no question that linguists’ ideas about language are influenced by literacy (Nooteboom 2007), and it is well known that people who are literate in an alphabetic writing system find analysis into phonemes much more natural than people who are literate in a writing system that represents larger units (Read et al. 1986).

In any case, syllabic/moraic kana are perfectly capable of representing Japanese at the phonemic level just accurately as Roman letters; the difference is just that a single kana letter typically represents a two-phoneme sequence rather than a single phoneme. But Lyman was not able to look at the problem in these terms. He envisioned a single, unified system that could be “adapted without the slightest confusion to all languages” and represent “the myriad variations and gradations of sound that occur in the multitude of languages on the earth.” What he had in mind, clearly, was something like the International Phonetic Alphabet, but in the absence of the phonemic principle, he was laboring under the illusion that devising a writing system for a particular language was just a matter of selecting an appropriate subset of letters. Lyman was well aware that the inventory of letters in the Roman alphabet was not adequate for this task, but he managed to persuade himself that for the time being it was the best available option, since it would “continue to be the one used by the greater part of the more civilised portions of the world.” Present-day readers will be troubled by Lyman’s uncritical acceptance of the world-view reflected in this and many other remarks in his article, but his attitude is hardly surprising, and this is not the place to discuss the matter.

Lyman’s second reason for adopting a Roman-alphabet-based writing system was that it would be easier to learn and use than the system that had developed in Japan. It is beyond dispute, of course, that the Japanese system demands far more time and effort from learners. This difference was even greater in Lyman’s day

than it is today, since the orthographic reforms adopted by the Japanese government after World War II have reduced the burden on learners to some degree.⁴⁵ As Lyman noted, the notorious irregularities of English spelling demonstrate that a Roman-alphabet-based writing system can also cause problems for learners, but it was not hard to avoid such difficulties in designing a system for Japanese.

As for ease of use, Lyman argued that a Roman-alphabet-based system would be more efficient in several respects. Given the level of printing technology at the time, it was obvious that adopting a small inventory of Roman letters would make the process less cumbersome, but inventory size was not really a serious issue until typewriting and mechanized typesetting developed in the late 19th century (Daniels 1996:887–889). Lyman also claimed that Roman letters would make handwriting and reading faster and would reduce the “strain upon the eyes and attention.” It is no doubt true that a Japanese text could be written by hand faster in Roman letters than in full-fledged *kanji-kana-majiribun* 漢字仮名交じり文 ‘kanji-kana mixed writing’ (i.e., the mixture of logographic kanji and kana that characterizes the traditional system), but writing entirely in kana would eliminate the difference.⁴⁶ As far as I know, there is no evidence even today that Japanese orthography demands more effort than a Roman-alphabet orthography from a reader who has already invested the time and effort required to master the relevant system, and preventing eyestrain is just a matter of using appropriately sized typefaces. Despite Lyman’s insistence that he was not motivated by a desire to make reading Japanese “easy for foreigners,” we have to wonder who was actually feeling strained.

Lyman was quite right to point out that the pronunciation of a word was often difficult or impossible to determine from the kanji used to write it, especially in the case of proper names. This problem persists in Japan today, although it is obvious even just from looking at the kanji in Hepburn’s dictionaries that arcane spellings of words other than proper names are less prevalent now than they were in the late 19th-century. A Roman-alphabet-based writing system would certainly eliminate this difficulty, but so would an all-kana system or any other system that enforced a more consistent mapping between writing and pronunciation. Parallel remarks apply to Lyman’s assertion that the “making and using of dictionaries would be immensely facilitated” by a Roman-alphabet system. The headwords in a typical dictionary designed for Japanese users are arranged by kana spelling – a practice that goes back to the 12th-century *Iroha jirui-shō* 『色葉字類抄』 (Mabuchi and Izumo 2007:108). If a reader knows the pronunciation of a word, looking it up by romanization is no easier than looking it up by kana. Of course, the correspondences between kana spelling and Tōkyō pronunciation were much less consistent in Lyman’s day than they are now, since so-called historical kana spelling (*rekishi-teki-kana-zukai* 歴史的仮名遣い)

was still the norm.⁴⁷ Even so, inferring the possible kana spellings of a Japanese word from its pronunciation was no more difficult than what was necessary (and is still necessary today) to use an English dictionary. If a word is written in kanji and the reader does not know the pronunciation, looking it up in a character dictionary is a challenge, but replacing the traditional Japanese writing system with a Roman-alphabet system or an all-kana system would have the same effect. Character dictionaries would not become any easier to use; they would just become irrelevant.

I am not sure why Lyman thought that adopting a Roman-alphabet-based orthography for Japanese would lead to a “great reduction of the bulk of books.” Although the individual graphic marks no doubt have to be somewhat larger in standard Japanese orthography than in a Roman-alphabet orthography to achieve comparable readability, this difference is offset by the fact that logographic kanji and syllabic/moraic kana represent larger linguistic units.

Lyman's argument for the superiority of writing left to right is a little puzzling, since traditional Japanese text consists of vertical (top-to-bottom) lines progressing from right to left across a page. It may well be that the top letter in one line will still be wet by the time the writer finishes that line and returns to the top of the page to begin the next line, and it is also true that the writer's hand is likely to conceal part of what is already written as the process proceeds. Arabic and Hebrew writing, with horizontal right-to-left lines arranged from top to bottom on a page, are even more susceptible to smearing, although less susceptible to concealment. Of course, all of this applies only to right-handed writers. It is probably a safe bet that Lyman was not left-handed. In any case, the “problem” of direction largely disappeared in subsequent years with the widespread adoption of left-to-right lines arranged from top to bottom for many kinds of texts using traditional Japanese orthography, including most handwriting nowadays.⁴⁸ Needless to say, changing the arrangement of a text on a page does not require a wholesale replacement of the graphic marks in a writing system.

Lyman also claimed that a Roman-alphabet writing system for Japanese would represent “the removal of a most serious barrier to bring Japan into closer relationship with our western world and its civilization.” The only reasonable interpretation I can think of for this claim is that such a system would make it easier for foreigners to learn written Japanese well enough to convey information about the “western word and its civilization” to people in Japan. As already noted, Lyman insisted that making Japanese easy for foreigners to read and write was not one of his goals, but I do not see how adopting a Roman-alphabet writing system for Japanese would make it any easier for Japanese speakers to learn about the “western world.” As a comparison, consider a literate English speaker who decides to learn as much as possible about Hungarian culture. Like the

English writing system, the Hungarian system is a variant of the Roman alphabet, but this superficial similarity does virtually nothing for an aspiring Hungarophile. Obviously, the barrier is the Hungarian language, and an English speaker trying to learn Hungarian is not going to get much mileage out of knowing how a variant of the Roman alphabet is used to write English. In the same way, for a Japanese speaker who wants to learn any of the western European languages that Lyman doubtless had in mind when he said “our western world and its civilization,” the Roman alphabet is a trivial part of the task. A Japanese speaker who knows how to read and write Japanese using a Roman-alphabet-based system would have only a negligible head start over a person literate in the traditional system.

As subsequent history has shown, Lyman was thoroughly mistaken to believe that the desire “not to be outstripped by western countries” would lead to the replacement of the traditional system. Cogent arguments can certainly be made that the Japanese system imposes an unreasonably heavy burden on users, although the reforms adopted after World War II have improved the situation to some degree, especially in the match between kana spelling and Tōkyō pronunciation.⁴⁹ But in spite of its undeniable shortcomings, the system has been able to meet the needs of a modern, technologically advanced society. As Smith (1996:214) puts it, “The high degree of literacy of Japan and the high consumption of published materials suggest that the writing system is fully functional.”

Lyman's third reason for adopting a Roman-alphabet-based writing system was that it would be “a help in the cultivation and more complete development of pure Japanese, which is now used mainly by the ignorant only.” He went on to explain that because kanji were used so widely and “read as Chinese,” they had “the effect of grossly barbarizing the language of the educated both in its spoken words and written idiom.” It is not entirely clear what Lyman meant here, but he was probably talking about the high proportion of Sino-Japanese vocabulary items, especially in the written language of the Japanese elite. This situation was due largely to the influence of *kanbun* 漢文, that is, texts written in Chinese or in the Japanese-influenced pseudo-Chinese that had played a central role in academic training in Japan for many centuries (Hannas 1997:35–36). The *kanbun* tradition was beginning to fade when Lyman was in Japan (Habein 1984:97–98), but at the same time, Japanese intellectuals were exploiting Sino-Japanese morphemes extensively to create the new vocabulary items necessitated by the accelerating influx of concepts and material objects from abroad (Seeley 1991:136–138). Of course, we see an analogous situation involving a high proportion of vocabulary items based on Latin and classical Greek in the English of the educated elite. Compare English *bird* and Japanese /tori/ 鳥 ‘bird’ with English *ornithology* (containing Greco-English morphemes meaning

'bird' and 'study') and Japanese /çōH·rui+gaku/ 鳥類学 'ornithology' (containing Sino-Japanese morphemes meaning 'bird', 'type', and 'study').

It is hard to know what effect getting rid of kanji would have had on this penchant for coining Sino-Japanese vocabulary items, but it is safe to say that any new writing system that was fundamentally phonographic would have led to essentially the same result. Either a kana-only system or a Roman-alphabet-based system would presumably have reduced the temptation to coin homophonous Sino-Japanese words that are written with different kanji – a temptation that has left modern Japanese with some troublesome pairs like /ka[↓]·gaku/ 化学 'chemistry' and /ka[↑]·gaku/ 科学 'science', which are identical accentually as well as segmentally. On the other hand, as Unger (1996a) demonstrates, claims about the pervasiveness of such pernicious homonymy are often exaggerated. In the end, all we can do is speculate about how the Sino-Japanese component of the Japanese vocabulary would have developed if the kanji that represent Sino-Japanese morphemes in writing had become unavailable. It seems likely that a smaller fraction of the Japanese vocabulary in everyday use would be Sino-Japanese, but I doubt that the outcome would have been any closer to the "pure Japanese" that Lyman said he wanted to promote. Japanese has seen massive borrowing from languages other than Chinese since Lyman's time, especially since the end of World War II, despite the fact that kanji have remained in use. It could be that this wave of non-Chinese borrowing would have gained momentum even earlier if kanji had been abandoned in the late 19th century. English has been the source language for most of this *gairaigo* 外来語 segment of the vocabulary (see §7.3.1), and some excesses have led to serious communication problems in everyday life for native speakers of Japanese who are not proficient in English (Tanaka and Aizawa 2010). We can only imagine how Lyman would have reacted to this kind of impurity, but he presumably would not have characterized it as "grossly barbarizing" the Japanese language, since he believed that English should become the universal human language (as noted above in §4.1).

4.6 Lyman's Proposal for Romanization

For the five contrastive vowel qualities of Tōkyō Japanese, Lyman adopted the Roman letters (i e a o u). As we have already seen, Lyman was vigorously Anglo-centric, and he tried to model Japanese romanization on English spelling as closely as possible. But even he had to concede that this was not a practical option for the letters representing vowels, since "in English the irregularity in their use is extremely great." It might seem that that Lyman's decision to use

only five letters reflected at least a vague understanding of the principle that writing systems do not normally distinguish allophones of the same phoneme, but as noted more than once already, Lyman did not have the modern concept of phonemes as the phonological units represented by individual letters in alphabetic writing. Lyman clearly believed that an ideal writing system would provide a different letter for every phonetically distinguishable segment, and his 1915 article shows that he steadfastly maintained this belief. Nonetheless, he was willing to allow the same letter to represent different but similar segments as long as this departure from his ideal did not cause any confusion. For example, as we saw above in §4.1, Porter's (1866) vowel classification system provided for four degrees of openness, and Lyman (1915:367) said that (in the variety of English that he was using as the norm) the vowel in *care* was a little less open (degree 2) than the vowel in *cat* (degree 3). Even so, he recommended spelling both these vowels with ⟨æ⟩, since (in modern terms) the vowel in *care* occurred only before /r/, while the vowel in *cat* occurred elsewhere. This is a phonemic spelling in effect, but it was not actually based on the phonemic principle.

The adoption of ⟨i e a o u⟩ for Japanese seems to have been even more of an expedient from Lyman's point of view. In his words, "There is no need whatever of diacritical marks to increase the number of vowel sounds for the cases of short *i* and short *u* and perhaps other short vowels can easily be borne in mind; and even if not so, would lead to no great confusion." As we saw in §4.2, Lyman perceived duration differences between vowels that in a modern analysis would all be treated as phonologically short, but he provided almost no information about environments, presumably because he did not have the concept of conditioned allophonic variation to work with. The remark quoted just above in this paragraph seems to mean that speakers of Japanese simply had to memorize which words contained a slightly longer vowel and which words contained a slightly shorter vowel of the same quality, and this implies a potential for contrast. There was no such potential, of course, but since Lyman thought there was, his decision to use only ⟨i e a o u⟩ for Japanese allowed for the possibility that two words with different pronunciations might be spelled identically. By saying "no great confusion," Lyman just meant that there were not enough actual cases of contrast to cause serious trouble. (In fact, of course, there were none.)

Lyman was also willing to compromise on universality for the sake of simplicity. He noted that the Japanese vowels were not phonetically identical to the Italian and Spanish vowels represented by ⟨i e a o u⟩, but he justified using these letters for Japanese by saying that "they are so nearly similar as to leave no doubt as to the choice of the letter for each sound."

As we saw in §4.2, Lyman called the contrastively long Japanese vowels “double vowels,” and his preference was to romanize them with double letters, as in ⟨koori⟩ for /koHri/ 氷 ‘ice’. He was willing to tolerate a “long mark” (presumably a macron), as in ⟨kōri⟩, or a circumflex, as in ⟨kōri⟩, as options, but he rightly pointed out that these less conspicuous alternatives were likely to be disregarded in reading and omitted in writing. As noted in §4.2, a sequence of two short vowels is phonetically distinct from the corresponding long vowel in modern Tōkyō Japanese, and the same was doubtless true in Lyman’s day. A famous pair of relevant examples is /sa-toH+ya/ 砂糖屋 ‘sugar dealer’ and /sato+oya/ 里親 ‘foster parent’ (Kindaichi 1950). In contrast to the realization of /oH/ as [o:], the syllable boundary between the identical vowels in /oo/ induces vowel rearticulation in careful pronunciation (Martin 1952:13; Vance 1987:14–15). Vowel rearticulation is a brief dip in intensity (Bloch 1950:139; Catford 1977:89) that can be represented by an asterisk in phonetic transcriptions: [sato*oja].

Since two identical short vowels in sequence are almost always on opposite sides of a morphological division in Japanese, the two identical letters representing them were normally separated by a hyphen in Hepburn’s romanizations. For example, Hepburn’s 1872 second edition lists the word corresponding to ^{MT}/mono+oki/ 物置 ‘closet’ as ⟨mono-oki⟩. Of course, in a sequence of two vowels with identical quality, either or both can be long. Hepburn (1872) gives ⟨kō-otsu⟩ for the word corresponding to ^{MT}/koH.ocu/ 甲乙 ‘good and bad’, which has a long vowel before the syllable boundary and a short vowel after it: /ko.H_ō_cu/ [ko:*otsu]. Notice that the hyphen in ⟨kō-otsu⟩ is not really necessary for determining the pronunciation, since the macron indirectly encodes the syllable boundary, but the hyphen is crucial if a long vowel is represented with a double letter: ⟨koo-otsu⟩.

In the “Vowels” section of Lyman’s 1878 article, he described the bound element corresponding to ^{MT}/oH/ 大 ‘large’ as “double o-o,” with a misleading hyphen, but in the “Orthography” section he made it clear that he wanted to use “double oo,” with no hyphen. In the few Japanese examples with long vowels that he cited in 1878, he actually used a macron, although in one case he gave two alternatives: ⟨iwoo⟩ or ⟨iwō⟩ (cf. ^{MT}/ioH/ 硫黄 ‘sulfur’). In his 1894 article on rendaku, however, he followed the double-letter convention scrupulously, as in ⟨ishidooro⟩ (cf. ^{MT}/iši+doH.roH/ 石灯笼 ‘stone lantern’). On the other hand, the brief phonetic description he provided in 1894 is baffling. He said that ⟨oo⟩ was used “to represent two successive, yet not audibly separated, long o’s, as each would commonly be called, much like oo in *oolite*, *oolitic*, *oological*, *zoological*, *zoophyte*” (Lyman 1894:162). By “long o” here, Lyman presumably meant the English phoneme that educated English speakers traditionally call “long o,” i.e., /o/.

This phoneme is realized as [ou] in the modern American variety that dictionaries typically treat as standard, and it was probably realized as something very similar in Lyman's native dialect, as we saw in §4.2. Given the way Japanese long vowels are pronounced, it seems as if “two successive, yet not audibly separated, long o's” must have meant something like [o:u], but this interpretation makes the five words that Lyman listed look like terrible examples. To illustrate with the most familiar of the five, in the dictionary variety of modern American English, *zoological* has two quite different vowel qualities in its first two syllables (using a caret to mark the syllable boundary): /zo_ə/ (see, e.g., the entries in Barnhart 1947 and Morris 1969). Needless to say, /o_ə/, realized as [ou_ə], is a far cry from the [o:] that realizes the modern Tokyo long vowel /oH/. It could be that Lyman's pronunciation of *zoological* was very different, but it is unlikely, since the pronunciation of this word appears to have been essentially the same in the variety of American English that Webster (1828) presented in his famous dictionary.⁵⁰ None of the Japanese examples that Lyman cited in 1878 or in 1894 contained a sequence of two vowels with identical quality, but it is probably safe to assume that he would have dealt with such examples by using a hyphen in the same way as Hepburn.

As we saw above in §4.2, Lyman was aware of so-called vowel devoicing in late 19th-century Tōkyō Japanese. He described the affected segments as “whispered vowels,” and he noted that /i/ and /u/ were particularly susceptible. Brown (1863) described the vowels in question as undergoing a “suppression to whisper,” and Hepburn (1872:xiv) described them as “feebly sounded.”⁵¹ Brown (1863) used an apostrophe in place of ⟨i⟩ or ⟨u⟩ for vowels that were typically devoiced, and Hepburn followed the same practice, although much less consistently, in the 1867 first edition of his dictionary. For example, both Brown and Hepburn had ⟨h'to⟩ and for the word corresponding to ^{MT}/hito/ 人 ‘person’. Hepburn (1872:v) changed his mind in his second edition: “all words which before were written elliptically have been written in full; as *h'to*, *f'tatsu* . . . are now written *hito*, *futatsu* . . . always in accordance with Japanese *kana*.”⁵² In contrast to Brown and Hepburn, Lyman apparently was never tempted to describe devoiced vowels as deleted.

For representing consonants, Lyman resorted to digraphs in many cases, even though he said that “an ideally perfect alphabet and mode of writing must no doubt represent every sound by a separate letter and only one sound by each letter.” The obvious alternative to digraphs was to expand the inventory of Roman letters by adding diacritics, but Lyman rejected this idea out of hand: “it is preposterous to suppose that such an alphabet, peppered with dots and bristling with accents, can ever be suited to practical use for a whole people.” Despite this unequivocal denunciation, Lyman was willing to make an exception for languages like Chinese and allow diacritics to represent tones. More surprisingly, even

though he reiterated his distaste for diacritics in his later article on English writing reform (Lyman 1915:360), the system he recommended involves several devices that most people would categorize as diacritics. For example, to represent vowel rounding he proposed using “a small upright stroke (an abbreviated *l* [for *labial*] . . .) just to the right of the letter” (Lyman 1915:365). Accordingly, he proposed ⟨*u*̣) for the vowel in *foot*, and he suggested using ⟨*u*̣) “provisionally” until new typefaces became available.⁵³ For consonants ordinarily spelled with a digraph ending in ⟨*h*⟩, he proposed converting the ⟨*h*⟩ into “a subscript small appendage somewhat similar to the old device of the French cedilla” (Lyman 1915:361). The result was something like ⟨*ç*⟩ for English /č/, with ⟨*c*_h⟩ as the provisional substitute. Apparently, Lyman's distaste for diacritics was quite selective.

Several of Lyman's consonant representations are so unproblematic that they do not require any discussion here. In terms of the phonemic analysis of modern Tōkyō Japanese that I use throughout this book, these straightforward cases are ⟨*p*⟩ for /p/, ⟨*b*⟩ for /b/, ⟨*k*⟩ for /k/, ⟨*m*⟩ for /m/, ⟨*r*⟩ for /r/, ⟨*y*⟩ for /y/, and ⟨*w*⟩ for /w/. It is interesting that Lyman felt the need to defend his choice of ⟨*y*⟩ rather than ⟨*j*⟩, using it as an opportunity to express his unabashed Anglo-centrism: “As regards *y* and *j* it can hardly be disputed that in Japanese they should have the same value as in English, the prevailing language as to numbers (that uses the Roman alphabet) in the western world, and especially so in the East, and apparently likely to become more and more so everywhere (as it fortunately deserves to for its grammatical simplicity and its excellent adaptation to the needs of both talking and writing).” There is no clear indication in Lyman's 1915 article that he knew about the transcription system adopted in 1888 by the International Phonetic Association, but we can be sure that he would have disapproved of the decision to use [j] for a palatal semivowel.

Lyman used ⟨*s*⟩ for /s/ and ⟨*sh*⟩ for /š/. His justification for representing a single sound with the digraph ⟨*sh*⟩ was that “the English usage must . . . prevail,” although he was willing to entertain the notion of using ⟨*ʃ*⟩ instead. He was aware of the potential ambiguity of digraphs in English spelling (e.g., ⟨*sh*⟩ representing /sh/ in *dishearten*), but he correctly pointed out that this problem would not arise in romanized Japanese, since (in modern terms) Japanese /sh/ was (and still is) phonotactically inadmissible. I mentioned in §4.3 that there is no contrast between [çi] and [si] in modern Tōkyō Japanese, and there was no such contrast in late 19th-century Tōkyō either. Lyman used ⟨*shi*⟩ for the sequence in question, and as noted in §4.3, the prototypical pronunciation was presumably [çi], as it is for ^{MT}/ši/.

Lyman used ⟨*t*⟩ for /t/, ⟨*ts*⟩ for /c/, and ⟨*ch*⟩ for /č/, but as we saw in §4.3, he was confident that the [tç] realizing /č/ was a single sound and just as confident that the [ts] realizing /c/ was two sounds. In other words, ⟨*ch*⟩ was a digraph for

Lyman, but ⟨ts⟩ was just ⟨t⟩ followed by ⟨s⟩. His justification for ⟨ch⟩ was the same as for ⟨sh⟩ (“the English usage must . . . prevail”), but he mentioned the possibility of using just ⟨c⟩, since this letter was “otherwise useless.”

In what sounds almost like a modern description of conditioned allophonic variation, Lyman said that “the habits of [Japanese speakers] organs of speech absolutely require them to convert *t* before *i* into *ch* and before *u* into *ts*, and an *s* before *i* into *sh*,” but as I have already noted repeatedly, Lyman was not thinking in terms of phonemic analysis. He described a “mode of transliterating written Japanese into Roman letters . . . already most in favour among the Japanese themselves” in which ⟨si⟩ represented /ši/, ⟨ti⟩ represented /či/, and ⟨tu⟩ represented /cu/. He acknowledged that ⟨si⟩, ⟨ti⟩, and ⟨tu⟩ would be unambiguous, but in these instances he was not willing to compromise on his principle that phonetically different sounds should be spelled differently.

The transliteration method mentioned just above appears to have been a forerunner of Japan-style romanization (*Nihon-shiki rōmaji-tsuzuri* 日本式ローマ字綴り), which was proposed a few years later.⁵⁴ The challenge for a system that uses ⟨si⟩ for /ši/ and ⟨ti⟩ for /či/ is the fact that both [ç] and [s] and both [tç] and [t] and occur before vowels other than /i/. The solution in the Japan-style system was to use ⟨sya syo syu⟩ for /ša šo šu/ and ⟨tya tyo tyu⟩ for /ča čo ču/. In modern kana spelling these sequences are represented with two letters each, namely, a full-size ⟨し⟩ (*shi*) or ⟨ち⟩ (*chi*) followed by a reduced-size ⟨ゃ⟩ (*ya*), ⟨よ⟩ (*yo*), or ⟨ゆ⟩ (*yu*): ⟨しゃ しよ しゆ⟩ (*shi_{ya} shi_{yo} shi_{yu}*) for /ša šo šu/ and ⟨ちゃ ちよ ちゆ⟩ (*chi_{ya} chi_{yo} chi_{yu}*) for /ča čo ču/. In the late 19th century, a full-size second letter was still the norm, which made the spellings ambiguous: ⟨しよ⟩ (*shi yo*) for /šo/ or /šiyō/, ⟨ちゆ⟩ (*chi yu*) for /ču/ or /čiyu/, and so on. It is clear that the transliteration method Lyman knew about was not exactly the same as Japan-style romanization, since he said that it represented /š/ with ⟨si⟩ (not ⟨sy⟩) and /č/ with ⟨ti⟩ (not ⟨ty⟩) before vowels other than /i/, “analogously to the *kana* writing.” The examples that he cited later in his article have ⟨siya⟩ for /ša/, ⟨tiyu⟩ for /ču/, etc., so to be precise, this transliteration method represented /š/ as ⟨siy⟩ and /č/ as ⟨tiy⟩ before vowels other than /i/.⁵⁵ In any case, Lyman, like Hepburn, used ⟨sha sho shu⟩ and ⟨cha cho chu⟩ for the sequences corresponding to ^{MT}/ša šo šu/ [çɑ ço çu] and ^{MT}/ča čo ču/ [tçɑ tço tçu].

In connection with ⟨ch⟩ for /č/, Lyman suggests in a brief aside in his 1878 article that it would be convenient to use “a reversed *j* for *ch*, just like the reversal of *s* and *z* for a similar difference of sound.” In a surprising departure from his blatant Anglo-centrism, he blames “our obstinate occidental conservatism” for obstructing this replacement of a digraph with a single letter. Of course, the adoption of this new letter would be a significant departure from what users of

the Roman alphabet are used to, and Lyman had already argued that such additions were not “practically feasible.”

Lyman adopted ⟨d⟩ for /d/ and ⟨j⟩ for /j/. He did not say anything explicit about /d/, but in the syllable charts he provided to show how his Roman-alphabet-based writing system represented the syllables in the traditional “fifty-sound” display of kana letters (*gojūon-zu* 五十音図), he had “*da, ji, dzu, de, do,*” implying that /d/ occurred only before /a/, /e/, or /o/ and not before /i/ or /u/. In modern Tōkyō Japanese, the sequence /di/ is well established, although only in recent loanwords like /disuku/ ディスク ‘disk’, and /du/ is still marginal (Vance 2008:87–88, 228). Lyman’s chart had “*ja, ji, ju, (je), jo,*” and he noted explicitly that the combination /je/ did not occur. Like /di/, the sequence /je/ is firmly entrenched in recent loanwords in modern Tōkyō, as in /jeQto/ ジェット ‘jet’ (Vance 2008:228).

Lyman also said that “*zha, zhi, zhu, zhe, zho*” did not occur in Tōkyō Japanese, having explained earlier that the digraph ⟨zh⟩ represented the postalveolar fricative [ʒ] that realizes French /ʒ/. As mentioned in §4.3, ^{MT}/j/ is usually realized as alveopalatal [dʒ] in careful pronunciation, but [ʒ] is a possible realization when a speaker is being less careful (Bloch 1950:133; Kawakami 1977:54). In fact, Maekawa (2010:364–365) reports that a majority of the tokens of ^{MT}/j/ in a large corpus were realized as just a fricative. But as we saw in §1.1, there is no contrast between [ʒ] and [dʒ] in modern Tōkyō, even though there are two ways to spell each of the sequences /ji ja jō ju/ in kana: ⟨じ じゃ じょ じゅ⟩ (using the letter for /ši/ plus the *dakuten* voicing diacritic) and ⟨ぢ ぢゃ ぢょ ぢゅ⟩ (using the letter for /či/ plus *dakuten*). Because of the 1946 kana spelling reform, the spellings in the second set are now used only in very limited circumstances – mostly when /j/ is the *rendaku* partner of /č/. When Lyman was writing, the spellings with ⟨じ⟩ and ⟨ぢ⟩ reflected an earlier contrast between a fricative and an affricate that had been lost in a merger, but since he did not notice any fricative realizations of Tōkyō /j/, he used ⟨j⟩ consistently. As a result, his spelling was phonemic in this case.

As mentioned above in §4.3, Lyman rendered /z/ as ⟨dz⟩ before /u/ but as ⟨z⟩ before any other vowel. As we saw in §1.1, there is no contrast between [z] and [dz] in modern Tōkyō; both are allophones of the same phoneme, although there are two ways to spell the sequence /zu/ in kana: ⟨ず⟩ (the letter for /su/ plus *dakuten*) and ⟨づ⟩ (the letter for /cu/ plus *dakuten*). The 1946 kana spelling reform restricted the ⟨づ⟩ spelling mostly to cases where /z/ is the *rendaku* partner of /c/, but when Lyman was writing, the distinction between ⟨ず⟩ and ⟨づ⟩ reflected an earlier contrast between [z] and [dz] that had been lost in a merger. Lyman said that there was no such pronunciation distinction in Tōkyō (or in Kyōto) and that claims to the contrary “would appear to be an illustration of the desire already mentioned to find a difference in pronunciation where one

exists in writing” (see §4.4). At the same time, he allowed that “in some provinces or individuals there may be such a distinction,” and we know now that there were (and still are) such dialects.⁵⁶ A phonemic orthography would have required the same graphic mark for the consonant in all the 19th-century sequences corresponding to ^{MT}/ze za zo zu/, but of course Lyman was not following the phonemic principle.

Lyman's choice of ⟨dz⟩ in ⟨dzu⟩ but ⟨z⟩ in ⟨ze za zo⟩ indicates that he believed the prototypical realization of /z/ was [dz] before /u/ and [z] before /a e o/. Hepburn used ⟨ze za zo dzu⟩ in the 1872 second edition of his dictionary but replaced ⟨dzu⟩ with ⟨zu⟩ in the 1886 third edition, explaining (Hepburn 1886:xiii) that this change, along with a few others, brought his romanization into conformity with the system adopted by the Rōmaji-kai 羅馬字会, which was founded in 1885.⁵⁷ It is hard to tell, however, what Hepburn actually thought about the pronunciation of the syllable corresponding to ^{MT}/zu/, since he noted in the preface to his third edition (Hepburn 1886:iii) that these romanization changes were “somewhat against his own judgment.” He listed ⟨z⟩ as one of the letters that “do not differ from their common English sounds” (Hepburn 1886:xi), but this list is simply repeated from the preface to the second edition (Hepburn 1872:xiii), even though he used ⟨dzu⟩ in 1872 but ⟨zu⟩ in 1886. Lyman, on the other hand, continued to use ⟨dzu⟩ in his 1894 *rendaku* article. Some impressionistic accounts of modern Tōkyō Japanese (Kawakami 1977: 52–53; Vance 2008:85; Toki 2010:25–26) have claimed that /z/ is typically realized as [dz] word-initially or immediately following /N/ or /Q/ and as [z] elsewhere (i.e., intervocally within a word). But Arisaka (1940:57–58) says that [dz] always occurs in careful pronunciation, and the results of a recent study of the tokens of /z/ in a large corpus (Maekawa 2010) suggest that [dz] is probably the modern Tōkyō target in all environments, although [z] realizations are frequent. This same study provides no support for the idea that [dz] is more likely before /u/ than before other vowels (Maekawa 2010:364).

Lyman adopted ⟨h⟩ for all the consonants corresponding ^{MT}/h/ and ^{MT}/f/, giving “*ha, hi, hu, he, ho*” as one of the lines in the syllable charts near the end of his 1878 article. We saw in §4.2 that Lyman offered a very modern-sounding phonetic description of [h] as “a whispered vowel,” with a wide range of qualities depending on its environment. Nonetheless, he was content to represent all these phonetically different sounds in Japanese with ⟨h⟩, “as in all western languages where it is pronounced at all.” As we saw in §4.3, Lyman insisted that the consonants in the syllables corresponding to ^{MT}/hi/ and ^{MT}/fu/ were not realized as [ç] and [ϕ], and I suggested that his phonetic descriptions in these cases were distorted by his embryonic phonemic intuition.

As noted in §4.3, most modern Tōkyō speakers do not have syllable-initial velar nasals, and the appropriate phonemic analysis for speakers who do have

them is problematic. The basic pattern for such speakers is that [g] occurs word-initially and [ŋ] occurs word-medially, but there are many exceptions in the word-medial environment and a few exceptions in the word-initial environment (Vance 2008:214–222; Uwano 2010). As mentioned briefly in §4.3, velars are conspicuously fronted to [kʲ gʲ ŋʲ] immediately preceding /i/ or /y/, but we can ignore this minor complication here. When a velar nasal does not appear, it is common for a velar fricative ([ɣ]~[ɣʲ]) or velar approximant to appear instead of a stop word-medially and even word-initially when the word is not utterance-initial (Kawakami 1977:37; Vance 2008:76–77; Sano 2011). We can ignore this complication too, and use [g] to mean [g]~[gʲ]~[ɣ]~[ɣʲ] and [ŋ] to mean [ŋ]~[ŋʲ], since our interest here is just whether or not a nasal appears. For a speaker who has [ŋ], the question is whether an example like [toŋe] for *toge* 刺 ‘thorn’ should be analyzed as /toŋe/, treating [ŋ] as an allophone of the same phoneme as [g], or as /toŋe/, treating [ŋ] as the realization of a phoneme separate from /g/.

Lyman adopted ⟨g⟩ for all syllable-initial voiced velars and described [ŋ] as “only a provincial variation,” but it is hard to know what to make of this characterization. Syllable-initial [ŋ] is typical of many dialects spoken near Tōkyō even today (Hirayama 1998:171), and it is usually thought to be a traditional Tōkyō feature that has gradually been losing out to [g] for many years (Kindaichi 1942; Hirayama 1998:128; Hibiya 1999:106–112; Ōhashi 2007). Brown (1863) took word-medial [ŋ] as the norm, romanizing it consistently as ⟨ng⟩, and Hepburn (1872:xv) included [ŋ] on his list of Tōkyō pronunciation characteristics: “The hard g sound is softened into *ng*.”⁵⁸ Modern pronunciation dictionaries (*NHK*; *Meikai*), which typically favor conservative variants, still specify [ŋ] in the relevant entries. It could be that Lyman’s circle of acquaintances was the source of his notion that [ŋ] was a provincialism. As we saw in §4.3, Lyman claimed that Tōkyō natives did not have the merger of /hi/ and /ši/, even though Hepburn (1872:xv) noted this merger as a characteristic of Tōkyō pronunciation. I suggested that many of the native Japanese speakers that Lyman interacted with were from other parts of the country and that Yamanote Japanese originated as a koiné with input from many such speakers. If so, it is easy to understand how word-medial [g] could have gained an initial foothold in Yamanote Japanese, and it is quite reasonable to suppose that it was already in the “population” of existing variants when the shift from [ŋ] to [g] seems to have accelerated dramatically, beginning with Yamanote speakers born in the 1920s (Kindaichi 1942; Ōhashi 2007).⁵⁹ In short, one way of interpreting Lyman’s assertion that Tōkyō speakers had [g] is to see it as very early evidence for the existence of this variant.

Lyman was willing to consider representing [ŋ] as ⟨ng⟩ in writing varieties of Japanese that had this pronunciation, but he said that “in the provinces where [the velar nasal is] used [it] replaces the *g* with great uniformity, except

in easily remembered cases.” This statement amounts to a claim that the occurrence of [ŋ] was essentially predictable in these dialects, and Lyman used this predictability to justify writing both [ŋ] and [g] as ⟨g⟩. Since he was not thinking in phonemic terms, whether or not the distributions of [ŋ] and [g] were really entirely predictable was beside the point. As we have already seen, Lyman's orthographic ideal was to provide a different letter for each phonetically different sound, but he was willing to tolerate expedient deviations from this principle. In any case, the question of using ⟨ng⟩ in addition to ⟨g⟩ did not even arise in the variety without [ŋ] that he took as his norm.

Lyman used ⟨n⟩ for /n/.^{MT}/n/ has a conspicuously alveopalatal allophone [ɲ] immediately preceding /i/ or /y/ (Akamatsu 1997:121–124), and the same was probably true in the late 19th century, but Lyman did not comment on anything like this. This allophone is not especially salient to an English speaker, and Lyman presumably did not even notice it. As we saw in §4.2, Lyman interpreted Japanese word-final V/N/ sequences as just nasalized vowels. In regard to writing, he said, “There seems to be no serious objection to the indication of the nasal vowels by the added letter *n*, as already customary in French, the chief western language where such sounds occur.” Using ⟨n⟩ to represent both a syllable-initial consonant and vowel nasalization is an obvious violation of the orthographic principles that Lyman advocated, but it does not seem to have bothered him. In fact, he extolled this use of syllable-final ⟨n⟩ as “causing no troublesome confusion whatever.” It apparently did not occur to him that a spelling like ⟨shini⟩ was ambiguous, since ⟨n⟩ could be at the end of the first syllable or at the beginning of the second. The 1872 second edition of Hepburn's dictionary lists both *shini* (corresponding to ^{MT}/šin-i/ 死に ‘dying’) and *shin-i* (corresponding to ^{MT}/šin·i/ 瞋恚 ‘wrath’) as headwords, and the hyphen at the morphological division in the latter serves to distinguish the two. As noted in the Preface, the modified Hepburn romanization used in this book requires an apostrophe following an ⟨n⟩ that represents /N/ when ⟨n⟩ alone could be mistaken for a representation of /n/: ⟨shini⟩ for /šin-i/ versus ⟨shin'i⟩ for /šin·i/.

Hepburn's (1872:xiii) phonetic description of word-final nasals was quite different from Lyman's: “The final *n*, when at the end of a word, has always the sound of *ng*.” To be precise, the relevant environment was probably utterance-final (i.e., pre-pausal) rather than word-final, since ^{MT}/N/ assimilates to a following consonant even across a word boundary, provided that no pause intervenes. To give just one example, /N/ is realized as [n:] before [t] in [gokēn:tateta] for /go·keN tate-ta/ 五軒建てた ‘built five buildings’. But when the first word is pronounced in isolation, /N/ is utterance-final, and as noted above in §4.2, it is often realized as a uvular: [gokēN:] for /go·keN/ 五軒 ‘five buildings’. The auditory and articulatory difference between uvular [N] and velar [ŋ] is small, and assuming the

phonetic facts were essentially the same in late 19th-century Tōkyō Japanese, Hepburn's description of the sound in question as a less exotic velar is unsurprising. In fact, it is not uncommon to see [ŋ] rather than [N] in later accounts by Japanese phoneticians (e.g., Sakuma 1929:164). Despite Lyman's radically different understanding of what word-final ⟨n⟩ represented, the writing system he proposed is superficially identical to Hepburn's romanization in this use of ⟨n⟩. For example, both systems represented the word corresponding to ^{MT}/moN/ 門 'gate' as ⟨mon⟩.

Hepburn (1872:xiii) said that "final *n*" (by which he clearly meant syllable-final /N/) "in the body of a word, when followed by a syllable beginning with *b*, *m*, or *p*, . . . is pronounced like *m*, as . . . *shin-pai* = *shimpai*" (cf. ^{MT}/šiN·pai/ [çim:pai] 心配 'worry'), and he romanized it consistently with ⟨m⟩ in all three editions of his dictionary. As noted in §4.2 above, Lyman insisted firmly that the segment corresponding to ^{MT}/N/ immediately preceding a bilabial closure had to be written with ⟨m⟩, and this assertion makes it clear that he saw these instances of /N/ as consonants, just as Hepburn did.

Hepburn (1872:xiii) disposed of all other realizations of /N/ by saying, "Before the other consonants it has the sound of *n*; as, *an-nai*, *ban-dai*, *hanjō*." Assuming that /N/ had essentially the same range of allophones as it does in modern Tōkyō Japanese, this description is exceedingly imprecise. In the first two examples that Hepburn cited, it is safe to assume that /N/ was realized as [n:], since the immediately following phoneme involved an alveolar closure (cf. ^{MT}/aN·nai/ [ãn::ai] 案内 'information' and ^{MT}/baN·dai/ [bãn:ðai] 番代 'taking turns on duty'). But in the third example, /N/ presumably assimilated to the following alveoplalatal (cf. ^{MT}/haN·joH/ [hãŋ:dzo:] 繁盛 'prosperity'). We can also assume that /N/ assimilated to other following consonants involving an oral closure, such as the velar in the word corresponding to ^{MT}/hoN·ke/ [hõŋ:ke] 本家 'principal family'. It is no surprise that Hepburn did not say anything about these non-alveolar realizations. He may not even have noticed them, but whether he did or not, representing them with ⟨n⟩ was the only practical option for meeting the needs of most users of his dictionary. An English speaker will automatically produce a nasal with the correct or nearly correct place of articulation in response to the ⟨n⟩ in representations like ⟨bandai⟩, ⟨hanjō⟩, and ⟨honke⟩. Lyman, on the other hand, should have had something to say about these non-alveolar realizations of /N/, given his professed commitment to the principle of representing every phonetically different segment with a different letter. We saw above that he advocated ⟨ng⟩ for syllable-initial [ŋ], and in his later article on writing reform (Lyman 1915:366) he provided a chart that includes a separate letter for the nasal spelled ⟨ñ⟩ in Spanish writing and ⟨nh⟩ in Portuguese writing, which is realized as palatal [ɲ]. The expectation is that he would have recommended ⟨hongke⟩ and (perhaps) ⟨hanhjoo⟩ for the words

corresponding to ^{MT}/hoN.ke/ [hõŋ:ke] and ^{MT}/haN.ʃoH/ [hãŋ:dzo:], but he was silent on this matter, and we have to wonder whether he even noticed that the nasals in these words were not alveolar.

As noted in §4.2, /N/ is realized without an oral closure when the immediately following segment does not have an oral closure, and I adopted the broad transcription [ũ:] for this range of allophones (see Vance 2008:97–99 for details). In his remarks on pronunciation, Hepburn (1872:xiii) did not even mention the possibility of a vowel immediately following /N/ within a word, and as we have already seen, he often used a hyphen at the morphological division in romanizing head-words like *zen-aku* (cf. ^{MT}/zeN.aku/ 善悪 ‘good and evil’). As for /N/ immediately followed by a semivowel or a fricative, Hepburn’s (1872:xiii) statement about ⟨n⟩ before consonants other than ⟨p b m⟩ implies it was realized as an alveolar, since semivowels and fricatives are consonants. But if late 19th-century Tōkyō Japanese was like its modern descendant, examples like *hen-sai* (cf. ^{MT}/heN.sai/ [hẽũ:sai] 返済 ‘repayment’) and *dan-wa* (cf. ^{MT}/daN.wa/ [dãũ:ɰa] 談話 ‘conversation’) had [ũ:]. I suggested in §4.2 that Lyman may have seen the ⟨n⟩ in examples like these as representing vowel nasalization rather than a consonant, but there is no way to know for sure, since he did not say anything explicit about such cases.

Late 19th-century Tōkyō Japanese clearly had phonetically very long consonants contrasting with short consonants, just like its modern descendant. A common analysis of these so-called geminate consonants in modern Tōkyō Japanese is to treat them as sequences of a moraic consonant followed by an ordinary syllable-initial consonant. When the syllable-initial consonant is a nasal, the moraic consonant is /N/, as we saw just above in the case of ^{MT}/aN.nai/ [ãn::oi] 案内 ‘information’, with phonetic [n:] analyzed phonemically as /Nn/. When the syllable-initial consonant is an obstruent, the moraic consonant is the moraic obstruent rather than the moraic nasal, and the most popular phonemic transcription for the moraic obstruent is /Q/ (Vance 2008:105–108). For example, in ^{MT}/iQ.šo/ [iç::o] 一緒 ‘together’, phonetic [ç:] is analyzed phonemically as /Qš/.⁶⁰

Lyman regarded all such phonetically long consonants as “the doubling of the sound,” and he said that “the two halves of a double consonant are but the two halves of a single one emphasized and sometimes slightly separated.” I have no idea what he meant by “slightly separated.” In modern Tōkyō Japanese, there is no interruption in the phonetic realizations of /N/C and /Q/C sequences in any kind of normal pronunciation, fast or slow, casual or careful.⁶¹ In any case, he recommended using double letters to represent all long consonants. Just like Hepburn, Lyman adopted ⟨mm⟩ for /Nm/ (realized as [m::]) and ⟨nn⟩ for /Nn/ (realized as [n::] or [ɲ::]), as in ⟨semmon⟩ (cf. ^{MT}/seN.moN/ [sẽm::õn:] 専門 ‘specialty’), ⟨onna⟩ (cf. ^{MT}/oNna/ [õn::a] 女 ‘woman’), and ⟨konnichi⟩ (cf. ^{MT}/koN.niçi/ [kõŋ::itçi] 今日 ‘today’).

As for realizations of /Q/, Lyman listed ⟨p t ch s sh k⟩ as the consonants that could be doubled. Loanwords containing /Q/ immediately followed by a voiced obstruent, such as ^{MT}/uQdo/ ウッド ‘wood (golf club)’, had not yet appeared in the vocabulary.⁶² Since Lyman interpreted /c/ (realized as [ts]) as a sequence of two consonants, as we saw in §4.3, he presumably would have used ⟨mitsuu⟩ for ^{MT}/miQ-cuH/ [mit::su:] 密通 ‘adultery’ (cf. the headword ⟨mitsū⟩ in Hepburn 1872). In contrast, ⟨ch⟩ and ⟨sh⟩ were digraphs in Lyman’s system, and as he noted, “Strict analogy requires even that the *ch* and *sh* should in such a case be written double.” This policy would require ⟨keshshin⟩ for ^{MT}/keQ-šiN/ [kec::ĩn:] 決心 ‘resolve’ and ⟨ichchi⟩ for ^{MT}/iQ-či/ [ic::ci] 一致 ‘agreement’ (cf. the headwords ⟨keshshin⟩ and ⟨it-chi⟩ in Hepburn 1872). Needless to say, Lyman could not have imagined an analysis that treats such wide ranges of phonetic segments as realizations of a single (psychological) sound, namely, the phoneme /Q/ in the analysis adopted for this book. He would have had the same problem with the allophones of what this analysis treats as the phoneme /N/.

Lyman’s remark about “the clumsy Japanese modes of indicating the doubling of the sound of consonants” requires some clarification. Modern kana spelling represents /Q/ consistently with a reduced-size version of the letter that otherwise spells /cu/. For example, full-size ⟨つ⟩ appears in the kana spelling ⟨いつか⟩ (*i tsu ka*) of ^{MT}/icu+ka/ 五日 ‘five days’, while reduced-size ⟨つ⟩ appears in the kana spelling ⟨いっか⟩ (*i_{tsu} ka*) of ^{MT}/iQ-ka/ 一荷 ‘one load’. Before the 1946 reform, most instances of /Q/ were spelled with the same full-size letter as /cu/, so the katakana spellings given in Hepburn 1872 for the two words just mentioned were identical: ⟨イツカ⟩ (*i tsu ka*) for both.

In a few cases, the pre-1946 kana spelling of /Q/ was ⟨く⟩ (*ku*) or ⟨き⟩ (*ki*), as in ⟨がくかう⟩ (*ga ku ka u*) corresponding to ^{MT}/gaQ-koH/ 学校 ⟨がっこう⟩ (*ga_{tsu} ko u*) ‘school’ and ⟨せきかう⟩ (*se ki ka u*) corresponding to ^{MT}/seQ-koH/ 石膏 ⟨せっこう⟩ (*se_{tsu} ko u*) ‘gypsum’. These two examples are both listed as headwords in Hepburn 1872 (romanized ⟨gakkō⟩ and ⟨sekkō⟩), with pre-reform katakana spellings provided. Both words are Sino-Japanese binoms, and many Sino-Japanese morphemes have one allomorph ending in /ku/ or /ki/ and another allomorph ending in /Q/, which appears in a binom when the second morph begins with /k/: /gaku/~gaQ/ 学 ‘learning’, /seki/~seQ/ 石 ‘stone’.⁶³ The upshot is that the pre-reform kana spellings of morphemes like these two were morphophonemic in the sense that the same meaningful unit was spelled the same way regardless of whether it was pronounced with final /k/V or with final /Q/.

The old kana spellings were morphophonemic in the same way for the many Sino-Japanese morphemes that have one allomorph ending in /cu/ and another allomorph ending in /Q/, which appears in a binom when the second

morph begins with a voiceless obstruent. For example, /becu/~beQ/ 別 'difference' has the current kana spellings ⟨べつ⟩ (*be tsu*) in ^{MT}/becu·daN/ 別段 'particularly' and ⟨べつ⟩ (*be tsu*) in ^{MT}/beQ·taku/ 別宅 'second house', but before 1946 both allomorphs were spelled the same: ⟨べつ⟩ (*be tsu*), with a full-size second letter. Interestingly, we do not see parallel pre-reform spellings for the few Sino-Japanese morphemes like /niči/~niQ/ 日 'day' that show /Q/ alternating with /či/ rather than with /cu/. The current kana spellings of this morpheme are ⟨にち⟩ (*ni chi*) in ^{MT}/niči·yoH/ 日用 'daily use' and ⟨にっ⟩ (*ni tsu*) in ^{MT}/niQ·čuH/ 日中 'daytime', but the pre-1946 spelling of the allomorph /niQ/ was ⟨にっ⟩ (*ni tsu*), not ⟨にち⟩ (*ni chi*).⁶⁴

Once we know how /Q/ was represented in pre-reform kana spelling, we can make sense of Lyman's description of it as "writing the character for *tsu* before *p*, *t*, *ch*, *s*, *sh* and *k*, and sometimes *ku* before *k*." Since the target audience for his 1878 article was primarily foreign residents of Japan, it was reasonable for Lyman to assume that many of his readers knew enough about kana spelling to understand what he was talking about here. It is not too surprising that he missed the third possibility (which he would have described as *ki* before *k*), since ⟨き⟩ (*ki*) was the least common way of spelling /Q/.

Near the end of his 1878 article, Lyman made a number of observations about what linguists today would call phonotactics, and as mentioned earlier in connection with his use of ⟨d⟩ for /d/ and ⟨j⟩ for /j/, some phonotactic information is incorporated into the syllable charts he provided to show how his Roman-alphabet-based writing system represented the syllables in the traditional "fifty-sound" display of kana letters. As we saw, the charts imply that ⟨di⟩ and ⟨du⟩ in his system represented non-occurring sequences, and as I noted, the sequence /di/ is now well established in recent loanwords, while /du/ remains marginal (Vance 2008:87–88, 228). The charts also imply that ⟨ti⟩ and ⟨tu⟩ represented non-occurring sequences for Lyman, but /ti/, like /di/, is thoroughly integrated into modern Tōkyō Japanese in recent loanwords like /tiQšu+peHpaH/ ティッシュペーパー 'tissue paper' (Vance 2008:228), and in recent years /tu/ seems to have taken root in a small number of loanword items, most notably /tatuH/ タトゥー 'tattoo'.⁶⁵ Lyman said that ⟨je⟩ in his system represented a non-occurring sequence, as noted earlier, and he said the same about ⟨she⟩ and ⟨che⟩. Just like /je/, the sequences /še/ and /če/ are well established in modern Tōkyō Japanese in recent loanwords, as in /šefu/ シェフ 'chef' and /čero/ チェロ 'cello' (Vance 2008:228). Lyman did not say explicitly that ⟨ts⟩ was never followed by anything other than ⟨u⟩, but his charts make this restriction clear. In modern Tōkyō, the sequences /ci ce ca co/ are all possible, although they are infrequent and, except for /ca/, are found only in recent loanwords or foreign proper names (Vance 2008:84).

Lyman also mentioned explicitly that several semivowel+vowel sequences did not occur, namely, those represented as ⟨yi ye wi we wu⟩ in his system. In modern Tōkyō Japanese, /yi/ and /wu/ are still clearly prohibited, which is hardly surprising, since sequences of a semivowel followed by a homorganic high vowel are universally dispreferred (Ohala and Kawasaki 1984). In contrast, /wi/ and /we/ seem to be well established in modern Tōkyō, not only in recent loanwords like /webusaito/ ウェブサイト ‘website’ but also in some mimetic vocabulary items like /wiQ to/ ウイツト ‘with drunken contentment’ (Hamano 1998:39; Vance 2008:90–92; Vance and Matsugu 2008). When hiragana and katakana first came into use around 900 (Miller 1967:125), the sequences /wi/ and /we/ were alive and well, and there letters for them: hiragana ⟨ゐ⟩ and katakana ⟨ヰ⟩ for /wi/, and hiragana ⟨ゑ⟩ and katakana ⟨ヱ⟩ for /we/. These letters were still in use when Lyman was writing, but by then they were just alternative ways of spelling /i/ and /e/.⁶⁶ The correct spelling of syllable-initial /i/ was ⟨ゐヰ⟩ in some words but ⟨ゝい⟩ in others, and similarly, the correct spelling of syllable-initial /e/ was ⟨ゑヱ⟩ in some words but ⟨ゝえ⟩ in others. Part of the 1946 reform was to eliminate this polyvalence by getting rid of ⟨ゐヰゑヱ⟩ and using ⟨ゝいゝえ⟩ consistently instead. Present-day instances of /wi/ and /we/ are spelled innovatively: ⟨ウヰ⟩ (*u_i*) for /wi/ and ⟨ウヱ⟩ (*u_e*) for /we/.

The current status of /ye/ is less certain, although many modern Tōkyō speakers probably have it in foreign proper names such as /yeHmeN/ イエーメン (*i_e – me n*) ‘Yemen’ and perhaps in a few recent loanwords (Vance 2008:90; Vance and Matsugu 2008). Lyman had “(y)e” in his syllable chart, with ⟨y⟩ in parentheses, and he said that the sequence /ye/ was pronounced only in reciting the “fifty sounds.” When present-day Tōkyō speakers recite the *ya-gyō* や行 ‘ya-line’ of the fifty-sound display, they can say /ya i yu e yo/ instead of just /ya yu yo/, filling in the gaps caused by the absence of kana letters for /yi/ and /ye/ with /i/ (spelled ⟨ゝい⟩ in hiragana) and /e/ (spelled ⟨ゝえ⟩ in hiragana) (Matsumoto 2007a:363). Old Japanese allowed both /ye/ and onsetless /e/, but they had merged as /ye/ by about 950 (Miller 1967:200; Frellesvig 2010:206), and they were not represented by separate letters in early hiragana or katakana. Originally, hiragana ⟨ゑ⟩ and katakana ⟨ヱ⟩ represented /ye/, but /ye/ and /we/ had merged as /ye/ by around 1200 in Kyōto.⁶⁷ Many centuries later, /ye/ shifted to the onsetless /e/ that we find in modern Tōkyō Japanese. This later shift has been dated to around 1750 (Toyama 1972:238–239), but it is clear that /ye/ held on longer in Tōkyō (Vance 1987:27; Frellesvig 2010:387), at least as an alternative pronunciation. Brown (1863) provided a katakana chart and gave the romanization “ye or e” for both ⟨ヱ⟩ and ⟨ヲ⟩.⁶⁸ Hepburn said explicitly in all three editions of his dictionary that ⟨ヱ⟩ and ⟨ヲ⟩ no longer represented different sounds, but this way of putting it does not tell us whether these two letters represented /e/, /ye/, or both (in some

kind of non-distinctive variation).⁶⁹ He used the romanization ⟨ye⟩ consistently in the first two editions but switched mostly to ⟨e⟩ in the third edition, although he kept ⟨ye⟩ in a few cases (Hepburn 1886:xii–xiii). Cryptic remarks in the 1872 and 1886 introductions make it clear that we cannot infer whether the pronunciation was /e/ or /ye/ from a romanization.⁷⁰

Lyman was less certain about the status of /wo/. He had “(w)o” in his syllable chart, with ⟨w⟩ in parentheses, and he said that the sequence /wo/, like /ye/, was pronounced only in reciting the “fifty sounds.” He added a less-than-persuasive suggestion that the lip rounding required for /o/ might “account for the incorrect impression that a w exists before it.” But then, in the very next sentence, he contradicted himself and said that /wo/ did occur in the word corresponding to ^{MT}/ioH/ 硫黄 ‘sulfur’, “and perhaps in some other like cases.” As Lyman pointed out, this word had been pronounced something like /iwau/ in the past, since the (pre-reform) kana spelling was ⟨いわう⟩ (*i wa u*).⁷¹ There were separate letters for /wo/ and onsetless /o/ in early kana (hiragana ⟨を⟩ and katakana ⟨ワ⟩ for /wo/; hiragana ⟨お⟩ and katakana ⟨オ⟩ for /o/), but /wo/ and onsetless /o/ later merged as /wo/.⁷² Much later, but before the Meiji period, /wo/ shifted to the onsetless /o/ that we find in modern Tōkyō Japanese (Frellesvig 2010:387). As a result, when Lyman was writing, these kana letters were, for the most part, just alternative ways of spelling onsetless /o/: ⟨をワ⟩ in some words but ⟨おオ⟩ in others. Hiragana ⟨を⟩ and katakana ⟨ワ⟩ were retained in the 1946 reform, but only for the accusative particle /o/.

Brown (1863), in his katakana chart, gave the romanization “o” for ⟨オ⟩ and “wo or o” for ⟨ワ⟩, and in actual practice, he used ⟨wo⟩ for the accusative particle but ⟨o⟩ for other short syllables corresponding to ^{MT}/o/.⁷³ For long syllables corresponding to ^{MT}/oH/ that derived historically from earlier /wau/, he had ⟨woö⟩, as in ⟨iwoö⟩ for the word meaning ‘sulfur’ (Brown 1863:235).⁷⁴ Hepburn said explicitly in all three editions of his dictionary that ⟨ワ⟩ and ⟨オ⟩ no longer represented different sounds, but just as in the case of /e/ versus /ye/, this way of putting it does not tell us exactly what he thought any particular instance of one of these two letters represented (/o/, /wo/, or /o~/~wo/).⁷⁵ The first edition has ⟨wo⟩ for the accusative particle, both as a headword and in examples sentences. The first edition also has ⟨wo⟩ for ⟨ワ⟩ in the katakana table in the introduction (Hepburn 1867:x) and also for the two alternative pronunciations of a word meaning ‘fish’, both listed as headwords: ⟨iwo⟩ corresponding to katakana ⟨イワ⟩ and ⟨uwo⟩ corresponding to katakana ⟨ウワ⟩ (cf. ^{MT}/uo/ 魚). Otherwise, the first edition has ⟨o⟩ for ⟨ワ⟩, as in ⟨otoko⟩ corresponding to ⟨ワトコ⟩ (*wo to ko*), the pre-reform kana spelling of the word corresponding to ^{MT}/otoko/ 男 ‘man’. For long syllables derived from earlier /wau/, we find ⟨wō⟩ corresponding to ⟨ワウ⟩ (*wa u*) word-medially, as in ⟨u-wō-sa-wō⟩ and ⟨ウワウサワウ⟩ (*u wa u sa wa u*) for ^{MT}/u·oH+sa·oH/ 右往左往

'stampede', but we find ⟨ō⟩ corresponding to ⟨ワウ⟩ (*wa u*) word-initially, as in ⟨ōrai⟩ and ⟨ワウライ⟩ (*wa u ra i*) for ^{MT}/oH·rai/ 往来 'comings and goings'. The headword meaning 'sulfur' follows this pattern: ⟨iwō⟩ and ⟨イワウ⟩ (*i wa u*). Everything is the same in the two later editions except that they have ⟨o⟩ for ⟨ワ⟩ in their katakana tables (Hepburn 1872:xii, 1886:x).⁷⁶

When present-day Tōkyō speakers recite the *wa-gyō* わ行 'wa-line' of the fifty-sound display, they can say /wa i u e o/, filling in the gaps caused by the absence of modern kana letters for /wi/, /wu/, and /we/ with /i/ (spelled ⟨い⟩), /u/ (spelled ⟨う⟩) and /e/ (spelled ⟨え⟩), and spelling /o/ with ⟨を⟩ (the letter that originally represented /wo/).⁷⁷ Like /wi/ and /we/, /wo/ seems to be well established in modern Tōkyō in recent loanwords like /woHkumaN/ ウォークマン 'Walkman' (Vance 2008:91–92) and in mimetic vocabulary items like /woH+woH/ ウォーウォー 'woof-woof' (Hamano 1998:98).⁷⁸ Also, there are Tōkyō speakers who sing the accusative particle as /wo/ in popular songs, even though they pronounce it as /o/ in ordinary speech.

Lyman's system used 21 of the 26 letters in the English version of the Roman alphabet: all except ⟨f l q v x⟩. He suggested that "the other Roman letters could be used, if desired, for foreign words, the introduction of which into Japanese is often so convenient to students of our western arts and sciences, and would be so very greatly facilitated by exchanging the present cumbrous characters for our alphabet." It is hard to tell exactly what Lyman had in mind here, but adopting the conventional Roman-alphabet spellings used in writing the donor languages to represent loanwords would obviously undermine the consistent correspondences between orthography and pronunciation that Lyman was trying to achieve. For example, English *pencil* had already been borrowed into Japanese when Lyman was writing, and of course its pronunciation had been modified to conform to the Japanese phonological system.⁷⁹ Hepburn listed it as *penshiru* in the 1872 second edition of his dictionary, and Lyman's Japanese writing system would have required ⟨pen-shiru⟩ for this pronunciation.⁸⁰

Large-scale borrowing from English was just beginning when Lyman's article appeared in 1878, and it is not clear how well Lyman understood the notion of integrating loanwords into the borrowing language phonologically. He may have thought that Japanese speakers should use the English pronunciation of *pencil*, and this would have required spelling it with ⟨l⟩, but simply writing ⟨pencil⟩ would not have been appropriate, even if the intended pronunciation ended with [l]. The vowels represented by ⟨e⟩ and ⟨i⟩ in this rendering of English *pencil* differ phonetically from the vowels represented by ⟨e⟩ and ⟨i⟩ in the system Lyman proposed for Japanese, and an even more obvious problem is the ⟨c⟩ representing English /s/. It is unlikely that Lyman had actually thought any

of this through, but we cannot tell for sure, since his fleeting reference to “foreign words” is all we have to go on.

The modern convention of using katakana to write non-Chinese loanwords is a later innovation, and many borrowings were written (at least sometimes) with *ateji* in Lyman's day.⁸¹ For example, the 1872 second edition of Hepburn's dictionary gives meaning-based 石鹼 for the headword *shabon* ‘soap’ (a 17th-century borrowing from Spanish or Portuguese).⁸² These kanji are used to write the Sino-Japanese synonym /seQ.keN/ ‘soap’ (cf. /seki/~seQ/ 石 ‘stone’ and /keN/ 鹼 ‘lye’), which also appears as a headword in Hepburn's 1872 second edition, accompanied by the same two kanji.⁸³ The entry in the same edition for *tempura* (a 17th-century borrowing from Portuguese) gives pronunciation-based 天麩羅 (cf. Sino-Japanese /teN/ 天 ‘heaven’, /fu~/pu/ 麩 ‘wheat gluten’, and /ra/ 羅 ‘net’).⁸⁴ Lyman may have had examples like these in mind when he mentioned “cumbrous characters” in connection with foreign words, but his Roman-alphabet-based system for Japanese had no advantage over katakana in representing the pronunciation of phonologically assimilated loanwords.

Lyman complained that “The *y* after a vowel following other consonants than *sh* or *ch* is often dropped by mere carelessness in foreign pronunciation,” but all the examples he cited had (i) immediately preceding (y) in his romanization: “*miya*, *riyō*, *daimiyō*, *Tōkiyō*, *Kiyōto*.” In fact, the distinctions between /ia io ea eo/ and /iya iyo eya eyo/ are quite blurred in modern Tōkyō Japanese (Martin 1975:734), which comes as no surprise, since it is intrinsically difficult to tell whether or not there is a semivowel [j] between a front vowel like [i] or [e] and a following vowel. As a result, many recent loanwords have variable katakana spellings, as in 皮アノ (*pi a no*) and 皮ヤノ (*pi ya no*) for the word meaning ‘piano’.⁸⁵ Lyman was correct that the (orthographically implied) presence or absence of /y/ could serve to distinguish otherwise identical words, although he did not provide any examples. One relevant pair is /miyage/ 土産 ‘gift’ and /mi+age/ 見上げ ‘looking up’, both of which appear as headwords in the 1872 second edition of Hepburn's dictionary. It is, of course, unlikely that a listener could reliably discriminate these two words out of context.⁸⁶

In contrast to his overzealous concern about the distinction between /iy/V and /i/V, Lyman was oblivious to a distinction that modern Tōkyō speakers maintain quite clearly, namely, C/iy/ versus C/y/. The list of his examples that I cited in the paragraph just above includes *miya*, which must correspond to ^{MT}/miya/ 宮 ‘shrine’, and *daimiyō*, which must correspond to ^{MT}/dai-myōH/ 大名 ‘feudal lord’. Notice that Lyman romanized both /miy/ and /my/ as (miy), just as Hepburn did both in the 1867 first edition and in the 1872 second edition of his dictionary. Hepburn finally switched to (Cy) for C/y/ in his 1886 third edition. It is well known that

present-day English-speaking learners of Japanese find the Japanese distinctions between C/iy/ and C/y/ difficult, and the typical response in most cases is to treat both as C/iy/ (Tanaka and Kubozono 1999:11). As a result, pairs like /byoH·iN/ 病院 ‘hospital’ and /bi·yoH+iN/ 美容院 ‘beauty salon’ end up homophonous, and Lyman’s own Japanese pronunciation almost certainly had this stereotypical foreign trait.⁸⁷ As mentioned in passing in §4.3, Lyman seems to have thought that the word corresponding to ^{MT}/hyaku/ 百 ‘hundred’, which he romanized ⟨hiyaku⟩, had three syllables except in rapid (and presumably sloppy) pronunciation.

Of course, in Lyman’s day, kana spelling did not distinguish C/iy/ from C/y/. For example, in hiragana the single syllable /hya/ and the two-syllable sequence /hiya/ were both spelled with the letter for /hi/ followed by the letter for /ya/: ⟨ひゃ⟩ (*hi ya*). One of the reforms adopted in 1946 eliminated this kind of ambiguity by prescribing a reduced-size second letter for C/y/V syllables (Frellesvig 2010:170). As a result, in modern spelling, ⟨ひゃ⟩ (*hi ya*) unambiguously represents /hiya/, and ⟨ひゃゃ⟩ (*hi yaa*) unambiguously represents /hya/. It seems likely that the pre-reform kana spellings reinforced English speakers’ natural inclination to confuse C/y/ with C/iy/, and the romanizations in the first two editions of Hepburn’s dictionary followed kana spelling in this respect. We see the word meaning ‘hundred’ represented as ⟨hiyaku⟩ both in the 1867 second edition and in the 1872, with ⟨hyaku⟩ making its debut only in the 1886 third edition. Lyman, on the other hand, maintained the earlier practice in his 1894 article on *rendaku*, as we can see from two of the examples he cited there. The words corresponding to ^{MT}/hyoH·roH+kata/ 兵糧方 ‘provisions officer’ and ^{MT}/hi+yoH+tori/ 日傭取り ‘day laborer’ have /hyoH/ and /hiyoH/ romanized identically as ⟨hiyoo⟩.⁸⁸

The reason Lyman confined his criticism of *y*-dropping to ⟨iy⟩ sequences “following other consonants than *sh* or *ch*” is that he romanized /š/V and /č/V sequences as ⟨shV⟩ and ⟨chV⟩, even though their kana spellings at the time were ⟨しゃ⟩ (*shi ya*), ⟨しよ⟩ (*shi yo*), and ⟨しゅ⟩ (*shi yu*) for /ša šo šu/, and ⟨ちゃ⟩ (*chi ya*), ⟨ちよ⟩ (*chi yo*), and ⟨ちゅ⟩ (*chi yu*) for /ča čo ču/. He should have mentioned /j/V sequences too, since his ⟨jV⟩ romanizations corresponded to the kana spellings ⟨じゃ⟩ (*ji ya*), ⟨じよ⟩ (*ji yo*), and ⟨じゅ⟩ (*ji yu*) for /ja jo ju/.⁸⁹ Surprisingly, he overlooked the fact that these same kana spellings could also represent two-syllable C/iy/V sequences. Using examples from Hepburn’s 1872 second edition to illustrate, we see the katakana spelling ⟨シヨク⟩ (*shi yo ku*) both for the headword romanized ⟨shoku⟩ (cf. ^{MT}/šoku/ 職 ‘job’) and for the headword romanized ⟨shiyoku⟩ (cf. ^{MT}/ši-yoku/ 私欲 ‘selfish desire’). The katakana letters ⟨シヨ⟩ (*shi yo*) represented the single syllable /šo/ in the former but the two syllables /ši_yo/ in the latter. Lyman noted that orthographic /š/V, /č/V, and /j/V sequences were possible, so the blurred distinction between /iy/V and /i/V was relevant following /š/, /č/, and /j/. For example, Lyman would have romanized the word

corresponding to ^{MT}/šio/ 塩 'salt' as ⟨shio⟩, just as Hepburn (1872) did. As it happens, there is no headword with the romanization ⟨shio⟩ listed in Hepburn's dictionary, and there is no word of the form /šio/ in common use in modern Tōkyō, but a listener who does not know how to spell the word meaning 'salt' (in kana or in romanization) would be hard pressed to decide whether a speaker is saying /šio/ or /šio/.⁹⁰

In the last paragraph of his 1878 article, Lyman listed the differences between the system that he was proposing and the romanization that Hepburn was using at the time (i.e., in Hepburn 1872), and one of the items on this list is "not replacing *jiu* and *shiu* by *jū* and *shū*." In the pre-reform kana spellings that were in use at the time, hiragana ⟨しう⟩ (*shi u*) could represent either /šio/ (two short syllables) or /šioH/ (one long syllable), and hiragana ⟨じう⟩ (*ji u*) could represent either /jio/ or /jioH/. To give just one pair of examples, Hepburn's 1872 second edition has the katakana ⟨シウチ⟩ (*shi u chi*) for ⟨shi-uchi⟩ (cf. ^{MT}/ši+uči/ 仕打ち 'behavior') and the katakana ⟨シウブン⟩ (*shi u bu n*) for ⟨shū-bun⟩ (cf. ^{MT}/šioH·buN/ 秋分 'autumnal equinox'), with ⟨シウ⟩ (*shi u*) representing /šio/ in the former and /šioH/ in the latter. The other possible kana spellings of the long syllable /šioH/ were ⟨シユウ⟩ (*shi yu u*) (e.g., the counterpart of ^{MT}/šioH/ 宗 'sect') and ⟨シフ⟩ (*shi fu*) (e.g., the counterpart of ^{MT}/šioH/ 集 'gathering'). The three parallel kana spellings for /jioH/ were ⟨ジウ⟩ (*ji u*) (e.g., the counterpart of ^{MT}/jioH/ 獣 'animal'), ⟨ジユウ⟩ (*ji yu u*) (e.g., the counterpart of ^{MT}/jioH/ 重 'layer'), and ⟨ジフ⟩ (*ji fu*) (e.g., the counterpart of ^{MT}/jioH/ 十 'ten').⁹¹

Hepburn was absolutely correct to treat all three kana spellings in each of these two sets as phonologically identical (i.e., to romanize them all as ⟨shū⟩ or ⟨jū⟩), but Lyman was convinced that ⟨シウ⟩ (*shi u*) and ⟨ジウ⟩ (*ji u*) always represented /šio/ and /jio/ "since they are by natives clearly so sounded, though by foreigners often pronounced as one syllable." It could be that he was misled by native speakers who tried to be helpful by pronouncing the words of interest unnaturally to make the kana spelling clear. The long vowel /oH/ in modern Tōkyō Japanese often triggers this kind of behavior, because even in present-day kana spelling the most common way of representing the second half of this long vowel is (in hiragana) ⟨う⟩ (*u*). When there is some reason to draw a listener's attention to this spelling, a speaker will typically offer the unnatural pronunciation /o_u/ instead of /oH/.⁹² This explanation for Lyman's decision to use ⟨shiu jiu⟩ rather than ⟨shū jū⟩ for the items in questions is sheer speculation, of course, but there is no obvious alternative explanation. In any case, the one relevant example in his later article on *rendaku* (Lyman 1894:163) indicates that he had not changed his mind. He gave the romanization ⟨unjiukitsu⟩ for an example that clearly corresponds to ^{MT}/uN·jioH+kicu/ 温州橘 'Wēnzhōu orange' (see the Appendix), with ⟨jiu⟩ matching the pre-reform kana spelling ⟨ジウ⟩ (*ji u*).⁹³

Lyman did not say explicitly how he would have handled cases where the pre-modern kana spellings <シフ> (*shi fu*) and <ジフ> (*ji fu*) corresponded to Hepburn’s <shū> and <jū>, and there are no relevant examples in Lyman’s 1878 article or in his 1894 article. These spellings go back to a time when the consonant in the syllable represented by hiragana <ふ> (*fu*) and katakana <フ> (*fu*) was pronounced [p] (see §1.1). The morphemes that were spelled this way are Sino-Japanese, and their Chinese sources were syllables ending in /p/, as we can tell from modern Chinese languages that (unlike Mandarin) have preserved syllable-final voiceless stops. For example, as we saw above, ^{MT}/šuH/ 集 ‘gathering’ was spelled <シフ> (*shi fu*) (cf. modern Cantonese /t^hap²/ 集 ‘gathering’), and ^{MT}/juH/ + ‘ten’ was spelled <ジフ> (*ji fu*) (cf. modern Cantonese /sɒp²/ + ‘ten’).⁹⁴ There is no question that Lyman would have rejected romanizations like <shifu jifu> for these Sino-Japanese items. His 1878 article includes an unambiguous statement that a Roman-alphabet-based writing system for Japanese that reflected “some ancient pronunciation now obsolete . . . should not be used for the present living language.” Notice, incidentally, that this same statement leaves no doubt about Lyman’s belief that <シウ> (*shi u*) and <ジウ> (*ji u*) represented /ši u/ and /ji u/, not /šuH/ and /juH/. It seems likely that Lyman would have used <shiu> and <jiu> for Sino-Japanese items spelled <シフ> (*shi fu*) and <ジフ> (*ji fu*) in kana, but there is no way to be sure.

Even though Hepburn used <shū> and <jū> for /šuH/ and /juH/ throughout the 1867, 1872, and 1886 editions of his dictionary, regardless of the kana spelling, he used <chiu> for /čuH/ in the first two editions and replaced it with <chū> only in the third edition. Also, quite inexplicably, he gave katakana <チウ> (*chi u*) in every case in all three editions, despite the fact that there were two possible pre-reform kana spellings for /čuH/. For example, <チウ> (*chi u*) was correct for the item corresponding to ^{MT}/čuH/ 宙 ‘air’, but <チユウ> (*chi yu u*) was correct for the item corresponding to ^{MT}/čuH/ 中 ‘middle’. In any case, the romanization <chiu> in Hepburn’s 1872 second edition is the reason that Lyman did not say anything about <chū> when he objected to Hepburn’s use of <shū jū> for items with the pre-reform kana spellings <シウ ジウ> (*shi u* and *ji u*).

In the syllable charts that Lyman provided to show how his Roman-alphabet-based writing system represented the syllables in the traditional fifty-sound display of kana letters, he used the terms “impure sounds” and “half impure sounds” without explanation. These are conventional translations of the Japanese terms *dakuon* 濁音, which denotes moras beginning with a voiced obstruent, and *han-dakuon* 半濁音 ‘half *dakuon*’ which denotes moras beginning with /p/. In his *rendaku* article, Lyman gave his readers some help. Regarding the impure sounds, he said, “The Japanese call a sonant [i.e., voiced sound] the *nigori*, that is, the turbid, or impure form, of its corresponding surd [i.e., voiceless sound]” (Lyman

1894:160), and shortly after that he used the label “half nigori” for /p/ (Lyman 1894:162). As mentioned in §1.1, the kana voicing diacritic (゛) is called *dakuten* 濁点, and the same kanji is used to write both Sino-Japanese /daku/ and native Japanese /nigori/ 濁り, which is derived from the verb /nigor-u/ 濁る ‘to become muddy’.⁹⁵ The technique of using a diacritic to distinguish a mora beginning with a voiced obstruent from one beginning with a voiceless obstruent has a long history (Seeley 1991:134–135; Frellesvig 2010:163–165), although we do not see consistent *dakuten* in kana spelling until the 20th century. The diacritic (゜), which marks letters as representing /p/V moras, is called *han-dakuten* 半濁点 ‘half *dakuten*’, and it was first used by Jesuit missionaries in the late 16th century (Frellesvig 2010:165). As explained in §7.2, the traditional terminology seems to have led Lyman astray in his understanding of *rendaku*.

5 Lyman's 1894 Article

5.1 Background

Lyman's "The Change from Surd to Sonant in Japanese Compounds" was published in 1894 by the Oriental Club of Philadelphia.¹ This organization was founded in 1888, and Lyman was a charter member. The words *surd* and *sonant* in the title are old-fashioned technical terms: *surd* means 'voiceless (sound)', and *sonant* means 'voiced (sound)'. The complete text of Lyman's article is reproduced below in §5.2, with only a few trivial corrections to make the italicization and punctuation consistent.²

The bulk of the article consists of lists of examples, which Lyman cited in romanization and, in most cases, without any definitions. There are quite a few errors in these examples, but rather than correcting Lyman's text, I have noted these errors in the Appendix, which lists all of the examples and, as far as possible, identifies the lexical item that Lyman presumably had in mind in each case. Lyman said that most of his examples were from the 1872 second edition of Hepburn's dictionary. The third edition appeared in 1886, but Lyman said in his first paragraph that the 1894 article was based on an 1883 presentation.³

The romanization system that Hepburn adopted in his 1886 third edition is the earliest version of what has come to be known as Hepburn romanization. As Seeley (1991:140) explains, the 1886 version is essentially the system adopted by the Rōmaji-kai 羅馬字会 'Romanization Club' in 1885, and this is how Hepburn himself described it in the third edition's preface (Hepburn 1886:xii). A reproduction of the instructions published by the Rōmaji-kai in 1885 is included in a collection of important documents pertaining to the history of writing in modern Japan (Yoshida and Inokuchi 1962:289–303).

Some words had a different romanization in each of Hepburn's first three editions. For example, the headword corresponding to modern Tōkyō /cue/ 杖 'cane' appeared as ⟨tszye⟩ in the 1867 first edition, as ⟨tsuye⟩ in the 1872 second edition, and as ⟨tsue⟩ in the 1886 third edition. As will be explained in the remainder of this section, the 1886 system differs in several ways from the modern (modified) Hepburn system mentioned in the Preface of this book. Lyman did not follow either the 1872 system or the 1886 system exactly, and the idiosyncratic features of his romanization will be noted as they come up.

As we saw in §4.6, Hepburn abandoned ⟨ye⟩ for the most part in 1886, but he retained it in the headwords ⟨yen⟩ (cf. modern Tōkyō /eN/ 円 'yen') and ⟨ye⟩ (cf. modern Tōkyō /e/ へ 'to'). The 1885 Rōmaji-kai instructions specified the latter (the particle meaning 'to') as the only use for ⟨ye⟩ (Yoshida and Inokuchi

1962:293). Hepburn also kept ⟨ye⟩ immediately following the morpheme division in a Sino-Japanese binom, as in ⟨kōyen⟩ (cf. modern Tōkyō /koH·eN/ 公園 ‘park’) and ⟨kenyeki⟩ (cf. modern Tōkyō /keN·eki/ 檢疫 ‘quarantine’), and the rationale he offered was that ⟨y⟩ was preferable to a hyphen (Hepburn 1886: xiii).⁴ But there is no need for a hyphen between a vowel letter and ⟨e⟩; the romanizations ⟨Ve⟩ and ⟨V̄e⟩ are unambiguous. For example, modified Hepburn ⟨kōen⟩ can only be /koH·eN/. On the other hand, there is a problem with the romanization ⟨ne⟩, since ⟨n⟩ can represent either syllable-initial /n/ or syllable-final /N/. As mentioned in the Preface and again in §4.6, the modern rule (which is not always followed) is to use an apostrophe to avoid the potential ambiguity, as in ⟨kan’etsu⟩ for /kaN·ecu/ 觀閱 ‘troop review’ but ⟨kanetsu⟩ for /ka·necu/ 加熱 ‘heating’. Thus, the modified Hepburn romanization for /keN·eki/ is ⟨ken’eki⟩. Lyman did not use ⟨ye⟩ in any of his 1894 examples.

Leaving the problem of ⟨ye⟩ aside, Hepburn used a hyphen in 1886 to indicate /ny/ following a vowel, as in ⟨ho·nyū⟩ for the headword corresponding to modern Tōkyō /ho·nyuH/ 哺乳 ‘lactation’, but for /Ny/ he was inconsistent. For example, he had ⟨honyaku⟩, with no hyphen, for the headword corresponding to modern Tōkyō /hoN·yaku/ 翻譯 ‘translation’ (modified Hepburn ⟨hon’yaku⟩), but he had ⟨in·yō⟩, with a hyphen, for the headword corresponding to modern Tōkyō /iN·yoH/ 陰陽 ‘yin and yang’ (modified Hepburn ⟨in’yō⟩). The latter was listed immediately before ⟨i·nyō⟩ (cf. modern Tōkyō /i·nyoH/ 圍繞 ‘surrounding’; modified Hepburn ⟨inyō⟩), which of course drew attention to the distinction. Hepburn was also inconsistent about distinguishing /n/V from /N/V in 1886. He had a hyphen in ⟨ge·nin⟩ (cf. modern Tōkyō /ge·niN/ 下人 ‘lowly person’; modified Hepburn ⟨genin⟩) but not in ⟨kinen⟩ (cf. modern Tōkyō /ki·neN/ 記念 ‘commemoration’; modified Hepburn ⟨kinen⟩), and he had a hyphen in ⟨gen·in⟩ (cf. modern Tōkyō /geN·iN/ 原因 ‘cause’; modified Hepburn ⟨gen’in⟩) but not in ⟨sanin⟩ (cf. modern Tōkyō /saN·iN/ 山陰 ‘mountain shadow’; modified Hepburn ⟨san’in⟩). The Rōmaji-kai had adopted ⟨n·y⟩ for /Ny/ and ⟨n·V⟩ for /N/V, as opposed to ⟨ny⟩ for /ny/ and ⟨nV⟩ for /n/V (Yoshida and Inokuchi 1962:299), and all it takes to bring these into line with modern practice is to replace the hyphens with apostrophes. As noted in §4.6, Lyman did not seem to be aware of the potential ambiguity of ⟨nV⟩, but the problem raised in this paragraph did not arise for him in 1894 because none of his examples contained /ny/, /Ny/, or /N/V.

As mentioned in §4.6, Hepburn used ⟨wo⟩ for the accusative particle in 1886 (cf. modern Tōkyō /o/ を). This romanization followed the Rōmaji-kai instructions, which restricted ⟨wo⟩ to this single word (Yoshida and Inokuchi 1962:293).⁵ Hepburn also retained ⟨w⟩ in his romanizations of Sino-Japanese morphemes that had once been pronounced with /kwa/ or /gwa/. For example, he had ⟨kwahei⟩ for the word corresponding to modern Tōkyō /ka·hei/ 貨幣 ‘coin’ and ⟨gwaijin⟩ for the

word corresponding to modern Tōkyō /gai·jīN/ 外人 ‘foreigner’. In Tōkyō, earlier /kwa/ and /ka/ had merged as /ka/, and earlier /gwa/ and /ga/ had merged as /ga/ by the late 19th century (Frellesvig 2010:387), although the distinctions are preserved to this day in some traditional dialects (Satō 2004:1193). In the historical kana spelling that was still in use when Hepburn and Lyman were writing, syllables that had once had /kwa/ or /gwa/ were spelled with ⟨くわ⟩ (*ku wa*) or ⟨ぐわ⟩ (*gu wa*). Hepburn (1872:xiv), in the introduction to his second edition, noted explicitly that words spelled as if they contained /kw/ or /gw/ were actually pronounced with just /k/ or /g/ in Tōkyō, but his romanization reflected the kana spelling. For the headword corresponding to modern Tōkyō /kai/ 会 ‘meeting’ (</kwai/), he had (k’wai) in the first edition, ⟨kuwai⟩ in the second edition, and ⟨kwai⟩ in the third edition. The 1885 Rōmaji-kai instructions allowed users to choose for themselves whether or not to use ⟨w⟩ in such cases (Yoshida and Inokuchi 1962:297), and Hepburn used ⟨w⟩ consistently in 1886. Modified Hepburn romanization uses only ⟨ka⟩ and ⟨ga⟩, reflecting modern Tōkyō pronunciation. Lyman followed Hepburn’s second edition in this case, using ⟨kuwa⟩ and ⟨guwa⟩, although the number of relevant examples in his 1894 article is very small. One of them is ⟨cha-guwashi⟩, corresponding to modern Tōkyō /ča+ga·ši/ 茶菓子 ‘tea cake’. Hepburn had ⟨cha-guwashi⟩ in 1872 but ⟨chagwashi⟩ in 1886, and of course the modified Hepburn romanization is ⟨chagashi⟩.

Hepburn’s 1886 romanization consistently reflected the modern Tōkyō distinction between C/iy/ and C/y/. For example, the headwords corresponding to modern Tōkyō /hi·yoH/ 飛揚 ‘flying high’ and /hyoH/ 表 ‘chart’ appeared as ⟨hiyō⟩ and ⟨hyō⟩. The 1885 Rōmaji-kai instructions clearly specified ⟨Cy⟩ for C/y/ (Yoshida and Inokuchi 1962:294), and as explained in §4.6, Hepburn modified his earlier practice accordingly. His 1867 first edition had mostly ⟨Ciy⟩ both for C/iy/ and for C/y/, although there were a few instances of ⟨C’y⟩ for C/y/. For example, the headwords corresponding to the modern Tōkyō homonyms /hyoH/ 豹 ‘leopard’ and /hyoH/ 俵 ‘bale’ were romanized differently in 1867: ⟨hiyō⟩ for the former, but ⟨h’yō⟩ for the latter.⁶ The 1872 second edition was consistent, romanizing all instances of C/iy/ and C/y/ as ⟨Ciy⟩, including ⟨hiyō⟩ for both /hyoH/ ‘leopard’ and /hyoH/ ‘bale’. In most cases, there is a morpheme division between /i/ and /y/ in C/iy/, and since Hepburn often marked morpheme divisions with hyphens, C/iy/ was often represented indirectly by ⟨Ci-y⟩ in 1867 and 1872. The headword corresponding to modern Tōkyō /hi·yaku/ 秘薬 ‘secret medicine’ appeared both in 1867 and in 1872 as ⟨hi-yaku⟩, as opposed to ⟨hiyaku⟩ for the headword corresponding to modern Tōkyō /hyaku/ 百 ‘hundred’. In 1886, these two words appeared as ⟨hi-yaku⟩ and ⟨hyaku⟩. I suggested in §4.6 that both Hepburn and Lyman had probably failed to master the distinction between C/iy/ and C/y/ in Japanese. In any

case, Lyman continued to use ⟨Ciy⟩ both for C/iy/ and for C/y/. His 1894 examples include include ⟨hiy⟩ for /hiy/ in ⟨hiyoo-tori⟩ (cf. modern Tōkyō /hi+yoH+tori/ 日雇取り ‘day laborer’) and for /hy/ in ⟨hiyokohiyoko⟩ (cf. modern Tōkyō /hyoko+hyoko/ ひよこひよこ ‘hop-hop’).

In all three editions of his dictionary, Hepburn used ⟨m⟩ for /N/ immediately preceding bilabial /p/, /b/, or /m/, which he romanized as ⟨p b m⟩. The Rōmaji-kai followed the same principle (Yoshida and Inokuchi 1962:298), and so did Lyman, as noted in §4.6. Modified Hepburn romanization always uses ⟨n⟩ for /N/, no matter what follows. For example, Lyman cited the word corresponding to modern Tōkyō /saN·beN/ 三遍 ‘three times’ in 1894, and he romanized it as ⟨sam-ben⟩. The modified Hepburn romanization is ⟨sanben⟩.

In Hepburn’s 1872 second edition, he used ⟨dz⟩ for /z/ immediately preceding /u/ and ⟨z⟩ for /z/ elsewhere, and Lyman adopted this principle in his 1878 article, as we saw in §4.3 and §4.6. The 1885 Rōmaji-kai instructions specified ⟨zu⟩ for /zu/ regardless of the kana spelling (Yoshida and Inokuchi 1962:294), and we saw in §4.6 that Hepburn switched from ⟨dzu⟩ to ⟨zu⟩ in his 1886 third edition. As noted in §1.1, there is no phonemic distinction between [z] and [dz] in present-day Tōkyō, and as we saw in §4.6, Lyman said explicitly in 1878 that there was no contrast between [z] and [dz] before /u/ in late 19th-century Tōkyō. But we also saw in §4.6 that Lyman seems to have believed that [dz] and not [z] appeared consistently before /u/, and he retained ⟨dzu⟩ for /zu/ in his 1894 article. As noted in §4.3, *ts* is absent from Lyman’s list of the voiceless consonants involved in the rendaku alternations, presumably because he saw examples like ⟨tsuka⟩ (^{MT}/cuka/ 塚 ‘mound’) and ⟨aridzuka⟩ (^{MT}/ari+zuka/ 蟻塚 ‘anthill’) as involving ⟨t⟩ alternating with ⟨d⟩ and ⟨s⟩ alternating with ⟨z⟩. Except for a small number of examples, mostly recent loans, modern Tōkyō /c/ occurs only immediately preceding /u/ (Vance 2008:84). None of these loans was in use when Lyman was writing, and, in any case, none exhibits rendaku (as is typical for recent loan elements; see §7.3.1). Consequently, the /c/~z/ alternation did not cause any problem for Lyman, since he consistently romanized /cu/ as ⟨tsu⟩ and /zu/ as ⟨dzu⟩. On the other hand, Lyman seems not to have realized that the /s/~z/ alternation did cause a problem when the immediately following vowel was /u/. In examples like ⟨sake⟩ (^{MT}/sake/ 酒 ‘saké’) and ⟨amazake⟩ (^{MT}/ama+zake/ 甘酒 ‘sweet saké’), ⟨s⟩ alternates with ⟨z⟩, but in examples like ⟨sue⟩ (^{MT}/sue/ 末 ‘end’) and ⟨tsukidzue⟩ (^{MT}/cuki+zue/ 月末 ‘month end’), ⟨s⟩ alternates with ⟨dz⟩ in Lyman’s romanization. Lyman gives no explanation for the appearance of ⟨d⟩ in the latter.

Another feature of Lyman’s romanization that differs conspicuously from Hepburn’s is that Lyman used two identical vowel letters in a row to represent a long vowel, as in ⟨usugeshoo⟩ for /usu+ge·šoH/ 薄化粧 ‘thin make-up’. This

double-letter representation is what he recommended in his 1878 article, as we saw in §4.6, and in his 1894 article, he attributed it to Engelbert Kaempfer.⁷ Hepburn used a macron to indicate vowel length in most cases, as in ⟨usugesō⟩, although he was not entirely consistent. In the introduction to his first edition (Hepburn 1867:ix), he explained that the macron in ⟨ā ī ō ū⟩ indicated vowel length, and he romanized the headwords corresponding to modern Tōkyō /niH+saN/ 兄さん ‘older brother’ and /o+baH+saN/ お婆さん ‘grandmother’ as ⟨nisan⟩ and ⟨obā-san⟩. Since there do not seem to be any headwords containing /eH/ in the first edition, Hepburn did not mention the romanization ⟨ē⟩.⁸ In the later editions (Hepburn 1872:xii, 1886:xi), he retained only ⟨ō ū⟩ and replaced ⟨ā ī⟩ with ⟨aa ii⟩, so the two headwords mentioned above appear as ⟨nisan⟩ and ⟨obaa-san⟩. In native and Sino-Japanese words, /oH/ and /uH/ are far more frequent than the other long vowels, and even Hepburn’s third edition lists only a very few loanwords from languages other than Chinese. Consequently, the number of headwords affected by replacing ⟨ā ī⟩ with ⟨aa ii⟩ was quite small.

The 1885 Rōmaji-kai instructions prescribed a macron for all long vowels, but its authors noted that ⟨ā ī ē⟩ were rare (Yoshida and Inokuchi 1962:292). They also cautioned against using macrons in certain instances, and most of these were words that clearly contained a sequence of two short vowels rather than a single long vowel. For example, modern Tōkyō verb forms like /omo-u/ 思う ‘to think’ and /suku-u/ 救う ‘to rescue’ end with the short syllable /u/, at least in careful pronunciation (Vance 2008:163), and the 1885 instructions specified ⟨omou⟩ and ⟨sukuu⟩, explicitly labeling ⟨omō⟩ and ⟨sukū⟩ as incorrect (Yoshida and Inokuchi 1962:297).⁹ On the other hand, the 1885 instructions also insisted on ⟨ii⟩ rather than ⟨ī⟩ for several words that have the long vowel /iH/ in modern Tōkyō (Yoshida and Inokuchi 1962:297), but it could be that these words actually had /ii/ in the late 19th century. In fact, one of them, a now obsolescent word meaning ‘blindness’, is listed as /mešiH/ (メシー) in *NHK* and *Meikai* but as /mešii/ (メシイ) in an earlier *NHK* pronunciation dictionary (NHK Hōsō Bunka Kenkyūjo 1998). Most of the examples cited in the 1885 instructions as requiring ⟨ii⟩ are descended from earlier forms that contained a two-syllable sequence with a consonant at the beginning of the second syllable (/i/C/i/>/ii/>/iH/), and it is possible that the last step in this change was still in progress in 1885.¹⁰

As we saw in §4.3 and §4.6, both Hepburn and Lyman seem to have been unaware of the potential for contrast between a long vowel and a sequence of two identical short vowels, probably because two consecutive vowels with the same quality (whether long or short) are almost always on opposite sides of a morpheme division. As long as the relevant division is marked with a hyphen, there is no ambiguity in romanization. For example, Hepburn’s 1886 third edition has ⟨iro-otoko⟩ for the headword corresponding to modern Tōkyō /iro+otoko/ 色男

‘attractive man’, with ⟨o-o⟩ representing /oo/. Lyman presumably would have romanized this word the same way, and there would have been no danger of confusing ⟨o-o⟩ with his ⟨oo⟩ for /oH/. In any case, as noted in §4.6, Lyman did not actually cite any examples that would have required ⟨V-V⟩.

5.2 Lyman 1894

The Change from Surd to Sonant in Japanese Compounds

Benjamin Smith Lyman

The main object of this paper is to place on record in detail the more important facts at the base of certain euphonic rules briefly given in the short published abstract of a paper of mine on “The Japanese Nigori of Composition,” read before the American Oriental Society in 1883.

At the beginning of the second part of very many Japanese compound words the surds *ch*, *f*, *h*, *k*, *s*, *sh* and *t* are changed to sonants. The Japanese call a sonant the *nigori*, that is, the turbid, or impure form, of its corresponding surd. They have at times even insisted that all the sonant consonants of the purely Japanese part of the language are only derived from surds; and, although that has seemed impossible to some foreigners, on account of the occurrence of sonants at the beginning of many apparently simple words, we shall see, in the light of some cases at least, the Japanese view is not so wholly inconceivable.

It has sometimes seemed to European students of Japanese that the *nigori* of composition was as inexplicable as it appears to be in our words *hurdy-gurdy*, *hurly-burly* and the like, or that it was a mere matter of the ear, and might be used or not at will. But it will be found that its use depends on the meaning instead of wholly on the ear, and that the Japanese do not, like foreigners, use it indifferently or drop it. In some cases, however, both forms may be allowable, according to difference of meaning or derivation.

The rule in general for purely Japanese words is that the second part of a compound word takes the *nigori*; that is, if beginning with *ch*, *f*, *h*, *k*, *s*, *sh* or *t*, those consonants are changed to the corresponding sonant ones; yet with only a slight preponderance, about 2361 cases against about 2316; and the general rule does not apply: (1) when *b*, *d*, *g*, *j*, *p* or *z* already occurs anywhere in the second part of the compound; nor (2) when the second part is a Chinese word; nor (3) where the word, though given by Hepburn as a compound, is really made up of words in regular grammatical connection (without ellipsis), such as juxtaposed verbal forms, or Chinese words followed by verbal forms denoting doing or

action (*shi*, *suru*, and the like), or words connected by *no* or followed by *to*, *te*, or any of the syllables used for the terminations of verbal forms; and (4) there are 1000 other cases where the *nigori* is not taken against 2220 where it is, or one case out of three.

It is not probably worth while to record here the very numerous words that conform to these general and special rules, but only the much less bulky lists of exceptions to them. The rules are based on a review, made sixteen years ago, of all the words in Hepburn's dictionary, second edition, and some two or three hundred more, in all about 23,000 words; and though an oversight here and there may have taken place, and though his third edition may have added further material, it is hoped that the present results may be exact enough for practical purposes.

In reading the lists it is to be borne in mind that under the general rule *h*, as representing an ancient surd labial, is changed to *b*, or sometimes to *p*, "half *nigori*." – *Hu*, instead of *fu*, would correctly give the pronunciation of Tokio; but at Kiyoto the sound is really *fu*, with the *f* exactly like the English *f*; and Kiyoto, from its central situation and other circumstances, rightly gives the standard for the language in general. – In transliterating (not anglicising), *oo* (like the other vowels) is not used with the same force as most often in English, but to represent two successive, yet not audibly separated, long *o*'s, as each would commonly be called, much like *oo* in *oolite*, *oolitic*, *oological*, *zoological*, *zoophyte*. Such a mode of writing the sound, so far from being an innovation, as some have considered it, is as old as any systematic rule of Japanese transliteration, and was explicitly adopted about two hundred years ago by Kaempfer, and has been in use ever since. – In the lists of exceptions a dash is used to save repetition of the corresponding part of the preceding word.

1. – *B*, *d*, *g*, *j*, *p*, or *z* in the next syllable (363 cases), or any following one (35, in all 398 cases), prevents the *nigori*. The only exception is *amagappa*.

A sonant in the syllable before has no effect on the *nigori* (about 150 words with, and about 150 without).

2. – Compounds with the final part Chinese do not take the *nigori* in about 2090 cases (besides 81 cases where a following *nigori* would have prevented at any rate); but in 287 (about one case in seven) it is taken, namely:

(a) – Where immediately preceded by the letter *n*, in the following 186 cases:

(aa) – All those (131, and excepting one? – *zenhai*, which also has *zempai*) in which *n* in the first part of the compound comes before *h* or *f* in the second, of which 120 change *nh* or *nf* to *mp* (half *nigori*), against the 11 following, which change *nh* or *nf* to *mb*: *Jim-BEN*, *mam* –, *nim* –, *sam* – (4); *SAM-biyaku*, – *bon* (2); *hambitsu*, *hombuku*, *imban*, *kembeki*, *membaku* (5).

(ab) – And the following 55, in which a surd consonant following *n* takes the *nigori* (against 515 in which it does not): Jin-DZUU, yuu– (2); han-GOKU, hon–, kin–, on–, ran–, rin–, san–, sen– (8); en-JA, han–, in–, kan–, sen–, shin– (6); ban-JAKU, en–, on–, ren–, san–, tan– (6); ren-JI, zen– (2); baken-JO, kan–, kin–, nan–, shin– (5); nan-ZAN, rin–, san– (3); EN-doo, –gi (2); HAN-dan, –doo, –zatsu (3); SAN-dzui, –gai, –jiki, –zai, –zashi, –ze, –zen (7); SEN-zankoo, –zen (2); bushinjin, inju, konjiki, manzai, nenjiu, shinzoo, tenden, unjiukitsu, yunzei (9).

(b) – And the following 106 cases: Do-BEI, ishi–, ita–, neri– (4); ashi-BIYOOSHI, ita–, ma–, shira–, te– (5); ue-BOOSOO, uma–, ushi– (3); go-BUKU, imi–, ki– (3); cha-DANSU, choo– (2); ishi-DOOROO, mawari–, taka–, tsuri– (4); boo-DZU, joo– (2); kakure-GA, me–, utsuri–, waki– (4); otoko-GI, utsuri–na, yowa– (3); Ei-GOKU, Futsu–, riyoo– (3); kuchi-GIREI, te– (2); cha-GUWASHI, hi–, midzu– (3); annai-JA, choo–, moo–, ninsoo–, shugiyoo–, uranai– (6); doo-JI, e–, hana–, hashiri–, hei–, too– (6); e-JIKI, kotsu–, moku–, ni–, niku–, so– (6); bareki-JIN, sadai–, sui–, ubai–, yoo– (5); kawai-JO, niroku– (2); gin-ZAIKU, mugiwara–, te– (3); kake-ZAN, kuwa–, menoko–, muna–yoo, nagare–, sa–, tatami–, wari– (8); hei-ZEI, fu–, oo–, sei– (4); atsugan, chiwaganka, doozen, gobatsu, funagassen, fuuzetsu, giyodzui, hatsugoori, hayabikiyaku, koogaku, kajichi, katsudatsu, midzujaku, nezoo, otamajakushi, saguwan, shigedoo, sodegooro, tooguwa, usugesgoo, yakiban, yasejotai, yudoofu (23).

3. – About 670 cases given by Hepburn as compound verbs do not take the *nigori* (besides 148 similar cases where it would be prevented at any rate by a following *nigori* consonant), but in the following 35 cases it is taken, namely: Aomi-DACHI, hooke–, tsure– (3); mamori-DOOSHI, yomi– (2); ike-DORI, tsukami– (2); name-DZURI, sae– (2); karon-JI, sakin–, uton–, yasun– (4); SHI-bari, –buri, –buri, –bomi, –dare, –goki, –gumi, –gure (8); FUM-bari, –batakari (2); degire, iregomi, kikigane, kuribiki, nezame, nibami, oibore, sashigumi, saegiri, tsuibami, ukegai, yasegare (12).

The following 99 words, given by Hepburn as nouns, of which both parts are verbal, take the *nigori* (against 96 that do not): Otoshi-BANASHI, tatoe–, yari– (3); ai-BORE, ne– (2); sukashi-BORI, uki– (2); (aomi-DACHI), are–, suki– (2); ki-DOOSHI, kiri– (2); kiri-DORI, kogiri–ni, oshi–, tsukuri–, uri– (5); sashi-DZUME, tachi– (2); baitori-GACHI, kane–, itsuwari–, okitari–, wasure– (5); kake-GAE, nori– (2); ate-GAI, oshi– (2); kaeri-GAKE, kai–, ki–, nuke–, omoi–ni, tasshi–, tomari–, toori–, yuki– (9); furi-GAKI, hashiri–, hikae–, kiki–, misebi–, nijiri–, nuki–, soe–, tsumori–, wari– (10); (ire-GOMI), ki–, ue– (2); hanare-JINI, kubire–, obore–, tachi–, ue–, yake– (6); mi-ZAME, ne– (2); maki-ZOE, sashi– (2); de-ZOME, kaki–, nori– (3); hanarebanare, harebare, karegare, kiregire, shimijimito,

taedaeni (6); akegure, aibiki, hanarezakari, kakeberi, kakedzukuri, kaigakari, kaigui, kashidzuki, kiribari, machibuse, makigari, midate, mikakedaoshi, namege, nebie, neboke, nedzumai, negaeri, nurigome, okurebuse, okizari, soibushi, tachigare, tachigiki, tachigie, tachigurami, tachigiri, tatakibarai, uttegawashini, waidame, yoigurui, yukidomari (32).

The following 31 cases of Chinese words followed by *shi* or *suru* take the nigori: Benji (dzuru), danji (dzuru), enji (dzuru), gaenji (dzuru), genji (dzuru), hanji (ru, dzuru), henji, junji (ru, dzuru), kenji (dzuru), kunji (ru, dzuru), menji (ru, dzuru), nenji (dzuru), ninji (dzuru), ronji (dzuru), sanji (ru, dzuru), senji (dzuru), shinji (dzuru), sonji (dzuru), soranji (dzuru), tanji (dzuru), tenji (dzuru), zonji (dzuru) (22 ending in *n*); chooji (dzuru), dooji (dzuru), hooji (dzuru), jooji (dzuru), kooji (dzuru), ooji (dzuru), shooji (ru, dzuru), tooji (dzuru) (8 ending in *oo*); ei-ji (dzuru) (1).

The following 11 words compounded with Chinese ones ending in *tsu* and the verbal ending *shi* (*suru*) do not take the nigori: Besshite, esshi, kesshi (shite), kusshi, resshi, sesshi, sosshi, tasshi, tesshi, usshi, zesshi. Also *gese* and *geshi* do not take the nigori. Other Chinese words followed by *shi* (*suru*) are not given as compounds, and are not followed by the nigori.

In about 151 other cases which, though given by Hepburn as compounds, are really words in grammatical connection without ellipsis or contraction, there is no nigori of composition. The six apparent exceptions are: Amanogawa (of which, however, *no*=prairie?), michinobe, nanigana, osoiba, sainogawara, unabara (for “umi no hara”).

Of so-called verbal terminations, the change from a surd to the nigori occurs in: *Ba*, in the so-called conjunctive and conditional forms; *do* and *domo*, in concessive ones; *de*, *dzu*, *ji*, *zaru*, in negative ones; *de*, in affirmative ones where the root ends in *gi*, and the *g* is dropped in contraction, or where *mi* at the end of the root is changed to *n*.

4. – The following 1000 compounds do not take the nigori (against 2220 that do):

(a) – 353 with verbal endings (against 681 that do take the nigori): Charu-mera-FUKI, furo-, hai-, hora-, kane-, midzu-, sorauso- (7); ame-FURI, hire- (2); ei-FUSHI, hire-, (2); chiri-HARAI, kushi-, tsuchi-, yaku- (4); kasa-HARI, joo-nokami, taiko- (3); ami-HIKI, edzu-, fune-michi, ha-, midzu-, momo-, mosa-, yado- (8); ido-HORI, kane- (2); midzu-KAI, tsuchi-, ushi-, yak- (4); fude-KAKE, hara-, hashi-, katana-, koshi-, mae-, me-, midzu-, ron-, te-, sudzu-, yari-, yodare- (13); e-KAKI, hanshita-, hi-, kago-, kai-, kasa-, koshi-, mae-, masu-, meso-, mimi-, mono-, sumi-, te-, to-, beso-kaku (16); kugi-KAKUSHI, me- (2); hana-KAMI, oo-, yak- (3); me-KARI, midzu-, (2); cha-KASHI, gura-, kane-, me- (4); hi-KESHI, sumi- (2); kuchi-KIKI, me-, te- (3); choo-KIRI,

en-, ishi-, kama-, kichak-, kubi-, soba-, shin-, yajiri- (9); cha-KOSHI, midzu-, toshi- (3); miru-KUI, mono-, mushi-, ki-mushi (4); ara-KURE, chobo-, kai-, nani-, o-, saka-, shiraba- (8); ito-KURI, kara-, ta-, wata- (4); ei-SAME, haru-, me-, mura- (4); abura-SASHI, bin-, e-, fuda-, hata-, midzu-, mono-, sumi-, tatami-, tori-, zeni- (11); tadzu-SAWARI, yu- (2); abumi-SHI, e-, fude-, gura-, hata-, ikada-, ikake-, imono-, ireba-, kagami-, kawara-, kazari-, koshaku-, koto-, kusu-, kuji-, makie-, megane-, nage-, nani-ni, nani-ka, nani-oo, nuri-mono-, sashimono-, sato-(se), shiru-, sora-, sugo-, yatsu-, makoto-yakani, tai-ta, nami-suru (32); ato-SHIKI, kana-, kata-, kore-, kura-, naga-, utto-, ya-, za- (9); abura-SHIME, haji-, karo-, midzu-, obi-, soo-, yama- (7); mono-SHIRI, us-, soo-shiranukao (3); dara-SUKE, darani-, fuku-, kumo-, san- (5); goma-SURI, han-, ko-, mimi-, te- (5); kara-TACHI, kit-, kunitoko-, mono- (4); shiro-TAE, uro-, ut-, yoko-, (4); hi-TAKI, meshi- (2); hana-TARE, shio-, shita- (3); hachi-TATAKI, ishi-, ma-, niwa-, shiba- (5); fude-TATE, me-, ya- (3); shito-TOME, sode- (2); akari-TORI, aka-, amma-, ase-, ato-, chiri-, hiyoo-, kaji-, koi-, kuchi-, me-, nomi-, o-, ondo-, sai-, sao-, seki-, shaku- (mushi), shi-, sumi-, sumoo-, tema-, yu-, zoo-, midzutoru-tama, toshi-totta (26); boo-TSUKAI, hebi-, idzuna-, sora- (4); bin-TSUKI, hada-, hi-, kado-, kako-, kane-, ishi-, jin-, ki-, me-, muku-, ne-, shimo-, te- (14); aka-TSUKI, basa-, beta-, biku-, bira-, biri-, bura-, chira-, fu-ai, fuda-, fura-, giro-, gota-, gura-, gudo-, gudzu-, guta-, hiyoro-, iki-, ira-, jara-, ji-, kabi-, kidzu-, kira-, kitsu-, kiyoro-, kome-, kose-, maga-, me-, na-, nawa-, niche-, nura-, otoko-, seka-, sen-, set-, soko-, sowa-, ta-, teratsu-, uka-, uro-, uwa-, kentsuku, shaa-tsuku (48); hana-TSUKURI, niwa-, yumi- (3); cha-TSUMI, na- (2); eishire, eitaore, etoki, fusoroi, futemawari, futsuriai, asakaranu, hanahiri, hoofukurashi, hookamuri, iwotsuri, karisome, kikori, komekame, kotokire, kotokawari, kotosaranu, kototari, kubikukuri, kuchisui, mekuramashi, midzusumashi, midzutamari, midzutame, miotsukushi, mukabaratatsu, nedzumikoroshi, netsusamashi, omohoe, saikaeri, sayofuke, shiohi, shirake, shirokae, shitashimi, shitatame, tadzusae, takumi, takuromi, takuwae, tasuke, tasukari, tekihaki, tesuki, tokoroseki, yatsure, yokotawari, yoosuki, yuusuki, yuusari (50).

(b) – 83 reduplicated words (against 67 with the nigori): chikuchiku, chirachira, chirichiri, chirochiro, chokochocho, furafura, fuwafuwa, hakihaki, haraharato, hatahata, hekoheko, hetahetato, hihi, hirahirato, hirihiri, hitahita, hiyokohiyoko, hiyoro-hiyoroto, hokohoko, horohoro, hotehote, hotohototo, kachikachi, kakukaku, karakara(to), katakata, kechikechi, kirakirato, kirikiri(to), kiyakiya, kiyorokiyoroto, kokekoke, korokoroto, kosekose, kosokoso, kotekote, kunkunto, kurakura, kurukuruto, kushakusha, kusukusuto, kutsukutsuwarau, kuyokuyo, sakusakuto, sarasara(to), sashitsumesashitsume, satemosatemo, satesate, sawasawato, saetsuosaetsu,

sekaseka, sekiseki, sewasewashii, shaashaa, sharisharito, shikashika, shikushiku, shioshioto, shitoshito, sokosokoni, sokusoku, somosomo, soresore, sorosoroto, soosoo, sowasowa(shite), soyosoyoto, surasurato, surusuruto, suyasuyatoneru, takatakayubi, takatakatsuki, tamatama (tamadama), taratarato, teratera, teriteriboodzu, torotoroto, tonton, tootoo, tsukatsuka, tsuratsura, tsurutsuru, tsuyatsuya.

(c) – 34 compounds with adjective endings (against 106 that do take the *nigori*): akarui, anakashiki, aoshiroi, arakuroshii, aramahoshii, furukusai, futokutakamashiki, hashikashii, hinatakusai, ikikusai, ikuhisashii, jimankusai, kashikamashii, katakurushii, kirakirashii, kogarekusai, mimahoshii, mimishii, mudzukashii, musakurushii, semahoshii, shibutoi, shiohayui, shiokarai, sharakusai, shisomonai, shitsukoi, tattoi, tootai, tsumetai, utsukushii, wakawakashii, yofukai, yuyushii, besides others compounded with mahoshii, shii, tai, and toi, which do not appear as separate words.

(d) – 29 juxtaposed words of allied or contrasted meaning: achikochi, anakashiko, atosaki, hirarikururito, iroka, itotake, kagehinata, kakasoso, kakute, karekore, muchakucha, musakusa, norarikurari, norakurato, oyako, sakoso, sosokusato, tokaku, tokoo, tomokakumo, tomokoomo, tonikakuni, tosamakoo-sama, tosenkakusen, toyakakuto, toyakooto, unekune, ushitora, uwoosawoo.

(e) – Also the following 501 words (against 1366 with the *nigori*): a-CHI, ko-, nama-, shira-, so-, idzu- (6); haya-FUNE, hiki-, kawa-, yo- (4); de-HA, ori-, saka-, shira-, yudzuru- (5); naga-HAMA, shio-, yoko-, yoshi- (4); aka-HARA, ato-, hi-, kata-, name-, suki-, ura- (7); kata-HASHI, me- (2); kiza-HASHI, mi-, sori- (3); iri-HI, tobi- (2); kumi-HIMO, uchi- (2); ma-HO, midzu-, tsugi- (3); hanashi-KA, hoshi- (2); kawa-KAMI, kaza-, kome- (3); kiri-KAMI, ori-, shibu- (3); furu-KANE, shiro-, midzu- (3); ai-KASA, matsu-, midzu-, oribetsu-, toshi- (5); ashi-KASE, kubi-, maro-, te- (4); abura-KASU, cha-, soba-, tabe-, tare- (5); ai-KATA, ara-, ato-, de-, fuchi-, funa-, haha-, hake-, hiyooro-, hisa-, idzu-, kari-, kashi-, koshi-, kure-, kawase-, mae-, me-, mi-, moto-, ni-, mochii-, ori-, oya-, sabake-, saki-, sato-, sen-, shiire-, shi-, shitate-, shite-, tana-, tsukai-, uchi-, uma-, ura-, ya-, yu-, yuu- (40); nari-KATACHI, shina- (2); abura-KAWA, atsu- dzura, kata-, ni-, oo-, shibu-, togi-, totsui-, tsukuri-, usu-, uwa- (11); abura-KE, ara- nai, chiri-, hata-, iro-, kawara-, koshi-, midzu-, mukai-, mushi-, nebari-, nigo-, nodo-, oomi-, saku-, shiru-, sori-, tawa-, tsuyu-ki, ubu-, yata- (21); chi-KEMURI, midzu-, uma- (3); kabu-KI, karasu-, kare-, koshi-, kuchi-, kusu-, ma-, maru-, masa-, nadzu-, nama-, nami-, saka-, shira-, taru-, tori-, tsugi-, ubu-, ue-, waka-, yak- (21); arai-KO, arashi-, asu-, dada-, funa-, hari-, haru-, iri-, ishi-, ko-, kumi-, kushi-, mai-, mama-, midzu-, mi-, migaki-, moro-, nama-, ne-, nicha-, nuna-

obo-, shiro-, shiru-, so-, tana-, te-, tera- ya, tori-, tsure-, udon-, uji-, uro-, yak- (35); hiki-KOTO, kata-, mi-, tawa-, uwa-, wabi- (6); ai-KUCHI, de-, ho-, iri-, karu-, kata-, mitsu-, mochi-, muki-, oo-, ore-, sabake-, sode-, tobo-, ure-, uri-, waru-, yatsu-, yoi-, yomi- (20); ashitaka-KUMO, mura-, shira-, yami- (4); kami-KURA, kari-, nama- (3); haya-KUSA, kara-, midzu-, mi-, omo-, saki-, shichi-, some-, to-, ume-, yake- (11); kuchi-KUSE, shi-, te- (3); hana-KUSO, kani-, kana-, me-, mimi-, mune-, mushi- (7); abumi-KUWA, kuro- (2); aka-SAKA, ko- (and kozaka), kudari-, nobori-, tama-, to- (6), akari-SAKI, he-, hoko-, kuchi-, mi-, muna-, te-, toto-, uri-, ya-, yoo- (11); ari-SAMA, akara-ni, ashi-ni, ika-, midai-, mina-, nani-, ne-, ni-, noke-ni, oku-, saka-, saki-, tonoo-, too-koo-, toto-, yoko-, nesan, nisan, obaasan, okamisan, ototsan (22); hi-SAO, kara- (2); ima-SARA, nao- (2); furu-SATO, tori- (2); asa-SE, fuka-, hada-, kugu- (4); saka-SHIMA, te-ishi, yoko- (3); chi-SHIO, ha-, hi-, hiki-, michi-, sashi- (6); kawa-SHIRI, mayu- (2); kawa-SHIMO, kaza- (2); kata-SHIRO, nawa-, toji-, uri- (4); chi-SHIRU, hana- (2); kaze-SHITA, me-, obi- (3); ami-SO, nanori- (2); ao-TA, ara-, are-, fuke-, kawa-, midzu- (6); ko-TACHI, kodomo-, kunitoko-, nan-, omae-, yakunin- (6); ara-TAKA, kuma-, ashi-kumo (3); ari-TAKE (and aridake), hana-, hatsu- (and hatsudake), iwa-, kawa-, kure-, matsu- (and matsudake), mimi-, shii- (9); ara-TAMA, kin-, kuro-, kubi-, midzu- (5); kakobi-TE, hama-, hiki-, hineri-, hon-, ho-, i-, kai-, kara-me-, kara-, kata-, kawariban-, kiri-, kit-, ko-, me-, naka-, nawa-, oi-, oku-, oo-, saka-, saki-, sawa-, sen-, shimo-, shita-, shi-, sho-, tori-, tsukai-, tsuri-, uri-, uwa-, yaki-, yari-, yose- (37); ao-TO, e-, mune- (3); kana-TOKO, niwa- (2); ko-TORI, niwa-, oo- (3); ma-TSUCHI, masa-, neba-, yase- (4); mu-TSUKI, shimo-, sa- (3); kiba-TSUTSU, ko-, motogome-, o-, oo-, tan- (6); han-shita, -toki (2), KARA-kami, -kane, -kasa, (-sao), -sumi (4); KATA-ho, -kana, -sumi, -toki (4); KO-sawa, (-saka and -zaka) (1); MAMA-chichi, -haha, (-ko), -samurai (3); MI-hakase, (-hashi), (-kata), (oo-ke), -koshi, (-koto), -sora, -takara, -tama, (iki- tama), -tarashi, -toohoo, takamikura (8); O-fukuro, -hayoo, -hari, -hiya, -hiyarakashi, -hie, -kan, -ketsu, -tamaya, -tori, (-totsan), (-tsutsu), -tsuyu (11); (OO-kawa), -kimi, (-kuchi), -kurashoo, sawa (3); aburahi, aohiki, aosora, aoto, asahaka, edaha, fusasakura, hakoromo, hanafuyu, inukoro, irotsuya, i(h)e, kamashika, kamisakayaki, katatsumuri, kirikishi, marutoshi, mekao, moro-tomoni, muneto, narisoo, norikumi, okusokonai, orifushi, orihima, ototoi, ototsui, raiharu, sahachi, sahari, satsuhito, shookachi, wakatono, dzukuni, jisaka, midzukame, midzusaki, midzuseki, sabitsue, shattsura, shinobitsuma, shiosu, shiratsura, tobihi, tookarasu, uminechima, ubusuna, yabuka, yobikoe, yohoro, yubukarashi, yumahiko, yurumekusuri (53).

If the complete lists of compounds with the *nigori* and without be carefully examined, it is found that: When the first part indicates the origin, source, cause or the like, possession or ownership, superiority, prevalence, pervasion, inclusion (either physical or ideal or a classifying feature) of the second part, in short domination over it as a subordinate thing, there is no *nigori* of composition. These are the very qualities possessed in English by a substantive following the word *of*, as compared with the one that precedes.

But when those qualities are rather possessed by the following part of the compound, of which the first part indicates a subordinate or a more or less imperfectly, partially, superficially, temporarily, occasionally applying characteristic or feature, there is *nigori*. When, for example, the *nigori* compound has an adjective ending, the first part shows in what respect the quality is meant; and when both parts are verbal forms, the first likewise shows with reference to what the action of the second takes place, instead of there being something else to which both actions concomitantly refer.

It is clear that the *nigori* invariably arises from the disappearance of a sonant consonant, almost always an *n*, and generally the word *no* (of), but sometimes *ni* (in, to, especially in re-duplicated words), sometimes the negative *n* and sometimes other sonants or syllables, as perhaps occasionally *de* (at or with), which appears to be on the same principle a contraction either of *nite* (with, by, in) or of *motte* (having). It can now be understood why the sound *n* is so often heard in colloquial and rustic Japanese before a dental *nigori* and *m* before a labial one, and still oftener the sound *ng* instead of simple *g*. The significance of such sounds is a very strong argument for specially marking them in any system of transliteration in Roman letters; and for writing, say, *Nangasaki* in the time-honored European way, instead of the recent *Nagasaki*. The very existence of the argument, too, is proof that investigations like the present one, though seeming perhaps remote and trivial, may nevertheless have useful bearings upon a question of such pressing importance as the best method of adapting our alphabet to the use of the Japanese.

It is probable that some of the Japanese themselves are not altogether conscious of any difference in meaning, owing to the presence or absence of the *nigori* of composition, or disregard it on account of inability to explain it or formulate it. At any rate the famous spot for the manufacture of porcelain called generally by the Japanese *Kudani* (that is, not nine valleys, as some one has mistakenly imagined, but *Ku-no-tani*, or ninth valley, corresponding to the uncontracted *ichi-no-tani*, first valley, and several other numbered small valleys that with it branch out of a single large one) is in the neighborhood itself called *Kutani*, without the *nigori*. It seems to be an illustration of the fact that the attempts of the partially informed to carry out what they conceive to be

grammatical rules, are often less correct than the unquestioning instinct of the wholly ignorant.

The real significance and character of the word *no*, of such extremely frequent occurrence, is of some interest and consequence. It appears to be the last syllable of the word *mono* (thing); for in Japanese not merely is the last part of a word dropped in derivation, as in many western languages, but it is very common that the first part is dropped; as Mr. E. M. Satow has also remarked (Trans. As. Soc. Jap., VI, 472). The form *no* is very often used after adjective and verbal forms (frequently contracted to simple *n*), with obviously the same meaning as *mono* (thing). It is plain that in the form of the postposition *no* (of) it has in reality the same meaning (thing), and helps to carry out the universal Japanese rule of letting general words precede the particular. If a subordinate feature has to precede, it is brought about through the interposition of the word *no* (that is, *mono*, itself a particularizing word in reference to the foregoing one), in order to make the expression so general that the otherwise principal word may follow as a subordinate, or a possession, or a limiting or defining word. This corresponds well with common idioms in so distant a language as Chinese, and supports the view that even in western languages the possessive and genitive terminations originally had likewise essentially the same meaning (thing).

The rule of the *nigori* in composition helps very much towards tracing the derivation and primitive meaning of many Japanese words. For example, *Tera-shima* would be an island belonging to a temple; whereas *Terajima* would be an island with a temple on it. *Akindo* (trader) is *akinai no hito* (man of trade); *shirooto* (one not skilled in a profession) is *shiro-hito* (man of whiteness); while *kurooto* (one skilled in a profession) is *kuro-hito* (man of blackness). But *kuromboo* (negro) is perhaps *kuro na hito* (a man that has become black or tanned); and likewise *akambo* (baby) is *aka na hito* (red man, but not permanently or fully so); and *shiwambo* (miser) is *shiwa na hito*. It should be remembered that the Japanese *h* in these cases is to be reckoned as a labial. The last syllable of *kaeriji* (return journey), *kawaji* (river road), *mikkaji* (three days' journey), and *kooji* (small streets) is clearly *michi* (road). The first part of *kadzu* or *koodzu* (the paper mulberry) is apparently derived from *kami* (paper). *Koodzuke*, the name of a province, is evidently *Kami-tsuke* (this *kami* meaning upper), corresponding to *Shimo-tsuke* (*shimo* meaning lower), without the *nigori*. *Koobe*, the name of a town, would be *Kami-he* (upper place or dwelling). *Oozaka*, the name of the great city, is *Ooki na saka* (the great steep-road); whereas *Oosaka*, as it is often called, would be *Ooki saka*, nearly the same in meaning, but perhaps differing in the degree of emphasis. The monosyllable *ga*, pronounced *nga*, may be derived from *no ka*, with the *ka* meaning emanation. *Ga*, like *ji* from *michi*, also given as a separate word, and like *de*, already mentioned, is an instance

where the *nigori* begins a word; and it seems not wholly impossible that all the comparatively few cases where purely Japanese words so begin might have some similar explanation, and that the other cases of *nigori*, in the middle of a word, may have arisen from compounding.

The word *hidari* (left hand), often *hindari* in the country, appears to be the direction of the sunrise, *hi no detari*; while *migi* (right hand), often in the country *migiri*, is possibly *miru no o kiri*, or *miru n' kiri*, the direction of the cutting (*kiri*) off of seeing (*miru no*), or sunset; or from *mi kagiri* (limiting of sight); or again from *mi kagiri*, that is, *kami kagiri* (the august setting, or the god's setting). The derivation that has been proposed (As. Soc. Jap., VI, 473) from *nigiri*, to grasp, is rather impossible; for, besides the difficulty of changing *n* to *m* in such a case, the word *nigiri* as a concrete substantive applies to the part of the bow that is grasped, and that with the left hand. The words for left and right in Japan appear, then, to be derived from the position of the sunrise and sunset, with reference to the favorite and ordinary outlook of dwellings there. This would seem to suggest a reasonable and natural explanation why in India the South is reckoned to be on the right hand; not by any worship of the rising sun, such as exists even in Japan, but by the fact, discovered with little camping experience in those tropics, that tents or other dwellings, whenever possible, are made to look towards the east, so as to have the rising sun take off the morning chill, and to be in the shade the rest of the day. It seems to be one of those cases where points in one language are made clear by the investigation of another very distant one.

It is certain that a thorough collation of what may seem very dry Japanese grammatical facts, aside from mere euphonic changes, would lead to the elucidation, not only of the derivation and true meaning of words, but to a better understanding of the structure of the language; so that the acquisition of the tongue could be made easier for future students. It can hardly be doubted, too, that useful light would be thrown in many ways upon the derivations and grammar of our western languages, and on grammar in general. It is highly probable, moreover, that research of that kind would uncover several more or less hidden grammatical features that would guide towards a more satisfactory method than any yet common for the rational and completely practical phonetic adaptation of Roman letters to Japanese, a matter of the greatest moment. But perhaps that might require first the still more needed improvement of the transliteration of Chinese, considering the very large number of words that have been taken from Chinese into Japanese, especially among scholars.

6 Ogura's 1910 Critique

6.1 Background

As mentioned in the Preface, Ogura Shinpei 小倉進平 published a critique of Lyman's 1894 article in 1910. The title of Ogura's article is "Raiman-shi no rendakuron" 「ライマン氏の連濁論」, and it appeared in two parts in *Kokugakuin Zasshi* 『国学院雑誌』 (volume 16, numbers 7 and 8).¹ This is the journal of Kokugakuin University in Tōkyō, originally founded in 1882 as private educational institute for research on Shintō.² An English translation of Ogura's critique follows. The notes are all additions; there are no footnotes or endnotes in Ogura's Japanese text. Romanizations and English glosses have been added for the Japanese words that Ogura cites as examples. They appear only in Japanese orthography in his original text.

6.2 Ogura 1910

Lyman's Essay on Rendaku

Ogura Shinpei

In 1894, Benjamin Smith Lyman published a 17-page pamphlet called "The Change from Surd to Sonant in Japanese Compounds." This pamphlet is an expanded version of a paper called "The Japanese Nigori of Composition," which he delivered at the 1883 meeting of the American Oriental Society. A copy of the pamphlet was donated to the Tōkyō University library this year, and Prof. Fujioka lent it to me and asked me to review it.³ Since outsiders sometimes observe things that Japanese do not notice, Lyman's pamphlet deserves attention. Although there are several respects in which Lyman seems not to have fully grasped characteristics of the Japanese language, it must be said that his presentation is meticulous. Here, I will present the points he makes one by one and add my own comments about things that I have noticed.

The first point Lyman makes is:

At the beginning of the second part of very many Japanese compound words the surds *ch*, *f*, *h*, *k*, *s*, *sh* and *t* are changed to sonants.⁴ The Japanese . . . have at times even insisted that all the sonant consonants of the purely Japanese part of the language are only derived from surds; and, although that has seemed impossible to some foreigners, on account of the occurrence of sonants at the beginning of many apparently simple words, we shall see, in the light of some cases at least, the Japanese view is not so wholly inconceivable.

[Lyman 1894:160]⁵

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The claim that all voiced obstruents have developed from voiceless ones has been vigorously advanced by Ishigane Otonushi and others, and we can speculate about this theoretically, but on the basis of the indications in texts, it seems to me that we have to recognize that Japanese has had both voiced and voiceless obstruents since ancient times.⁶ (I will not go into this issue here, since it would be a digression.)

Next, Lyman says:

It has sometimes seemed to European students of Japanese that the *nigori* of composition was as inexplicable as it appears to be in our words *hurdy-gurdy*, *hurly-burly* and the like, or that it was a mere matter of the ear, and might be used or not at will. But it will be found that its use depends on the meaning instead of wholly on the ear, and that the Japanese do not, like foreigners, use it indifferently or drop it. In some cases, however, both forms may be allowable, according to difference of meaning or derivation.

[Lyman 1894:160–161]

Here, Lyman is laying the groundwork for the several regularities that he goes on to propose.

Lyman continues:

The rule in general for purely Japanese words is that the second part of a compound word takes the *nigori*; that is, if beginning with *ch*, *f*, *h*, *k*, *s*, *sh* or *t*, those consonants are changed to the corresponding sonant ones; yet with only a slight preponderance, about 2361 cases against about 2316; and the general rule does not apply [in the following four cases]⁷ . . .

[Lyman 1894:161]

Lyman gives copious examples, and he notes that he checked a total of 23,000 words, including all the entries in the second edition of Hepburn's *Japanese and English Dictionary* and two or three hundred other words.⁸ Lyman adds that while he may have missed a few words, his examples should be sufficient for drawing general conclusions. I will now consider each of the four conditions that Lyman mentions.

- (1) [In the second part of the compound] [e.g., *kaze* in the case of *aki-kaze* 秋風 'autumn wind'] *B*, *d*, *g*, *j*, *p* or *z* in the next syllable [ze in the case of *kaze*] (363 cases), or any following one [e.g., the *gi* in *kasegi* in the case of *ara-kasegi* 荒稼ぎ 'raking it in'] (35, in all 398 cases), prevents the *nigori* [as in the *ka* of *kaze* or *kasegi*]. The only exception, is *amagappa* [*ama-gappa* 雨合羽 'rain cloak'].⁹ A sonant in the syllable before has no effect on the *nigori* (about 150 words with, and about 150 without). [Lyman 1894:162]

The word that Lyman cites as an exception to his first condition is *ama-gappa*. He treats the medial *p* in this word as a voiced obstruent, but this classification is based on the ideas of national learning scholars and is not appropriate.¹⁰ Be that as it may, this condition really does identify a constraint on *rendaku*. Lyman does

not provide examples, but as far as I have been able to determine, there seem to be hardly any exceptions. For example:

(voiced obstruent in 2nd syllable of 2nd element)¹¹

aka-hige 赤髯 ‘red beard’
ke-suji 毛筋 ‘hair fiber’
ko-kubi 小首 ‘small neck’ (‘head’)
suri-kizu 磨疵 ‘scrape wound’
chikara-kobu 力瘤 ‘strength lump’ (‘biceps’)
tori-kago 鳥籠 ‘bird cage’
hito-kazu 人数 ‘person number’ (‘number of people’)
ao-sudare 青簾 ‘green blinds’
shita-tsuzumi 舌鼓 ‘tongue clicking’
ji-hibiki 地響 ‘ground rumbling’
te-tsuzuki 手続 ‘hand continuation’ (‘procedure’)

(voiced obstruent in 3rd syllable of 2nd element)

ada-kurabe 仇競 ‘enemy comparing’ (‘pointless competition’)
ai-kotoba 合詞 ‘pass-word’
iwa-tsutsuji 岩躑躅 ‘rock azalea’
juzu-tsunagi 珠数繫 ‘bead connection’ (‘tying in a row’)
kawa-yanagi 河柳 ‘river willow’¹²
tsuchi-hakobi 土運 ‘earth moving’
inu-fusegi 犬防 ‘dog barrier’
oya-shirazu 不知親 ‘parent unknown’ (‘wisdom tooth’)

These examples show present-day standard pronunciation. In Hepburn’s dictionary, which was compiled forty or fifty years ago, there are words listed that do not seem correct to us today, and it could be that *rendaku* now is considerably different from *rendaku* at that time or at even earlier times. With this in mind, I investigated *rendaku* in *Kojiki* and *Nihon-shoki*, and the results indicate that *rendaku* operated in essentially the same way.¹³ For example:

(*Kojiki*)¹⁴

aka-kagati 赤-加賀智 ‘red lantern-plant’
una-kabusi 宇那-加夫斯 ‘neck tilting’
kamu-kaze 加牟-加是 ‘divine wind’
kanatwo-kage 加那斗-加宜 ‘gate shadow’
opo-sazaki 意富-佐邪岐 ‘large wren’
hitomoto-suge 比登母登-須宜 ‘single sedge’
kwo-suzu 古-須受 ‘small bell’
nipa-suzume 爾波-須受米 ‘garden sparrow’
hana-tatibana 波那-多知婆那 ‘flowering citrus’
sirwo-tadamuki 斯漏-多陀牟岐 ‘white arm’
moto-turugi 母登-都流藝 ‘original sword’
kamu-pogi 加牟-菩岐 ‘divine celebrating’¹⁵

(Nihon shoki)

ame-kanabata 阿梅-箇儼麼多 'heavenly loom'
yaswo-kage 椰蘇-訶礙 'many shadows'
aka-kagati 阿箇-箇鵝知 'red lantern-plant'
hi-kage 比-舸礙 'sun shade (vine)'
kamu-kaze 柯武-柯噬/伽傘-伽噬 'divine wind'
kanatwo-kage 訶那杜-加礙 'gate shadow'
aka-padaka 阿箇-潘娜我 'stark nakedness'
wo-takyebwi 烏-多稽眉/烏-多鷄糜 'masculine shouting'
hana-tatibana 波那-多智麼那 'flowering citrus'
sirwo-tadamuki 辭漏-多娜武枳 'white arm'
ta-kuziri 多-衢餌離 'hand scooping'
momo-tarazu 毛々-多羅儒 'hundred lacking' ('eighty')
una-kudari 于那-俱娜梨 'sea descent'
ama-sibwi 阿摩-之彌 'sweet tuna'(?)¹⁶

(In the parentheses after each word on the two lists just above, I have added the number of the volume in which it appears in the source that I used – *Kojiki-den* for examples from the *Kojiki* and *Nihon shoki tsūshaku* for examples from the *Nihon shoki*.)¹⁷

(2) Compounds with the final part Chinese do not take the *nigori* in about 2090 cases (besides 81 cases where a following *nigori* would have prevented at any rate); but in 287 (about one case in seven) it is taken, namely:

(a) – Where immediately preceded by the letter *n*, in the following 186 cases:

(aa) – All those (131, and excepting one? – *zenhai*, which also has *zempai* [*zen-pai-zen-hai* 前輩 'previous cohort']¹⁸) in which *n* in the first part of the compound comes before *h* or *f* in the second, of which 120 change *nh* or *nf* to *mp* (half *nigori*), against the 11 following, which change *nh* or *nf* to *mb*: . . . *nim-ben* [*nin-ben* 人偏 'person radical'] . . . *kembeki* [*ken-beki* 痲癖 'cramp trait' ('shoulder stiffness')], *membaku* [*men-baku* 面縛 'face binding' ('crime detection')] . . .

[Lyman 1894:162–163]

Leaving aside for now the mistake of treating *p* as a voiced obstruent, it does not seem possible to say for sure when *mp* will occur and when *mb* will occur. The elements *hai* 杯 'cup', *hō* 砲 'gun', and *hō* 宝 'treasure' begin with *h* when they occur as separate words, and words such as *kin-pai* 金杯 'gold cup', *san-pō* 山砲 'mountain gun', and *chin-pō* 珍宝 'rare treasure' make it look as if *h* turns into *p*. But *h* in the elements *haku* 白 'speaking', *hō* 宝 'treasure', and *hei* 餅 'rice-cake' turns into *b* in words such as *kan-baku* 関白 'entrusting and speaking' ('chief advisor'), *san-bō* 三宝 'three treasures', and *sen-bei* 煎餅 'toasted rice' ('rice cracker').¹⁹

(ab) – And the following 55, in which a surd consonant following *n* takes the *nigori* (against 515 in which it does not): . . . *kin-goku* [近国 'neighboring country'] . . . *en-ja* [縁者 'related person'] . . . *nan-jo* [難所 'difficult place'] . . . *handan* [半端 'half cloth-roll'] . . . *man-zai* [万歳 'myriad years'] . . .

[Lyman 1894:163]

Lyman is presumably citing these examples as cases involving voiceless obstruents other than labials (*h* and *f*). In these cases too, it is not possible to find a consistent rule for *rendaku*.

- (b) – And the following 106 cases: Do-bei [土塀 ‘earthen wall’] . . . uranai-ja [卜者 ‘soothsaying person’] . . . doo-ji [*dō-ji* 童子 ‘young child’] . . . niku-jiki [肉食 ‘meat eating’] . . . fuuzetsu [*fū-zetsu* 風説 ‘floating rumor’] . . . tooguwa [*tō-ga* 冬瓜 ‘winter melon’] . . . usugesahoo [*usu-geshō* 淡化粧 ‘thin makeup’] . . .
[Lyman 1894:163–164]

Among these examples, however, Lyman includes words such as *me-ga* 牝鹿 ‘female deer’, *utsuri-ga* 移香 ‘lingering scent’, *kakure-ga* 隱家 ‘refuge house’, and *hana-ji* 鼻血 ‘nose-bleed’, and it is a serious error to classify *ka* 鹿 ‘deer’, *ka* 香 ‘scent’, *ka* 家 ‘house’, and *chi* 血 ‘blood’ as Sino-Japanese.

- (3) [a] About 670 cases given by Hepburn as compound verbs do not take the *nigori* (besides 148 similar cases where it would be prevented at any rate by a following *nigori* consonant), but in the following 35 cases it is taken, namely: Aomi-dachi [*aomi-datsu* 青み立つ ‘green-become’ (‘to turn green’)] . . . yomi-dooshi [*yomi-dōsu* 読み通す ‘read-pass’ (‘to read through’)] . . . ike-dori [*ike-doru* 生捕る ‘live-catch’ (‘to catch alive’)] . . . kuri-biki [*kuri-biku* 繰引く ‘reel-pull’ (‘to retreat’)], ne-zame [*ne-zameru* 寝覚る ‘sleep-awaken’ (‘to wake up’)] . . .²⁰
[Lyman 1894:164]

Lyman’s inclusion of words such as *shibaru* 縛る ‘to bind’, *shibomu* 萎む ‘to wilt’, *shigureru* 時雨れる ‘to rain off and on’, and *shiboru* 絞る ‘to wring’ in the compound verb category presumably reflects some particular notions about their etymologies, but it seems unjustified.

- [b] The following 99 words, given by Hepburn as nouns, of which both parts are verbal, take the *nigori* (against 96 that do not): Otoshi-banashi [落とし話 ‘drop- speaking’ (‘story with a punchline’)] . . . kiri-dooshi [*kiri-dōshi* 切り通し ‘cut-passing’ (‘cut road’)] . . . hashiri-gaki [走り書き ‘run-writing’ (‘scribbling’)] . . . obore-jini [溺れ死に ‘drown-dying’ (‘death by drowning’)] . . . nori-zome [乗り初め ‘board-beginning’ (‘first ride’)] . . . tachigare [立ち枯れ ‘stand-withering’ (‘withering while standing’)] . . . [Lyman 1894:164]

Among these examples in [b] are many that need not be distinguished from the compound verbs on the preceding list [a].²¹

- [c] The following 31 cases of Chinese words followed by *shi* or *suru* take the *nigori*: Benji (dzuru)²² [*ben-zuru* 弁ずる ‘to distinguish’²³], danji (dzuru) [*dan-zuru* 談ずる ‘to discuss’], enji (dzuru) [*en-zuru* 演ずる ‘to perform’], **gaenji** (dzuru) [***gaen-zuru*** 肯んずる ‘to assent’], genji (dzuru) [*gen-zuru* 減ずる ‘to subtract’], hanji (ru, dzuru)²⁴ [*han-zuru* 判ずる ‘to judge’], henji (ru, dzuru) [*hen-zuru* 変ずる ‘to change’], junji (ru, dzuru) [*jun-zuru* 準ずる ‘to be proportionate’], kenji (dzuru) [*ken-zuru* 献ずる ‘to offer’], kunji (ru, dzuru) [*kun-zuru* 薰ずる ‘to be fragrant’], or *kun-zuru* 訓ずる ‘to read as a native word’], menji (ru, dzuru) [*men-zuru* 免ず

る 'to exempt', nenji (dzuru) [*nen-zuru* 念ずる 'to pray'], ninji (dzuru) [*nin-zuru* 任ずる 'to appoint'], ronji (dzuru) [*ron-zuru* 論ずる 'to argue'], sanji (ru, dzuru) [*san-zuru* 散ずる 'to disperse', or *san-zuru* 参ずる 'to go; to come'], senji (dzuru) [*sen-zuru* 煎ずる 'to decoct'], shinji (dzuru) [*shin-zuru* 信ずる 'to believe'], sonji (dzuru) [*son-zuru* 損ずる 'to damage'], **soranji** (dzuru) [***soran-zuru*** 暗んずる 'to memorize'], tanji (dzuru) [*tan-zuru* 歎ずる 'to lament', or *tan-zuru* 弾ずる 'to pluck'²⁵], tenji (dzuru) [*ten-zuru* 転ずる 'to alter'], zonji (dzuru) [*zon-zuru* 存ずる 'to know'], (22 ending in n); chooji (dzuru) [*chō-zuru* 長ずる 'to grow'], dooji (dzuru) [*dō-zuru* 動ずる 'to be moved'], hooji (dzuru) [*hō-zuru* 焙ずる 'to roast'²⁶], jooji (dzuru) [*jō-zuru* 乗ずる 'to take advantage'], kooji (dzuru) [*kō-zuru* 高ずる 'to grow serious'], ooji (dzuru) [*ō-zuru* 応ずる 'to respond'], shooji (ru, dzuru) [*shō-zuru* 生ずる 'to produce'], tooji (dzuru) [*tō-zuru* 投ずる 'to cast'], (8 ending in oo); ei-ji (dzuru) [*ei-zuru* 詠ずる 'to recite', or *ei-zuru* 映ずる 'to be reflected'], (1). [Lyman 1894:165]

I have highlighted two examples on this list (***gaen-zuru*** and ***soran-zuru***) because they are mistakenly classified as Sino-Japanese. We can cite additional examples such as:

(Sino-Japanese element ending in n)²⁷

kan-zu 勘ず 'to torture'²⁸
kin-zuru 禁ずる 'to prohibit'
kan-zuru 観ずる 'to observe'
kon-zu 困ず 'to have trouble'
kon-zuru 混ずる 'to mix'
jun-zuru 准ずる 'to be proportionate'³⁰
sen-zu 先ず 'to be ahead'
chin-zuru 陳ずる 'to state'
nan-zuru 難ずる 'to criticize'
man-zuru 慢ずる 'to ridicule'

kan-zuru 感ずる 'to feel'
gin-zuru 吟ずる 'to chant'
kun-zuru 燻ず 'to smolder'²⁹
go-ran-zu 御覧ず 'to look'
jun-zuru 殉ずる 'to sacrifice one's life'
sen-zuru 選ずる 'to select'³¹
dan-zuru 断ずる 'to conclude'
ten-zuru 点ずる 'to ignite'
ben-zuru 弁ずる 'to speak'³²
en-zuru 怨ずる 'to show resentment'

(Sino-Japanese element ending in ō)

kō-zuru 講ずる 'to lecture'
kō-zuru 葬ず 'to die'
chō-zu 牒ず 'to notify'
dō-zuru 同ずる 'to agree'
bō-zuru 忘ずる 'to forget'
hō-zuru 崩ず 'to die'
hō-zuru 封ず 'to grant a fief'

kyō-zuru 興ずる 'to amuse oneself'
shō-zuru 請ずる 'to invite'
chō-zuru 諜ずる 'to reconnoiter'
hō-zuru 報ずる 'to report'
fū-zuru 封ず 'to seal'³³
hō-zuru 奉ずる 'to obey'

(Sino-Japanese element ending in i)

mei-zuru 命ずる 'to order'

In every one of the examples ending in *-zu(ru)* cited so far, the Sino-Japanese element is one syllable. As the following examples show, when the Sino-Japanese element is two syllables, *rendaku* never occurs.³⁴

eki-suru 役する 'to conscript'
kai-suru 会する 'to gather'
geki-suru 激する 'to get excited'

gai-suru 害する 'to injure'
geki-suru 檄する 'to harangue'
sai-suru 際する 'to encounter'

teki-suru 敵する ‘to antagonize’
hai-suru 配する ‘to arrange’
hai-suru 廢する ‘to abolish’
hai-suru 排する ‘to exclude’
bai-su 陪す ‘to accompany’
koku-suru 哭する ‘to wail’
shaku-suru 釈する ‘to explain’
shuku-suru 宿する ‘to lodge’
juku-suru 熟する ‘to ripen’
shoku-suru 蝕する ‘to eclipse’
zoku-suru 属する ‘to belong’
tai-suru 対する ‘to face’
tai-suru 帶する ‘to wear’
taku-su 磔す ‘to crucify’
chaku-suru 着する ‘to don’
baku-suru 縛する ‘to bind’
haku-suru 博する ‘to gain’
fuku-suru 服する ‘to submit’
boku-suru トする ‘to divine’
yaku-suru 約する ‘to promise’
yaku-suru 扼する ‘to dominate’
roku-su 勒す ‘to control’

teki-suru 適する ‘to suit’
hai-suru 背する ‘to turn one’s back’³⁵
hai-suru 拝する ‘to worship’
bai-suru 倍する ‘to double’
oku-suru 臆する ‘to be afraid’³⁶
koku-suru 刻する ‘to carve’
jaku-suru 寂する ‘to die’
shuku-suru 祝する ‘to celebrate’
shoku-suru 食する ‘to eat’
shoku-suru 囑する ‘to request’
zoku-suru 賊する ‘to damage’
tai-suru 体する ‘to obey’
taku-su 謫す ‘to exile’
daku-suru 諾する ‘to assent’
toku-suru 督する ‘to lead’
baku-suru 駁する ‘to rebut’
fuku-suru 伏する ‘to bow down’
fuku-suru 復する ‘to return’
moku-suru 黙する ‘to keep silent’
yaku-suru 訳する ‘to translate’
roku-suru 録する ‘to record’

In fact, even among examples with a one-syllable Sino-Japanese element, quite a number do not show *rendaku*. Compare the following, which suggest that there is no fixed rule for predicting which words will have *rendaku* and which words will not.

(i) (Sino-Japanese element ending in *a*)

ka-suru 嫁する ‘to marry’
ka-suru 化する ‘to transform’
ka-suru 課する ‘to levy’
ga-suru 臥する ‘to bow down’
sha-su 舍す ‘to lodge’
sha-suru 謝する ‘to thank’
ha-suru 派する ‘to dispatch’

ka-suru 架する ‘to suspend’
ka-su 和す ‘to harmonize’
ka-suru 科する ‘to impose’
za-suru 座する ‘to sit’
sha-suru 瀉する ‘to have diarrhea’
ha-suru 破す ‘to break’
wa-suru 和する ‘to harmonize’

(ii) (Sino-Japanese element ending in *i*)

ki-suru 帰する ‘to attribute’
ki-suru 期する ‘to expect’
gi-suru 議する ‘to discuss’
shi-suru 弑す ‘to murder’³⁷
ji-su 次す³⁸
hi-suru 比する ‘to compare’
hi-suru 秘する ‘to conceal’

ki-suru 記する ‘to write’
gi-suru 擬する ‘to imitate’
shi-suru 死する ‘to die’
ji-suru 辞する ‘to resign’
ji-suru 治する ‘to cure’
bi-su 尾す ‘to follow’
ri-suru 利する ‘to profit’

(iii) (Sino-Japanese element ending in *u*)

gu-suru 具する 'to possess'
fu-suru 付する 'to attach'³⁹

fu-suru 附する 'to attach'
fu-suru 賦する 'to compose'

(iv) (Sino-Japanese element ending in *e*)

ge-su 解す 'to understand'

(v) (Sino-Japanese element ending in *o*)

gyo-suru 御する 'to manage'
sho-suru 処する 'to behave'
sho-suru 書する 'to write'
jo-suru 序する 'to write a preface'
jo-suru 除する 'to divide'
do-suru 度する 'to redeem'

ko-suru 鼓する 'to drum'
sho-suru 署する 'to sign'
jo-suru 叙する 'to confer'
so-su 蘇す 'to come back to life'
to-suru 賭する 'to risk'
ho-suru 補する 'to appoint'

(vi) (Sino-Japanese element ending in *n*)

kan-suru 姦する 'to rape'
kan-suru 爛する 'to heat (saké)'
kan-suru 関す 'to concern'
kan-suru 管する 'to govern'
ken-suru 検する 'to investigate'
kon-su 根す 'to be rooted'
san-suru 算する 'to count'
san-su 讃す 'to praise'
sen-suru 選する 'to select'
sen-suru 僭する 'to behave boastfully'
jīn-suru 陣する 'to encamp'
ton-suru 屯する 'to gather'
fun-suru 扮する 'to play the role'

kan-suru 緘する 'to close'
kan-su 間す 'to estrange'
kan-suru 冠する 'to crown'
gun-su 軍す 'to encamp'
kon-suru 婚する 'to marry'
san-suru 産する 'to produce'
san-suru 贊する 'to agree'
zan-suru 讒する 'to slander'
sen-suru 宣する 'to declare'
son-suru 存する 'to exist'
den-su 殿す 'to bring up the rear'
han-suru 反する 'to go against'
men-suru 面する 'to face'

(vii) (Sino-Japanese element ending in what Lyman calls *ō*)

yō-suru 夭する 'to die young'
kō-suru 抗する 'to resist'
gō-suru 号する 'to name'
kyō-suru 拱する 'to fold one's arms'
kō-su 候す 'to serve'⁴¹
sō-suru 相する 'to judge'
shō-suru 賞する 'to commend'
shō-suru 称する 'to designate'
shō-suru 頌する 'to extol'
sō-suru 奏する 'to perform'
chō-suru 徴する 'to solicit'
chō-suru 朝する 'to bring tribute'
rō-suru 勞する 'to labor'⁴²
ryō-suru 領する 'to dominate'

yō-suru 要する 'to require'⁴⁰
kō-suru 航する 'to voyage'
kyō-suru 供する 'to offer'
kyō-suru 梟する 'to expose (a severed head)'
sō-suru 草する 'to draft'
zō-suru 蔵する 'to own'
shō-suru 誦する 'to recite'
shō-suru 証する 'to certify'
shō-suru 消する 'to vanish'
tō-suru 党す 'to make common cause'
chō-su 寵する 'to favor'
chō-suru 弔する 'to mourn'
ryō-su 涼す⁴³
rō-suru 弄す 'to resort to'

(viii) (Sino-Japanese element ending in what Lyman calls *i*; actually the diphthong *ei* or the long vowel *ē*)⁴⁴

<i>kei-suru</i> 刑する ‘to inflict punishment’	<i>kei-suru</i> 敬する ‘to honor’
<i>kei-suru</i> 慶する ‘to congratulate’	<i>kei-suru</i> 啓する ‘to humbly say’
<i>sei-suru</i> 制する ‘to control’	<i>sei-suru</i> 製する ‘to manufacture’
<i>sei-suru</i> 征する ‘to chastise’	<i>tei-suru</i> 呈する ‘to present’
<i>nei-suru</i> 佞する ‘to flatter’	<i>hei-suru</i> 聘する ‘to invite’
<i>hei-su</i> 嬖す ‘to dote’ ⁴⁵	<i>mei-suru</i> 瞑する ‘to close (one’s eyes)’
<i>rei-suru</i> 令する ‘to order’	<i>rei-suru</i> 隸する ‘to serve’

(ix) (Sino-Japanese element ending in *ū*)

<i>kyū-suru</i> 給する ‘to supply’	<i>kyū-suru</i> 窮する ‘to get into difficulty’
<i>shū-suru</i> 修する ‘to master’	<i>chū-suru</i> 誅す ‘to execute’
<i>chū-suru</i> 註する ‘to annotate’	<i>chū-suru</i> 中する ‘to follow the middle of the road’
<i>chū-suru</i> 沖する ‘to rise high’	<i>jū-suru</i> 住する ‘to reside’
<i>fū-suru</i> 諷する ‘to insinuate’	

Comparing these examples to those with *rendaku*, which were given earlier, the initial consonant of the verb *su(ru)* ‘to do’ is voiced in some cases and voiceless in other cases when it combines with a Sino-Japanese element in category (vi), category (vii), or category (viii), although the number of words varies. In categories (i)–(v), it is not possible to find a single example that has *rendaku*. (I will take up category (ix) later.) The reason *su(ru)* does not become *zu(ru)* following an element that ends in a short vowel is that the vowel at the end of such a one-syllable Sino-Japanese element (or a two-syllable Sino-Japanese like the one in *eki-suru* 役する ‘to conscript’, *gai-suru* 害する ‘to injure’, etc.) unquestionably has greater power than the long vowel in examples such as *kō-zuru* 講ずる ‘to lecture’, *dō-zuru* 同ずる ‘to agree’, etc. If this strong vowel has to be followed either by *s* or by *z*, which will it be? It seems clear that it will be *s*. A vowel is accompanied by vocal cord vibration, and *z* requires vocal cord vibration as well (and there seems to be a pause between the vowel and the *s* or *z*). Thus, once a vowel is produced, the same vibration action has to be repeated if *z* is the immediately following sound, and this requires considerable effort. In the examples in categories (i)–(v), the vowel at the end of the Sino-Japanese element is very strong, has a comparatively abrupt beginning and end, and makes it easy for the vocal cord vibration to cease. If such a vowel has the power to influence the sound that comes next, it is the element meaning ‘to do’ that will be affected in these examples, and rather than producing *z* it seems much easier to leave the voiceless sound (*s*). In contrast, when the Sino-Japanese element has a long vowel, this vowel has less power than a short vowel and the pause that follows the vowel seems to be longer. Consequently, the energy of the vowel does not extend into the element meaning ‘to do’, and this means that pronouncing *s* does not involve a major reduction in effort. This is

presumably the reason that some of the examples in categories (vi)–(ix) have *s* and others have *z*. The examples in category (ix) have a Sino-Japanese element ending in a long vowel and therefore should be treated in the same way as the examples in categories (vii) and (viii).

There are, however, cases in which one compound has *s* and another has *z* even though the Sino-Japanese elements involved have exactly the same pronunciation. Examples of this kind include *kan-suru* 緘する ‘to close’ vs. *kan-zuru* 感ずる ‘to feel’, *kan-suru* 関する ‘to concern’ vs. *kan-zuru* 観ずる ‘to observe’, and *shō-suru* 賞する ‘to commend’ vs. *shō-zuru* 生ずる ‘to produce’.⁴⁶ What might account for these cases? There do not seem to be any differences in vowel length, and accent does not seem to play any role, so there does not seem to be any clear explanation. Examples such as *gen-zuru* 減ずる ‘to subtract’ vs. *ken-suru* 検する ‘to investigate’, *dō-zuru* 同ずる ‘to agree’ vs. *tō-suru* 党する ‘to make common cause’, and *zon-zuru* 存ずる ‘to know’ vs. *son-suru* 存する ‘to exist’ make it appear as if the *s* or *z* in the element meaning ‘to do’ is determined by whether the initial consonant in the Sino-Japanese element is voiced or voiceless. But this rule does not hold, since there are also examples such as *gin-zuru* 吟ずる ‘to chant’ vs. *kin-zuru* 禁ずる ‘to prohibit’, *dan-zuru* 談ずる ‘to discuss’ vs. *tan-zuru* 嘆ずる ‘to deplore’, and *ben-zuru* 弁ずる ‘to speak’ vs. *hen-zuru* 変ずる ‘to change’. It may well be that each era in the past had its own customary pronunciations of sound combinations and that speakers in each period consistently conformed to those regularities, but we today use a mixture of all those pronunciations, and presumably this is why no rule seems to hold.

[d] The following 11 words compounded with Chinese ones ending in *tsu* and the verbal ending *shi* (*suru*) do not take the *nigori*: *Besshite* [*bes-shite* 別して ‘especially’],⁴⁷ *esshi* [*es-suru* 謁する ‘to have an audience’], *kesshi* (*shite*) [*kes-suru* 決する ‘to determine’], *kusshi* [*kus-suru* 屈する ‘to yield’], *resshi* [*res-suru* 列する ‘to attend’], *sesshi* [*ses-suru* 摂する ‘to act in place of’ or *ses-suru* 接する ‘to touch’], *sosshi* [*sos-su* 率す ‘to command’], *tasshi* [*tas-suru* 達する ‘to attain’], *tesshi* [*tes-suru* 徹する ‘to pierce’], *usshi* [*us-suru* 鬱する ‘to become depressed’], *zesshi* [*zes-suru* 絶する ‘to be beyond’]. Also *gese* [*ge-seru* 解せる ‘can understand’]⁴⁸ and *geshi* [*ge-su* 解す ‘to understand’] do not take the *nigori*. Other Chinese words followed by *shi* (*suru*) are **not given as compounds**, and are not followed by the *nigori*.

[Lyman 1894:165; emphasis added]

In addition to these, we can find words such as *kas-suru* 渴する ‘to get thirsty’, *gas-suru* 合する ‘to join’, *kas-suru* 喝する ‘to scold’, *kes-suru* 結する ‘to conclude’, *sas-suru* 察する ‘to perceive’, *shis-suru* 失する ‘to lose’, *shis-suru* 叱する ‘to scold’, *shis-suru* 執する ‘to take on’, *ses-suru* 接する ‘to touch’, *ses-suru* 摂する ‘to act in place of’, *ses-suru* 節する ‘to economize on’, *das-suru* 脱する ‘to escape from’, *tes-suru* 撤する ‘to withdraw’, *nes-suru* 熱する ‘to heat’, *has-suru* 発する ‘to emit’, *bas-suru* 罰する ‘to punish’, *his-suru* 必する ‘to be inevitable’, *ris-suru*

律する ‘to judge’. The examples Lyman presents in this paragraph are all pronounced with the so-called moraic obstruent.⁴⁹ If we separate each Sino-Japanese element from *suru* and pronounce it alone, it will end with *tsu*, but as long as we are pronouncing compounds such as *kas-suru* 渴する ‘to get thirsty’ and *sas-suru* 察する ‘to perceive’, the letter that otherwise represents *tsu* in kana spelling does not represent *tsu*.⁵⁰ The final syllable of the Sino-Japanese element takes on the same place of articulation as the following *s*, and the place of articulation of the moraic obstruent in these compounds therefore must be the same as that involved in the production of *s*. A person who says *tsu* as a way of referring to the moraic obstruent has been misled by conventional Japanese orthography. There are both Japanese and foreigners who have fallen into this trap. Thus, to describe the relevant compounds more clearly, we should say that the *tsu* at the end of a Sino-Japanese element that combines with the verb *su(ru)* turns into the moraic obstruent. It is difficult to understand the point of citing *ge-su* 解す ‘to understand’ here; it belongs in the category of examples that Lyman describes as “not given as compounds.”

It is important to realize that even Sino-Japanese elements ending with *tsu* do not follow the rule about *tsu* becoming the moraic obstruent in examples such as *hattatsu-suru* 発達する ‘to progress’, *ribetsu-suru* 離別する ‘to separate’, and *haietsu-suru* 拝謁する ‘to have an audience’. In these examples, the element ending with *tsu* is combined with a preceding element, and the connection between the Sino-Japanese portion and *su(ru)* is not strong enough to form a compound. As we have seen, *su(ru)* retains *s* when the *tsu* at the end of a Sino-Japanese element does become the moraic obstruent. I think we can explain this on the basis of Lyman’s observation [quoted above] that *zu(ru)* occurs in combinations with a Sino-Japanese element ending in *n*, *ō*, or *ei*.

[e] In about 151 other cases which, though given by Hepburn as compounds, are really words in grammatical connection without ellipsis or contraction, there is no *nigori* of composition. The six apparent exceptions are: Amanogawa [*ama-no-gawa* 天の河 ‘Milky Way’] (of which, however, *no* = prairie?), michinobe [*michi-no-be* 道の辺 ‘side of the road’], nanigana [*nani-ga-na* 何がな ‘something (desired)’], osoiba [*osoi-ba* 齧⁵¹ ‘overlapping tooth’], sainogawara [*sai-no-gawara* 賽の河原 ‘Children’s Limbo’], unabara [*u-na-bara* 海原 ‘the wide sea’] (for “umi no hara”).⁵² [Lyman 1894:165]

Lyman is apparently referring here to combinations in which a particle such as [the genitive] *no* or [the archaic genitive] *ga* appears between the two elements. However, I cannot accept some of the cited items as legitimate examples, including *nanigana* (in which, according to Hepburn’s dictionary, *ga* is a particle expressing doubt and *na* is a particle expressing desire), *osoiba*, and *unabara* (in which Lyman presumably took *na* as an altered form of *no*). Be that as it may, it is true

that an obstruent immediately following a particle such as *ga* or *no* does not become voiced in most cases, as the following additional examples show.

u-no-hana 卯の花 ‘deutzia flower’⁵³
oku-no-te 奥の手 ‘last resort’⁵⁴
ka-no-ko 鹿の子 ‘deer fawn’
shimo-no-ku 下の句 ‘lower hemistich’
kita-no-kata 北の方 ‘north direction’
kan-no-ki 貫の木 ‘gate bar’
ko-no-ha 木の葉 ‘tree leaf’
toki-no-koe 鬨の声 ‘war cry’
bake-no-kawa 化の皮 ‘disguise skin’
fuku-no-kami 福の神 ‘good-luck god’
me-no-ko 目の子 ‘eye reckoning’
i-no-shishi 猪 ‘pig beast’⁵⁸
Oni-ga-shima 鬼が島 ‘Demon Island’

e-no-ki 榎 ‘hackberry tree’
kazu-no-ko 数の子 ‘herring roe’
kami-no-ku 上の句 ‘upper hemistich’
kame-no-ko 亀の子 ‘turtle young’⁵⁵
kumo-no-su 蜘蛛の巣 ‘spider web’
koto-no-ha 言の葉 ‘speech part’⁵⁶
te-no-hira 手の掌 ‘hand palm’
to-no-ko 砥の粉 ‘polishing powder’
hi-no-ko 火の粉 ‘fire sparks’
mago-no-te 孫の手 ‘grandchild hand’⁵⁷
yama-no-te 山の手 ‘mountain foothills’
i-no-fu 胃腑 ‘stomach viscera’

The reason there is no *rendaku* in such examples is that the particle intervenes between the two elements and prevents direct linkage. I checked *Kojiki* and *Nihon-shoki*, and the situation was essentially the same. (In each example below, the consonant of interest is in **outline** if it seems to have been a voiceless obstruent and in **boldface** if it seems to have been a voiced obstruent.⁵⁹ This determination is based on numerical analysis of the usage of the phonograms.)⁶⁰

(*Kojiki*)

*pari-no-**k**wi* 波理能紀 ‘alder tree’
*nadu-no-**k**wi* 那豆能紀 ‘brine tree’
*sasibu-no-**k**wi* 佐斯夫能紀 ‘rhododendron bush’
*patuse-no-**g**apa* 波都勢能賀波 ‘Hatsuse River’⁶¹
*kapa-no-**b**e* 加波能倍 ‘river bank’⁶²

(*Nihon shoki*)

*pimuka-no-**k**woma* 辟武加能古摩 ‘Himuka colt’⁶³
*womura-no-**t**ake* 鳴武羅能陀該 ‘Omura Mountain’⁶⁴
*po-no-**s**uswori* 褒能須素里 ‘fire advancing’
*nadu-no-**k**wi* 那豆能紀 ‘brine tree’
*yura-no-**t**wo* 由羅能斗 ‘Yura narrows’⁶⁵
*kasi-no-**p**u* 伽辞能輔 ‘birch grove’
*puna-no-**b**e* 浮那能倍 ‘boat prow’⁶⁶

Following [the archaic genitive particle] *tu* or a prefix such as *ma*, *mi*, or *i*, the same principle applies, that is, there is usually no *rendaku*:

ma (Kojiki)

- ma-ŕakwoyumi* 麻迦古弓 ‘true (deer?) bow’⁶⁷
ma-gupapi 麻具波比 ‘marriage’⁶⁸
ma-ŕupi 麻久比 ‘sacred post’
ma-ŕama 麻多麻 ‘fine bead’

ma (Nihon shoki)

- ma-ŕiraku* 麻比邏矩 ‘completely to open’⁶⁹
ma-sakari 摩沙可梨 ‘absolute prime’
ma-ŕwi 莽紀 ‘fine wood’

mi (Kojiki)⁷⁰

- mi-ŕyeyi* 美祁斯 ‘hon. garment’
mi-ŕadwo 美加度 ‘hon. gate’ (‘palace’)
mi-ŕi 美岐 ‘hon. liquor’
mi-ŕamwi 美迦微 ‘hon. god’
mi-sumaru 美須麻流 ‘hon. bead-string’

mi (Nihon shoki)

- mi-ŕama* 彌多摩/美多磨 ‘hon. spirit’
mi-ŕwo 彌古 ‘hon. prince’
mi-sumaru 美須磨屢 ‘hon. bead-string’
mi-ŕi 彌枳 ‘hon. liquor’
mi-ŕasira 美簸旨邏 ‘hon. pillar’
mi-ŕune 美赴泥 ‘hon. boat’

i (Kojiki)⁷¹

- i-ŕumi* 伊久美; *i-kumu* ‘emph. to link’
i-ŕiramu 伊岐良牟; *i-kirazu* 伊岐良受; *ki-iru* ‘emph. to cut’
i-ŕakuru 伊加久流 ‘emph. to hide’
i-ŕapyeri 伊賀幣理; *i-kapyeru* ‘emph. to return’
i-susugi 伊須須岐; *i-susugu* ‘emph. to rinse’
i-siki 伊斯祁; *i-siku* ‘emph. to extend’

i (Nihon shoki)

- i-siki* 伊辭鷄/伊辭枳; *i-siku* ‘emph. to extend’
i-ŕumi 以矩美; *i-sumu* ‘emph. to link’
i-ŕiramu 伊枳羅牟; *i-siru* ‘emph. to cut’
i-gapyeri-komu 異餓幣利去牟; *i-gapyeri-ku* ‘emph. to come back’
i-ŕoramu 伊斗羅牟; *i-toru* ‘emph. to take’

[f] Of so-called verbal terminations, the change from a surd to the nigori occurs in: *Ba*, in the so-called conjunctive and conditional forms; *do* and *domo*, in concessive ones; *de*, *dzu*, *ji*, *zaru*, in negative ones; *de*, in affirmative ones where the root ends in *gi*, and the *g* is dropped in contraction, or where *mi* at the end of the root is changed to *n*. [Lyman 1894:165]

Lyman brings up *ba*, *do*, *domo*, *de*, *zu*, *ji*, and so on because of etymology, so there is no reason to discuss them here. It is true that *mi-te* has become *n-de* [as in *yon-de* 読んで ‘reading’ < *yomi-te*], but we can also find examples of *ni-te* becoming *n-de* (as in *shin-de* 死んで ‘dying’ [< *sini-te*]) and of *bi-te* becoming *n-de* (as in *ton-de* 飛んで ‘flying’ [< *tobi-te*]). This pattern is generally what we see in the modern language, but there are many examples from earlier periods that did not fit. For this reason, we cannot call this pattern an absolute rule. The examples below have *u-de* instead of *n-de*:⁷²

(*mi-te*)

konō-de 好うで [< *konou-de* < *konomi-te*] ‘liking’
yō-de 読うで [< *you-de* < *yomi-te*] ‘reading’
nō-de 飲うで [< *nou-de* < *nomi-te*] ‘drinking’

(*bi-te*)

yorokō-de 喜うで [< *yorokou-de* < *yorokobi-te*] ‘rejoicing’
yō-de 呼うで [< *you-de* < *yobi-te*] ‘calling’

Also, we today say *kobi-te* 媚びて ‘flattering’, *sabi-te* 錆びて ‘rusting’, *nobi-te* 伸びて ‘growing’, etc., with no change.⁷³ In cases where *t* does become *d*, it seems to be because the breath is relatively weak in *n*, *u*, etc., as noted above, and also because there is a long pause before the expected *t* that comes next.

In addition, Lyman says that *gi-te* becomes *i-de*, but this does not happen in examples such as *sugi-te* 過ぎて ‘exceeding’.⁷⁴ At the same time, the change to *i-de* applies only to *gi-te*. While *ki-te* often becomes *i-te*, in this case the *t* is never replaced by its voiced counterpart *d*. This difference is obvious when we compare examples like the following.

<i>kai-te</i> 書いて [< <i>kaki-te</i>] ‘writing’	<i>kai-de</i> 嗅いで [< <i>kagi-te</i>] ‘smelling’
<i>koi-te</i> 扱いて [< <i>koki-te</i>] ‘threshing’	<i>koi-de</i> 漕いで [< <i>kogi-te</i>] ‘rowing’
<i>tsui-te</i> 就いて [< <i>tsuki-te</i>] ‘taking’	<i>tsui-de</i> 次いで [< <i>tsugi-te</i>] ‘following’
<i>toi-te</i> 解いて [< <i>toki-te</i>] ‘solving’	<i>toi-de</i> 研いで [< <i>togi-te</i>] ‘sharpening’
<i>nai-te</i> 泣いて [< <i>naki-te</i>] ‘crying’	<i>nai-de</i> 和いで [< <i>nagi-te</i>] ‘subsiding’
<i>nui-te</i> 抜いて [< <i>nuki-te</i>] ‘removing’	<i>nui-de</i> 脱いで [< <i>nugi-te</i>] ‘taking off’

This difference is presumably connected to the fact that the last consonant in *kagu* 嗅ぐ ‘to smell’, *kogu* 漕ぐ ‘to row’, etc., is voiced *ng*, while the last consonant in *kaku* 書く ‘to write’, *koku* 扱く ‘to thresh’, etc., is voiceless *k*.⁷⁵

Incidentally, among examples with [the gerund suffix] *te* attached to the adverbial stem of a verb, which ends in *i*, there are numerous examples of *si-te* becoming *ite* (as in *shirui-te* 記いて [< *sirusi-te*] ‘writing down’ and *sai-te* 刺いて [< *sasi-te*] ‘stabbing’) and of *pi-te* becoming *i-te* (as in *kai-te* 買いて [< *kapi-te*] ‘buying’ and many other examples since long ago).⁷⁶ Also, the modern standard is for examples that originated as *ti-te* and *ri-te* to be pronounced with the moraic obstruent.⁷⁷

(4) The following 1000 compounds do not take the *nigori* (against 2220 that do):

(a) – 353 with verbal endings (against 681 that do take the *nigori*): Charumera-fuki [喇叭吹き ‘flute player’⁷⁸], furo-fuki [風呂吹き ‘bath blowing’ (‘well-boiled radish’)⁷⁹] . . . ame-furi [雨降り ‘rainfall’] . . . [Lyman 1894:166]

(b) – 83 reduplicated words (against 67 with the *nigori*): chikuchiku [chiku-chiku チクチク ‘prickle-prickle’], chirachira [chira-chira チラチラ ‘flutter-flutter’], chirichiri [chiri-chiri 散り散り ‘scattered’⁸⁰] . . . [Lyman 1894:168]

Lyman does not list the examples that have *rendaku*, but my own observations suggest that there is consistent regularity as far as which examples have *rendaku* and which do not. Those that have *rendaku* are words that contain:

(i) reduplicated nouns

kai-gai-shii 甲斐甲斐しい ‘active’
kuchi-guni 国々 ‘countries’
kusa-gusa 草々 ‘various’
saki-zaki 先々 ‘future’
shimo-jimo 下々 ‘common people’
tsune-zune 常々 ‘always’
tokoro-dokoro 處々 ‘here and there’
hashi-bashi 端々 ‘parts’
hitotsu-bitotsu 一つ一つ ‘one by one’
hitori-bitori 一人一人 ‘one by one’
fushi-bushi 節々 ‘joints’

kuchi-guchi 口々 ‘every mouth’
kona-gona 粉々 ‘smithereens’
koe-goe 声々 ‘many voices’
sama-zama 様々 ‘various’
chi-ji 千々 ‘numerous’⁸¹
toki-doki 時々 ‘sometimes’
toshi-doshi 年々 ‘every year’
hana-bana-shii 華々しい ‘splendid’
hito-bito 人々 ‘people’
hi-bi 日々 ‘days’

(ii) reduplicated adjective bases

karu-garu 軽々 ‘effortless’
kowa-gowa 強々 ‘stiff’
shiro-jiro 白々 ‘very white’
chika-jika 近々 ‘soon’
hisa-bisa 久々 ‘a long time’

kowa-gowa 恐々 ‘fearfully’
koma-goma 細々 ‘in detail’
taka-daka 高々 ‘at most’
haya-baya 早々 ‘promptly’
furu-buru-shi 古々しい ‘very old’⁸²

(iii) reduplicated verb bases⁸³

kana-gana 叶々⁸⁴
kawari-gawari 代り代り ‘in turn’
kare-gare 枯れ枯れ ‘withering’
kure-gure 暮れ暮れ ‘dusk’
shimi-jimi 染み染み ‘thoroughly’⁸⁵
suki-zuki 好き好き ‘taste’
hae-bae 映え映え ‘brilliant’

kane-gane 兼ね兼ね ‘beforehand’
kaesu-gaesu 返す返す ‘truly’
kire-gire 切れ切れ ‘fragmentary’
sae-zae 冴え冴え ‘fresh’
kori-gori 懲り懲り ‘enough’
tori-dori 取り取り ‘various’
hare-bare 晴れ晴れ ‘cheerful’

There are also some examples that do not fit into these categories, such as *komo-gomo* 交々 ‘alternately’, *same-zame* 潜々 ‘copious (tears)’, *tsuku-zuku* 熟々 ‘entirely’, *haka-baka-shii* 捗々しい ‘rapid’, *haru-baru* 遙々 ‘great distance’, and *hono-bono* 仄々 ‘dim’.

Examples without rendaku include:

(i) onomatopoeic words⁸⁶

kasa-kasa かさかさ 'rustle-rustle'
kachi-kachi かちかち 'tick-tick'
kishi-kishi きしきし 'creak-creak'
kiri-kiri きりきり 'squeak-squeak'
kutsu-kutsu くつくつ 'snicker-snicker'
koto-koto ことこと 'tap-tap'
saya-saya さやさや 'rustle-rustle'
sū-sū すうすう 'whistle-whistle'
chan-chan ちゃんちゃん 'clang-clang'
tsun-tsun つんつん 'zip-zip'
hata-hata はたはた 'flap-flap'
futa-futa ふたふた 'flap-flap'

kata-kata かたかた 'clatter-clatter'
kari-kari かりかり 'crunch-crunch'
kichi-kichi きちきち 'creak-creak'
kusu-kusu くすくす 'chuckle-chuckle'
kotsu-kotsu こつこつ 'rap-rap'
saku-saku さくさく 'crunch-crunch'
sara-sara さらさら 'brush-brush'
soyo-soyo そよそよ 'waft-waft'
chin-chin ちんちん 'ding-ding'
ton-ton とんとん 'knock-knock'
hara-hara はらはら 'fluter-flutter'
horo-horo ほろほろ 'coo-coo'

(ii) words that mimic with sound the condition of something or that repeat a simple sound based on another part of speech⁸⁷

kiku-kiku きくきく 'bend-bend'
kyoro-kyoro きよろきよろ 'dart-dart'
kuyo-kuyo くよくよ 'brood-brood'
kosa-kosa こさこさ 'fuss-fuss'
soro-soro そろそろ 'inch-inch'
chiro-chiro ちろちろ 'flicker-flicker'
toro-toro とろとろ 'ooze-ooze'
hira-hira ひらひら 'flap-flap'
fusa-fusa ふさふさ 'flow-flow'
hero-hero へろへろ 'weak-weak'

kira-kira きらきら 'glitter-glitter'
kuta-kuta くだくだ 'weary-weary'
kuri-kuri くりくり 'round-round'
kote-kote こてこて 'slather-slather'
chira-chira ちらちら 'flicker-flicker'
tera-tera てらてら 'glisten-glisten'
haki-haki はきはき 'brisk-brisk'
hiri-hiri ひりひり 'sting-sting'
fura-fura ふらふら 'sway-sway'

Additional examples include *somo-somo* 抑々 'in the first place', *tama-tama* 偶々 'by chance', *tsura-tsura* 倩々 'carefully', *hiya-hiya* 冷や冷や 'chilly', and *hoto-hoto* 殆々 'utterly'.⁸⁸

In any case, for the most part there is a clear distinction between the examples with rendaku and those without. To illustrate this distinction, I give few pairs of words that have parallel structure but differ in meaning depending on the presence or absence of rendaku.

kara-gara 辛々 'barely'
kochi-gochi こちごち 'here and there'
shita-jita 下々 'common people'
shina-jina 品々 'various goods'
chiri-jiri 散り散り 'scattered'

kara-kara からから 'chuckle-chuckle'
kochi-kochi こちこち 'stiff-stiff'
shita-shita したした 'stealth-stealth'
shina-shina しなしな 'pliant-pliant'
chiri-chiri ちりちり 'frizzle-frizzle'

We see a similar tendency in ancient times, as examples from *Kojiki* and *Nihon shoki* show.

(Kojiki)

tasi-dasi ni 多志陀志爾 ‘sufficiently’
towowo-towowo ni 登遠遠登遠遠邇 ‘bending’
topo-topo-si 登富登富斯 ‘far-away’
sawa-sawa ni 佐和佐和爾 ‘noisily’
saya-saya 佐夜佐夜 ‘resonantly’
koworo-koworo 許袁呂許袁呂 ‘chirp-chirp; stir-stir’
koto-goto 許登碁登 ‘all’
koti-goti 許知碁知 ‘here and there’
saki-zaki 佐岐邪岐 ‘the past’
katu-gatu 加都賀都 ‘barely’
ka-ga-nabete 加賀那倍弓 ‘day after day’
suku-suku to 須久須久登 ‘rapidly’

(Nihon shoki)

ka-ga-nabesi 伽俄奈倍氏 ‘day after day’
saya-saya 佐椰佐椰 ‘resonantly’
sawa-sawa ni 佐和佐和珥 ‘noisily’
sima-sima 辭摩之魔 ‘islands’
kapa no kuma-guma 箇破能區莽窩莽 ‘river bends’
toki-toki 等枳等枳 ‘sometimes’⁸⁹
parwo-parwo ni 波魯波魯爾 ‘far away’

(c) – 34 compounds with adjective endings (against 106 that do take the *nigori*): . . . *aoshiroi* [*ao-shiroi* 青白い ‘blue-white’ (‘pale’)] . . . *yuyushii* [*yuyu-shii* 由々しい ‘serious’⁹⁰], besides others compounded with *mahoshii*, *shii*, *tai*, and *toi*, which do not appear as separate words.

(d) – 29 juxtaposed words of allied or contrasted meaning: *achikochi* [*achi-kochi* あちこち ‘here and there’], *anakashiko* [*ana-kashiko* あなかしこ ‘oh-fearsome’ (‘so be it’)],⁹¹ *atosaki* [*ato-saki* 後先 ‘after and before’] . . . *itotake* [*ito-take* 糸竹 thread and bamboo’ (‘strings and woodwinds’)] . . . *toyakakuto* [*toya-kaku-to* 兎や角と ‘this and that’]⁹² . . . *uwoosawoo* [*uō-saō* 右往左往 ‘going-right and going-left’ (‘stampede’)].

[Lyman 1894:168–169]

Among the 29 that Lyman cites in (d), however, there are quite a few that do not fit his description.

(e) – Also the following 501 words (against 1366 with the *nigori*): *a-chi* [あち ‘that way’], *ko-chi* [こち ‘this way’], *nama-chi* [生血 ‘fresh blood’], *shira-chi* [白血 ‘white-blood’ (‘leucorrhea’)] . . . [Lyman 1894:169–171]

(1)–(4) above are Lyman’s four conditions for when *rendaku* does not occur. On this basis, he says in conclusion:

When the first part indicates the origin, source, cause or the like, possession or ownership, superiority, prevalence, pervasion, inclusion (either physical or ideal or a classifying feature) of the second part, in short domination over it as a subordinate thing, there is

no nigori of composition. These are the very qualities possessed in English by a substantive following the word *of*, as compared with the one that precedes.

But when those qualities are rather possessed by the following part of the compound, of which the first part indicates a subordinate or a more or less imperfectly, partially, superficially, temporarily, occasionally applying feature characteristic or feature, there is nigori. When, for example, the nigori compound has an adjective ending, the first part shows in what respect the quality is meant; and when both parts are verbal forms, the first likewise shows with reference to what the action of the second takes place, instead of there being something else to which both actions concomitantly refer.

[Lyman 1894:171–172]

In other words, Lyman is claiming that *rendaku* occurs when the meaning of the second element is comparatively strong and does not occur when it is comparatively weak. That is, his distinction rests on the relative semantic importance of the two elements.

However, it is difficult to compare this rule with Lyman's four conditions and try to find exceptions. One reason is that the rule does not apply when Lyman's condition (1) is met (i.e., when there is a voiced obstruent in the second syllable or later in the second element). Checking the examples that Lyman actually cites, there are indeed many that follow the rule, but there are also quite a few that do not. *Rendaku* occurs even though the first element seems to be semantically more important in *tatōe-banashi* 譬え話 'allegory' [cf. /tatōe/ 'comparing', /hanaši/ 'story'], *oshi-dori* 鴛鴦 'mandarin duck' [cf. /oši/ 'mandarin duck', /tori/ 'bird'⁹³], *wasure-gachi* 忘れ勝ち 'forgetful' [cf. /wasure/ 'forgetting', /kači/ 'predominating'], *tomari-gake* 泊り掛け 'leaving with the intention of staying away overnight' [cf. /tomari/ 'staying', /kake/ 'beginning'], *obore-jini* 溺れ死に 'death by drowning' [cf. /obore/ 'drowning', /šini/ 'dying'], *mikake-daoshi* 見掛け倒し 'false front' [cf. /mi+kake/ 'appearance', /taoši/ 'toppling'], *kakure-ga* 隠処 'hideout' [cf. /kakure/ 'hiding', /ka/ 'place'⁹⁴], etc. On the other hand, *rendaku* does not occur even though the second element seems to be semantically more important in *nama-chi* 生血 'fresh blood' [cf. /nama/ 'raw', /či/ 'blood'], *suki-hara* 空き腹 'empty stomach' [cf. /suki/ 'emptying', /hara/ 'belly'], *kumi-himo* 組み紐 'braided cord' [cf. /kumi/ 'crossing', /himo/ 'cord'], *mura-kumo* 群雲 'gathering clouds' [cf. /mura/~mure/ 'group', /kumo/ 'cloud'], *ō-tori* 大鳥 'large bird' [cf. /oH/ 'large', /tori/ 'bird'], etc. It follows that Lyman's rule for *rendaku* cannot be the whole explanation all by itself. It is just one factor. In an attempt to uncover other factors, I compared some examples in which the same element sometimes shows *rendaku* and sometimes does not.

ki 木 'tree; wood'

ao-ki 青木 'laurel'

taru-ki 垂木 'rafter'

kubi-ki 頸木 'yoke'

asa-gi 麻木 'hemp stem'

gan-gi 雁木 'covered alley'

tsuke-gi 付木 'splinter (for lighting a fire)'

ke 気 ‘air, trace’

abura-ke 油気 ‘oiliness’
shio-ke 潮気 ‘salty dampness’
doku-ke 毒気 ‘poisonousness’

yu-ge 湯気 ‘steam’
wanu-ge 悪気 ‘bad appearance’

ko 子 ‘child’

hari-ko 張子 ‘papier-mâché’
hiki-ko 挽子 ‘rickshaw puller’
mai-ko 舞子 ‘dancer’

ina-go 稲子 ‘locust’
sute-go 捨子 ‘abandoned child’
hashi-go 梯子 ‘ladder’

ta 田 ‘paddy’

are-ta 荒田 ‘ruined paddy’
ao-ta 青田 ‘green paddy’
aki-ta 秋田 ‘autumn paddy’⁹⁶

asa-da 浅田 ‘shallow paddy’
sana-da 真田 ‘braid’⁹⁵
hasu-da 蓮田 ‘lotus paddy’⁹⁷

te 手 ‘hand, arm’

ai-te 相手 ‘opponent’
kara-te 空手 ‘karate’
itsu-te 五手 ‘five oar pairs’⁹⁸

kashiwa-de 柏手 ‘prayer handclap’
su-de 素手 ‘bare hands’
kuma-de 熊手 ‘rake’

kata 方 ‘side, direction’

ara-kata 粗方 ‘most’
oya-kata 親方 ‘boss’
shi-kata 仕方 ‘way of doing’

ake-gata 明方 ‘dawn’
ima-gata 今方 ‘just now’
kure-gata 暮方 ‘nightfall’

kiri/kire 切 ‘cutting’

ishi-kiri 石切 ‘stone cutting’
kawa-kiri 皮切り ‘beginning’
hara-kiri 腹切り ‘harakiri’

iki-gire 息切れ ‘out of breath’
ko-gire 小切れ ‘small piece of cloth’
ha-giri 歯切り ‘grinding one’s teeth’

kusa 草 ‘grass’

kara-kusa 唐草 ‘arabesque’
tsuyu-kusa 露草 ‘dayflower’
nana-kusa 七草 ‘seven herbs’

aki-gusa 秋草 ‘autumn-blooming grass’
asami-gusa 浅見草 ‘pine’
chi-gusa 千草 ‘various plants’

kuchi 口 ‘mouth’

ama-kuchi 甘口 ‘mild flavor’
hito-kuchi 一口 ‘mouthful’
sui-kuchi 吸い口 ‘mouthpiece’

ito-guchi 糸口 ‘beginning’
koi-guchi 鯉口 ‘sword-sheath mouth’
yama-guchi 山口 ‘mountain-trail start’

tori 取り ‘taking’

ato-tori 跡取り ‘successor’
kuchi-tori 口取り ‘horse groom’
hiki-tori 引き取り ‘receiving’

ike-dori 生け捕り ‘capturing alive’⁹⁹
iro-dori 色取り ‘coloring’
kai-dori 掻取 ‘hem lifting’

hari 取り 'stretching'*arai-hari* 洗い張り 'washing & stretching'*iji-hari* 意地張り 'obstinacy'¹⁰⁰*yumi-hari* 弓張り 'bow shape'*age-bari* 揚げ張り 'ceremonial tent'*iki-bari* 息張り 'holding one's breath'*komo-bari* 蓐張り 'stretching matting around'*hiki* 引き 'pulling'*kake-hiki* 駆け引き 'haggling'*sashi-hiki* 差し引き 'deduction'*momo-hiki* 股引 'long underpants'*ai-biki* 逢い引き 'secret date'*ne-biki* 根引き 'uprooting'*man-biki* 万引き 'shoplifting'*fune* 船 'boat, ship'*iwa-fune* 岩船 'sturdy ship'*kuro-fune* 黒船 'black ship'*haya-fune* 早船 'fast boat'¹⁰¹*tako-bune* 蛸船 'nautilus shell'*tsuri-bune* 釣り船 'fishing boat'*tomo-bune* 伴船 'consort ship'

After considering these and many other examples, I briefly investigated the following two possibilities.

- (i) Does the accent of the first element have some sort of effect on the first sound of the second element?
- (ii) Does the degree of fusion of the two elements determine whether or not *rendaku* occurs? That is, might it not be the case that *rendaku* occurs when the two elements are completely fused into a single compound word and does not occur when the two elements are not completely fused (e.g., when a particle such as [genitive] *no*, [nominative] *ga*, or [accusative] *o* can freely be inserted between them)?

However, this investigation did not yield clear results.

Why is it that *rendaku* presents us with this irregularity? As I said above, the explanation may be historical. It could be that *rendaku* was essentially regular in each period in the past, and the reason that present-day *rendaku* differs could be that people today haphazardly mix the rules from different times in the past. Consequently, in order to study *rendaku*, we first need to look at it historically and investigate in detail how *rendaku* applied at any given time. It is fundamentally mistaken to presuppose that the language of ancient times followed the same principles as the language today. It is certainly not possible to obtain satisfactory results on the basis of dubious word counts. It is my strong desire to pursue this kind of historical research, but I have not yet been able to accomplish even a small fraction of what is required. Nonetheless, it should be instructive to investigate compounding in *Kojiki* and *Nihon shoki* and determine how widespread *rendaku* was by looking at the different *man'yōgana* spellings of the same element and considering how frequently each character was used

to represent a syllable beginning with a voiceless obstruent or with a voiced obstruent. Relevant examples are listed below.

(*Kojiki*)

- kaki* ‘fence’ [^{MT}/kaki/ 垣]
aya-kaki 阿夜加岐 ‘twill shroud’
awo-kaki-yama 阿袁加岐夜麻 ‘green fence mountain’
tama-kaki 多麻加岐 ‘fine fence’
siba-kaki 志婆加岐/斯婆加岐 ‘bush fence’
yapye-gaki 夜幣賀岐 ‘many-layered fence’
kupi ‘post’ [^{MT}/kui/ 杭]
i-gupi 伊久比 ‘purified post’
wi-gupi 韋具比 ‘dam post’
kusa ‘grass’ [^{MT}/kusa/ 草]
waka-kusa 和加久佐 ‘young grass’
nuye-kusa 怒延久佐 ‘supple grass’
natu-kusa 那都久佐 ‘summer grass’
uwe-gusa 宇恵具佐 ‘cultivated grass’
kupasi ‘lovely’ [^{MT}/kuwaši-i/ 詳しい ‘detailed’]
isu-kupasi 伊須久波斯¹⁰²
ka-gupasi 迦具波斯 ‘fragrant’
komo ‘rush; rush matting’ [^{MT}/komo/ 薦]
tatami-komo 多多美許母 ‘rush mat’
kari-komo 加里許母 ‘cut rushes’
tatu-gomo 多都基母 ‘upright matting’¹⁰³
saka ‘hill’ [^{MT}/saka/ 坂]
o-saka 意佐加 ‘Osaka’¹⁰⁴
opo-saka 淤富佐迦 ‘Osaka’¹⁰⁵
panipu-zaka 波邇布邪迦 ‘Hanyū-zaka’¹⁰⁶
se ‘shallows’ [^{MT}/se/ 瀬]
sipo-se 斯本勢 ‘tidal rapids’
watari-ze 和多理是 ‘ford’
tama ‘jewel’ [^{MT}/tama/ 玉]
nuba-tama 奴婆多麻 ‘black jewel’
sira-tama 斯良多麻 ‘white jewel’
ara-tama 阿良多麻 ‘unpolished jewel’
aka-dama 阿加陀麻 ‘red jewel’
ana-dama 阿那陀麻 ‘jewel with a hole’
tatu ‘stand’ [^{MT}/tac-u/ 立つ]¹⁰⁷
ari-tatasi 阿理多多斯 ‘to leave standing’
swori-tatasite 蘇理多多斯弓 ‘to raise high’
tubu-tatu 都夫多都 ‘to become granular’
ipa-tatasu 伊波多多須 ‘to stand like a rock’
ide-tatite 伊傳多知弓 ‘to appear standing’
pasi-tate 波斯多弓 ‘to raise a ladder’
pure-tatu 布禮多都 ‘to stand wavering’
saki-dateru 佐岐陀弓流 ‘to stand before’

- opwi-dateru* 淤斐陀呂流 'to grow and rise'
pari-tate 波理陀呂 'to spread and raise'
i-yori-tatasu 伊余理陀多須 'to stand near'
ta 'paddy' [^{MT}/ta/ 田]
pike-ta 比氣多 'irrigated paddy'(?)¹⁰⁸
yama-da 夜麻陀 'mountain paddy'
te 'hand' [^{MT}/te/ 手]
ita-te 伊多呂 'wound'
tama-de 多麻傳 'fine hand'
usiro-de 宇斯呂傳 'appearance from behind'
pata-de 波多傳 'edge'
teru 'shine' [^{MT}/ter-u/ 照る]
osi-teru 淤志呂流 'to shine all over'
pi-deru 比傳流 'to sunshine'
tori 'bird' [^{MT}/tori/ 鳥]
mura-tori 牟良登理 'flocking birds'
pike-tori 比氣登理 'birds led into flight'
ti-tori 知登理 'plover'¹⁰⁹
udura-tori 宇豆良登理 'quail'
na-dori 那杼理 'my bird'
swoni-dori 蘇邏杼理 'kingfisher'
ti-dori 知杼理 'plover'
nipo-dori 邏本杼理 'grebe'
mipo-dori 美本杼理 'grebe'
mye-dori 賣杼理 'female bird'
para 'plain, field' [^{MT}/hara/ 原]
asa-di-para 阿佐遲波良 'shallow grass plain'
asi-para 阿斯波良 'reed plain'
asa-zinwo-para 阿佐土怒波良 'low bamboo plain'
suge-para~suga-para 須宜波良/須賀波良 'sedge field'
kasi-para 加志波良 'oak field'
waka-kurusu-bara 和加久流須婆良 'fresh chestnut field'
pirosi 'broad' [^{MT}/hiro-i/ 広い]
pa-biro 波毘呂 'broad-leafed'
pito 'person' [^{MT}/hito/ 人]
kibwi-pito 岐備比登 'person from Kibi'¹¹⁰
naga-pito 那賀比登 'long-lived person'
miya-pito 美夜比登 'shrine attendant'
satwo-bito 佐斗毘登 'villager'
sakari-bito 佐加理毘登 'person in the prime of life'

(Nihon shoki)

- kaki* 'fence' [^{MT}/kaki/ 垣]
awo-kaki-yama 阿烏伽枳夜摩 'green fence mountain'
kara-kaki 罽羅罽枳 'foreign-style fence'
kumi-kaki 矩彌罽枳/俱彌柯枳 'constructed fence'
siba-kaki 之魔柯枳 'bush fence'

- uta-gaki* 宇多我岐 ‘fertility ceremony’
yapye-gaki 夜霸餓岐/夜霸餓枳 ‘many-layered fence’
- kata* ‘direction’ [^{MT}/kata/ 方]
woti-kata 烏知可拖/烏知箇多 ‘yonder’
pisa-kata 比佐加多¹¹¹
pira-kata 比擺智駄 ‘Hirakata’¹¹²
- kami* ‘upper part’ [^{MT}/kami/ 上]
ta-kami 多伽彌 ‘sword hilt’
ta-na-kami 多那伽彌 ‘above a paddy’
koto-gami 舉騰我彌 ‘harp front’
- kapa* ‘river’ [^{MT}/kawa/ 川]
isi-kapa 以嗣箇播/伊社箇波 ‘stony river’
asuka-gapa 阿須箇我播 ‘Asuka River’¹¹³
yama-siro-gapa 椰莽之呂餓波 ‘Yamashiro River’¹¹⁴
yama-gapa 耶麻鶯波 ‘mountain river’
- kwi* ‘tree’ [^{MT}/ki/ 木]
ma-kwi 磨紀 ‘cedar’
poso-kwi 褒曾紀 ‘pepper tree’
saka-kwi 佐介幾 ‘sakaki’
- kwi* ‘fortress’ [^{MT}/ki/ 城]
taka-kwi 拖智紀/多伽機 ‘fortress on high ground’
opo-kwi-dwo 於朋耆妬 ‘large fortress gate’
- kuni* ‘region, country’ [^{MT}/kuni/ 国]
kara-kuni 柯羅俱爾/柯羅俱爾 ‘foreign country’
ya-sima-kuni 野絕磨俱爾 ‘country of many islands’
po-tu-ma-kuni 袍圖莽勾爾 ‘fine region’
- kumwo* ‘cloud’ [^{MT}/kumo/ 雲]
ya-kumwo-tatu 椰句茂多菟/夜句茂多菟 ‘many clouds form’
mura-kumwo 武羅玖毛 ‘gathered clouds’
- kupasi* ‘lovely’ [^{MT}/kuwaši-i/ 詳しい ‘detailed’]
isu-kupasi 伊殊區波辭¹¹⁵
hana-gupasi 波那俱波辭 ‘lovely as a flower’
ura-gupasi 于羅虞波斯 ‘touchingly beautiful’
ka-gupasi 伽愚破志 ‘fragrant’
- kusa* ‘grass’ [^{MT}/kusa/ 草]
waka-kusa 倭柯矩娑 ‘young grass’
awo-pito-kusa 阿烏比等久佐 ‘citizenry’¹¹⁶
- kupa* ‘hoe’ [^{MT}/kuwa/ 鍬]
ko-kupa 許久波/許玖波 ‘wooden hoe’
- kupi* ‘eating’ [^{MT}/kui/ 食い]
paya-kupi 波野俱譬 ‘rapid eating’
pe-gupi 俳遇比 ‘eating from an oven’
- kwo* ‘child’ [^{MT}/ko/ 子]
waku-gwo 倭俱吾/和俱吾 ‘young person’
a-gwo 阿誤 ‘my child’
- komoru* ‘to sequester oneself’ [^{MT}/komor-u/ 籠る]¹¹⁷
pupo-gomori 府保語茂利 ‘to remain closed’

- tuma-gomori/tuma-gomoru* 菟磨語味爾/逗摩御暮屢 'to live alone with one's spouse'¹¹⁸
pye-gomori 陸御暮黎 'to remain in an area'
- kwoma* 'horse' [^{MT}/koma/ 駒]
kurwo-kwoma 矩盧古磨 'black horse'
aka-gwoma 阿箇悟馬 'red horse'
- saka* 'hill' [^{MT}/saka/ 坂]
o-saka 於佐箇 'Osaka'¹¹⁹
yomo-tu-pira-saka 余母都比羅佐可 'Yomotsu-Hirasaka'¹²⁰
opo-saka 飴朋佐介 'Ōsaka'¹²¹
wo-saka 烏瑤箇 'small hill'
- sakaru* 'to go away' [obsolete]
muka-sakuru 武胥左屢樓 'to face from afar'¹²²
ama-sakaru 阿磨佐箇屢 'to go far into the heavens'¹²³
- sima* 'island' [^{MT}/šima/ 島]
apadi-sima 阿波泥辭摩 'Awaji-shima'¹²⁴
aduki-sima 阿豆枳辭摩 'Azuki-shima'¹²⁵
akidu-sima 阿耆豆辭莽/阿企菟辭摩/婀歧豆斯麻/婀歧豆斯麻 'Yamato'¹²⁶
ya-sima-kuni 野繩磨俱爾 'country of many islands'
- se* 'shallows' [^{MT}/se/ 瀨]
sipo-se 之衰世 'tidal rapids'
piro-se 毗稜栖 'wide ford'
- soko* 'bottom' [^{MT}/soko/ 底]
mi-na-soko 美奈曾己 'bottom of a body of water'¹²⁷
ta-na-soko 陀那則舉 'palm of the hand'¹²⁸
- tatu* 'to stand' [^{MT}/tac-u/ 立ㄅ]¹²⁹
puri-tatu 敷例多菟 'raise wavering'
pasi-tate 破始多弓 'raise a ladder'
ko-tati 虛多智 'stand of trees'¹³⁰
ide-tatasu 異泥多多須 'appear standing'
kata-tati 伽哆哆知 'one standing'(?)¹³¹
koto-date 虛等太弓 'state clearly'
ide-tati 伊底拖智 'appear standing'
saki-dateru 左岐陀弓屢 'stand before'
okwi-tati 於己陀智 'stand up'
nobori-tati 能朋梨陀致 'start to climb'
- ta* 'paddy' [^{MT}/ta/ 田]
se-ta 齊多 'Seta'¹³²
ozapye-ta 於/幣陀¹³³
opoki-ta 於保岐陀 'large paddy'
wonope-ta 烏能陸陀¹³⁴
niki-ta-tu 備枳陀豆 'Nikitatsu'¹³⁵
yama-da 耶摩娜 'mountain paddy'
pa-da 簸娜¹³⁶
- tama* 'jewel' [^{MT}/tama/ 玉]
nuba-tama 農播拖磨 'black jewel'
ana-dama 阿奈陀磨 'jewel with a hole'
sira-tama 之羅陀魔 'white jewel'

- aka-dama* 阿軻娜磨 ‘red jewel’
take ‘bamboo’ [^{MT}/take/ 竹]
i-kumi-dake 以矩美娜開 ‘intertwined bamboo’¹³⁷
yo-dake 余囊開 ‘jointed bamboo’
sasu-take 佐須陀氣¹³⁸
-tari ‘person’ [obsolete]¹³⁹
pu-tari 赴駄利 ‘two people’¹⁴⁰
ya-tari 夜儂利 ‘eight people’¹⁴¹
taru ‘to hang down’ [^{MT}/tare-ru/ 垂れる]¹⁴²
si-daru 之娜屨 ‘to hang down’¹⁴³
musubi-tare 夢須寐陀黎/武須彌陀例 ‘to hang bound’
tuti ‘hammer’ [^{MT}/cuči/ 槌]
kubu-tuti 勾夫菟智 ‘hammer-shaped hilt’
kabu-tuti 箇步豆智 ‘hammer-shaped hilt’
tura ‘vine’ [obsolete]
yosa-dura-yoso-dura 與佐圖羅~與曾豆羅 ‘gourd’
ma-saki-dura 磨左棄逗囉 ‘oleander’
te ‘hand’ [^{MT}/te/ 手]
ma-de 莽耐 ‘both hands’
pira-de 毗羅耐 ‘leaf plate’
tama-de 多麻提 ‘fine hand’
siri-pye-de 志理幣提 ‘hands behind one’s back’
sakwi-de 佐基泥 ‘chapped hand’
pata-de 簸多泥 ‘edge’
nikwo-de 儂古禰 ‘soft hand’
t(w)ori ‘taking’¹⁴⁴ [^{MT}/tori/ 取り]
no-t(w)ori 能登利¹⁴⁵
isana-t(w)ori 異舍儺等利 ‘whale hunting’
tuma-d(w)ori 都磨怒喇 ‘taking up a hem’¹⁴⁶
atwo-t(w)ori 阿都圖喇¹⁴⁷
makura-t(w)ori 魔俱囉圖喇¹⁴⁸
tori ‘bird’ [^{MT}/tori/ 鳥]
mye-dori 謎廼利 ‘female bird’
nipa-tori 珥倍廼利 ‘chicken’
ti-dori 智耐理 ‘plover’
two ‘gate, door’ [^{MT}/to/ 戸]
asa-two 阿佐妬 ‘morning gate’
ita-two-ita-dwo 伊陀圖 ‘wooden gate’
tono-two 等能渡 ‘palace gate’
toko ‘bed’ [^{MT}/toko/ 床]
sa-ywo-doko 瑤由廼虛 ‘night bed’
sa-ne-doko 佐禰耐據 ‘sleeping bed’
para ‘plain, field’ [^{MT}/hara/ 原]
ma-kuzu-para 麻矩儒播羅 ‘kudzu field’
yabu-para 野文播羅 ‘thicket’
matu-bara 摩菟麼邏 ‘pine field’
asa-di-para 阿佐膩簸邏 ‘shallow grass plain’

- pa* 'leaf' [MT/ha/ 葉]
ti-ba 知婆 'many leaves'
kasi-pa 始婆 'oak'
opo-ba-kwo 於譜磨故 'plantain'
ya-swo-ba 椰素麼 'luxuriant leaves'
- pata* 'loom' [MT/hata/ 機]
tana-bata 多奈婆多 'loom'
kana-bata 箇儼麼多 'metal loom'
- pasi* 'bridge' [MT/haši/ 橋]
uti-pasi 于知波志 'wooden-plank bridge'
taka-pasi 拖箇播志 'high bridge'
wo-basi 烏麼志 'small bridge'
- pana* 'flower' [MT/hana/ 花]
tati-bana 多致播那/多致播那 'citrus'
- pito* 'person' [MT/hito/ 人]
miya-pito 彌椰比等 'shrine attendant'
tare-ya-si-pito 陀黎耶始比登/駄例夜矢比等 'what person'¹⁴⁹
ta-bito 多比登 'traveler'
awo-pito-kusa 阿烏比等久佐 'thriving people'
uma-pito 宇摩比等/于磨臂苔/于摩譬苔 'high-ranking person'
topo-pito 等保臂等 'elderly person'
ti-paya-pito 知破椰臂苔/智破椰臂等 'wild person'
naga-pito 那餓臂等 'long-lived person'
nanipa-pito 那珥波譬苔 'Naniwa person'¹⁵⁰
na-bito 那鼻苔/娜毗騰 'thou'
saka-bito 佐介弭苔 'saké brewer'
satwo-bito 佐社弭等 'villager'
- pi* 'sun, day' [MT/hi/ 日]
nigi-paya-pi 儺藝波椰卑 'Nigi-haya-hi' (a god)¹⁵¹
paru-pi 播屢比 'spring day'
- pikwo* 'boy' [MT/hiko/ 彦 (an element in many boys' names)]
 ...*pikwo* . . .比古 (in too many examples to cite)
iri-bikwo 異利寐胡 'revered boy'(?)¹⁵²
- piraku* 'to open' [MT/hirak-u/ 開<]
osi-piraki 飢斯毘羅枳/*osi-pirakane* 於辭寐羅箇福 'to push open'¹⁵³

(Please be aware that the numbers above are only very approximate counts. Also, they do not include the example words cited in each group.)¹⁵⁴

As these examples show, there are some elements in which *rendaku* seems always to occur, but there are also many elements in which *rendaku* sometimes occurs and sometimes does not. Just as in the Japanese of today, it is not possible to find a consistent rule for *rendaku* in the Japanese of *Kojiki* and *Nihon shoki* (although we cannot be sure about the language as a whole at that time just on the basis of the words that appear in these two texts). Since there are no written sources to consult for the language at a time before *Kojiki* and *Nihon shoki*, it is

virtually impossible to discover the original state of *rendaku* in any detail. Given the irregularity of the phenomenon in *Kojiki* and *Nihon shoki*, it may be the result of an unsystematic jumbling of the compounding methods of earlier periods.

On the other hand, we need to keep in mind that our research is based for the most part on deductions from present-day habits of pronunciation. If we admit that it is problematic to infer the customs of ancient times directly from the customs of today, then we must also admit that is problematic to infer the pronunciation of ancient times on the basis of the pronunciation of today. Especially when it comes to aspects of language such as intonation, which simply cannot be determined from writing, there may have been things that we cannot imagine but nonetheless had a conspicuous influence. Thus, even when it appears phonograms were used indiscriminately without regard to whether syllables began with a voiceless obstruent or a voiced obstruent, the authors of these documents may not be at fault. It may be that we have misunderstood because we are looking at these documents many centuries later through clouded glasses.

I have set forth Lyman's conclusions regarding *rendaku* and summarized my own thoughts about those conclusions. Following his conclusions, Lyman adds one more condition, which pertains to the origin of *rendaku*:

It is clear that the *nigori* invariably arises from the disappearance of a sonant consonant, almost always an *n*, and generally the word *no* (of), but sometimes *ni* (in, to, especially in re-duplicated words), sometimes the negative *n*, and sometimes other sonants or syllables, as perhaps occasionally *de* (at or with), which appears to be on the same principle a contraction either of *nite* (with, by, in) or of *motte* (having). [Lyman 1894:172]

What Lyman presumably had in mind are examples such as *kotoba* 言葉 'word' from *koto no ha* (disappearance of *no*) and *hibi ni* 日々に 'every day' from *hi ni hi ni* (disappearance of *ni*).¹⁵⁵ (I am not sure what he meant by citing negative *n*.¹⁵⁶) I cannot really evaluate this claim, however, since Lyman does not provide examples. In regard to the etymology of *no*, Lyman says:

[The word *no*] appears to be the last syllable of the word *mono* [物] (thing); for in Japanese not merely is the last part of a word dropped in derivation, as in many western languages, but it is very common that the first part is dropped The form *no* is very often used after adjective and verbal forms (frequently contracted to simple *n*), with obviously the same meaning as *mono* (thing). [Lyman 1894:173]

Since this is a question of etymology, there is no need to discuss it in detail here.

At the end of his pamphlet, Lyman argues at some length that the regularities of *rendaku* are important for etymological analysis:

For example, *Terashima* [寺島] would be an island belonging to a temple; whereas *Tera-jima* [寺島] would be an island with a temple on it. *Akindo* [商人] (trader) is *akinai no hito* [商いの人]¹⁵⁷ (man of trade); *shirooto* [shirōto 素人] (one not skilled in a profession) is *shiro-hito* [白人] (man of whiteness); while *kurooto* [kurōto 玄人] (one skilled in a profession) is *kuro-hito* [黒人] (man of blackness). But *kuromboo* [kuronbō 黒ん坊] (negro) is perhaps *kuro na hito* [黒な人] (a man that has become black or tanned); and likewise *akamboo* [akanbō 赤ん坊] (baby) is *aka na hito* [赤な人] (red man, but not permanently or fully so); and *shiwamboo* [shiwambō 吝ん坊] (miser) is *shiwa na hito* [吝な人].¹⁵⁸ . . . The last syllable of *kaeriji* [帰り路] (return journey), *kawaji* [川路] (river road), *mikkaji* [三日路] (three days' journey), and *kooji* [kōji 小路] (small streets) is clearly *michi* [道/路] (road). The first part of *kadzo* or *koodzo* [kōzo 楮] (the paper mulberry) is apparently derived from *kami* (paper).¹⁵⁹ *Koodzuke* [Kōzuke 上野], the name of a province, is evidently *Kami-tsuke* (this *kami* meaning upper), corresponding to *Shimo-tsuke* [下野] (*shimo* meaning lower), without the *nigori*. *Koobe* [Kōbe 神戸], the name of a town, would be *Kami-he* [上辺] (upper place or dwelling). *Oozaka* [Ōzaka 大阪], the name of the great city, is *Ooki na saka* [ōki na saka 大きな阪] (the great steep-road); whereas *Oosaka*, as it is often called, would be *Ooki saka* [ōki saka 大き阪], nearly the same in meaning, but perhaps differing in the degree of emphasis. The monosyllable *ga*, pronounced *nga*, may be derived from *no ka*, with the *ka* meaning emanation. *Ga*, like *ji* from *michi*, also given as a separate word, and like *de*, already mentioned, is an instance where the *nigori* begins a word,¹⁶⁰ and it seems not wholly impossible that all the cases where purely Japanese words so begin might have some similar explanation, and that the other cases of *nigori*, in the middle of a word, may have arisen from compounding. [Lyman 1894:174–175]

These examples seem to be covered by Lyman's claim that *rendaku* is sometimes the result of the elision of *no* or *na* (which begin with *n*), the elision of *mi* (which begins with *m*), etc. However, Lyman goes a step further:

The word *hidari* [左] (left hand), often *hindari* in the country, appears to be the direction of the sunrise, *hi no detari* [日の出たり]; while *migi* [右] (right hand), often in the country *migiri*, is possibly *miru no o kiri* [見るのを切り], or *miru n' kiri*, the direction of the cutting (*kiri*) off of seeing (*miru no*), or sunset; or from *mi kagiri* [見限り] (limiting of sight); or again from *mi kagiri*, that is, *kami kagiri* [神限り] (the august setting or the god's setting). The derivation that has been proposed (As. Soc. Jap., VI, 473) from *nigiri* [握り], to grasp, is rather impossible; for, besides the difficulty of changing *n* to *m* in such a case, the word *nigiri* as a concrete substantive applies to the part of the bow that is grasped, and that with the left hand. The words for left and right in Japan appear, then, to be derived from the position of the sunrise and sunset, with reference to the favorite and ordinary outlook of dwellings there. This would seem to suggest a reasonable and natural explanation why in India the South is reckoned to be on the right hand; not by any worship of the rising sun, such as exists even in Japan, but by the fact that tents or other dwellings, whenever possible, are made to look towards the east, so as to have the rising sun take off the morning chill, and to be in the shade the rest of the day. It seems to be one of those cases where points in one language are made clear by the investigation of another very distant one.

[Lyman 1894:175–176]

Here Lyman seems to have pushed his hypothesis about the elision of *no* too far.

I have now finished presenting all of Lyman's hypotheses, and I would like to conclude by mentioning two points about *rendaku* that must be kept in mind.

First, the consonants *h* and *f* ordinarily become *b* in *rendaku*, as in *ie-bato* 家鳩 'domestic pigeon' [cf. /hato/ 'pigeon'], *funa-bito* 船人 'boatman' [cf. /hito/ 'person'], *yoko-bue* 横笛 'transverse flute' [cf. /fue/ 'flute'], *tsuno-bera* 角篋 (?) [cf. /hera/ 'spatula'],¹⁶¹ and *oi-bore* 老い耄れ 'dotage' [cf. /hore/ 'becoming senile']. Quite strangely, however, when *hara* 原 'field, plain' occurs in words such as *ashi-wara* 葦原 'reed field', *ishi-wara* 石原 'stony plain', *sasa-wara* 笹原 'bamboo-grass field', *suga-wara* 菅原 'sedge field', and *sunawara* 砂原 'sandy plain', it is pronounced with *w*,¹⁶² and we also find *w* in words such as *kata-wa* 側 'disability' [cf. /ha/ 'edge'],¹⁶³ *ke-wai* 気色 'indication',¹⁶⁴ *ki-wada* 黄蘗 'Amur cork tree' (etymologically 'yellow skin') [cf. /hada/ 肌 'skin'],¹⁶⁵ *hi-wada* 檜皮 'cypress bark' [cf. /hada/ 肌 'skin'], and *sugi-wai* 生業 'livelihood'.¹⁶⁶ (When this same *hara* occurs immediately following a syllable with *w*, the *h* in *hara* seems to become *b*, as in *kuwa-bara* 桑原 'mulberry field' and *kashiwabarabara* 柏原 'Kashiwabara'.¹⁶⁷ The *h* in the homophonous word *hara* 腹 'belly' becomes *b* in compounds such as *mekake-bara* 妾腹 'mistress birth', *futo-bara* 太腹 'fat belly', and *ato-bara* 後腹 'afterpains', but it never becomes *w*.¹⁶⁸) Except in word-initial position, we often find *wa* instead of *ha* (as in *kawa* 川 'river', *kiwa* 際 'side', *iwa* 岩 'rock', and the [topic] particle *wa* は), but at the beginning of a word or at the beginning of the second element of a compound, it is extremely rare to find *wa* instead of *ha*. (There are a few examples that the 12th-century *Ruijūmyōgishō* 『類聚名義抄』 lists as beginning either with *ha* or with *wa*, including *washiru~hashiru* 'run' (趙 as *washiru/hashiru*, 趨, 驟, etc., as *washiru*, and 走 as *hashiru*) and *wazuka~hazuka* 僅 'little bit'.) In any case, if we allow that [the ancient syllable corresponding to modern] *ha* sometimes changed into *wa*, then we presumably also have to allow that [the ancient syllables corresponding to] *hi/he/ho* sometimes changed into *wi/we/wo* and then into *i/e/o*, as in *shiranu-i* 不知火 'sea fire' [cf. /hi/ 火 'fire'], in *shiri-e* 後方 'behind' [cf. OJ *pye* 'area'¹⁶⁹], and in *i-o* 五百 '500' [cf. OJ *po* 'hundred'¹⁷⁰] and *ho-no-o* 'flame' 炎 [cf. /ho/ 穗 '(grain) ear'.¹⁷¹ Leaving aside the debate about whether the consonant *b* existed in ancient Japanese, did the *b* of *rendaku* perhaps develop via the aforementioned intermediate stage of *w*? Or did the ancient sound corresponding to modern *h* and *f* shift directly to *b*? This is a question that requires careful study.

Second, we usually say that the consonant *k* changes into *g* in compounds, but if we take present-day dialects into consideration, there are some regions in

which this voiced consonant is pronounced *g* and other regions in which it is pronounced *ng*. In the *ng* regions, even elements in which *g* is not due to rendaku (like the *gaku* in *on-gaku* 音楽 'music') are often pronounced with *ng*.¹⁷² If we are not aware of this difference in pronunciation and of the fact that each pronunciation has its own separate history of development, we will end up arguing about which is right or better or about which is easier to pronounce.

(Just as I was completing this manuscript, I was fortunate enough to see the article on rendaku by Yamada Yoshio that appeared in this journal in 1904. Since his arguments are cogent, and since many of the points he makes complement what I say here, I highly recommend his article to the reader.)¹⁷³

7 Lyman's Rendaku Research from a Modern Perspective

7.1 Introduction

Lyman's 1894 article (Chapter 5) touched on many of the factors that phonologists today cite routinely in discussions of rendaku, although some of Lyman's suggestions are little more than hints. This chapter will explore how well these suggestions have held up under subsequent scrutiny, but it is not a comprehensive survey of rendaku research. Researchers have identified a number of potential factors that, as far as we can tell, Lyman never imagined, and I will mention several of these in passing but will not discuss most of them in any detail.¹

The remaining sections of this chapter correspond to Lyman's 1894 proposals in the following way. I treat the most influential proposal, Lyman's Law, in §7.2 – the longest section in the chapter. In §7.3 I evaluate Lyman's claims about Sino-Japanese elements and touch briefly on the more general problem of vocabulary stratification. In §7.4 I discuss compounds containing verb and adjective elements, and in §7.5 I take up reduplicated words, including those that involve mimetic elements. In §7.6 I consider Lyman's intimation that coordinate compounds resist rendaku. In §7.7 I reiterate the intractable irregularity of rendaku and call attention to the underappreciated fact that many individual compounds are variable in the sense that a form with rendaku and a form without rendaku coexist. In §7.8 I assess some suggestions about interactions between rendaku and semantics, including Lyman's thoroughly unconvincing claim that there is a consistent semantic distinction between compounds with rendaku and those without. The chapter ends with a concluding summary in §7.9.

7.2 Lyman's Law

7.2.1 Inhibitor Consonants

As first mentioned in §1.3, a non-initial voiced obstruent in a morph seems to make that morph immune to rendaku, and this constraint is usually called Lyman's Law. For example, /tama/ 玉 'ball' alternates with /dama/, as in /me+dama/ 目玉 'eyeball', but /taba/ 束 'bunch' does not alternate with */daba/ (cf. /hana+taba/ 花束 'bunch of flowers'). As we saw in §2.4, Lyman was not the first person to discover this regularity, although there is little doubt that he discovered it independently.

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The statement of Lyman's Law in the paragraph just above differs in one significant way from what Lyman (1894:161) actually wrote. As Ogura (1910:11) pointed out near the beginning of his critique (see §6.2), Lyman included /p/ on his list of consonants that inhibit rendaku. Needless to say, Modern Tōkyō /p/ is not realized as a voiced obstruent, and Ogura's reaction was that Lyman must have been misled by traditional Japanese terminology. As mentioned in §4.6, Lyman (1878:19) used the terms *impure sounds* and *half impure sounds* as translations of *dakuon* 濁音 (i.e., moras beginning with a voiced obstruent) and *handakuon* 半濁音 (i.e., moras beginning with /p/). In his rendaku article (Lyman 1894:160; see §5.2), he said that the everyday Japanese term for the rendaku counterpart of a voiceless obstruent is *nigori* 濁り ("the turbid, or impure form, of its corresponding surd"), and he used the label *half nigori* for /p/.² Ogura concluded that Lyman had mistakenly categorized "half" voiced /p/ as a kind of voiced sound, and I agree (Vance 2007a:157). Not only did Lyman list /p/ as one of the consonants that inhibits rendaku, he counted some instances of /p/ as manifestations of rendaku. In his discussion of examples ending with a Sino-Japanese element (Lyman 1894:162–163; see §5.2), he said that "the *nigori*" occurs in 287, including 120 that "change *nh* or *nf* to *mp* (half *nigori*)." Lyman did not list these 120 items, but it is clear that what he had in mind were words like /geN·poN/ 原本 'original book' (cf. /hoN/ 本 'book').³ This word appears as a headword in the 1872 second edition of Hepburn's dictionary (H2), which was Lyman's principal source of examples (§5.1), so it was probably one of the 120 items that Lyman counted.

Although most modern linguists just ignore /p/ when discussing rendaku and Lyman's Law, it is worth pointing out that historical developments have coincidentally left modern Tōkyō Japanese with almost no examples of rendaku in an element containing a medial /p/. In the native vocabulary (except for mimetic elements), most instances of morph-medial ^{OJ}/p/ weakened and eventually disappeared, although they remain as ^{MT}/w/ when the immediately following vowel is ^{MT}/a/. Typical examples are ^{MT}/nae/ 苗 'seedling' (cf. ^{OJ}/nape/) and ^{MT}/nawa/ 縄 'rope' (cf. ^{OJ}/napa/).⁴ As a result, in modern Tōkyō Japanese compounds, second elements (E2s) with medial /p/ are mostly recent (i.e., non-Chinese) loans (e.g., /teHpu/ 'tape' in /ji·ki+teHpu/ 磁気テープ 'magnetic tape'), mimetic elements (e.g., /čapo/ in /čapo+čapo/ ちゃぽちゃぽ 'slosh-slosh'), and Sino-Japanese binoms (e.g., /keN·poH/ 'constitution' in /kyuH+keN·poH/ 旧憲法 'former constitution'). It is well known that E2s in these three categories resist rendaku, as we will see below in §7.3 and §7.5. Sino-Japanese binoms are not ordinarily considered monomorphemic, of course, but they behave like monomorphemic native elements with respect to rendaku, as we will see in more detail in §7.3.2.

Lyman cited only one exception to his own version of Lyman's Law, and the element with *rendaku* in that example contains a medial /p/, not a medial voiced obstruent: /ama+gaQpa/ 雨合羽 'rain cloak' (Lyman 1894:162; see §5.2). The two elements in this compound are native /ama/ (~/ame/) 'rain' and borrowed /kaQpa/ 'poncho' (a loan from Portuguese), and this /kaQpa/ is one of a very small number of non-Chinese borrowings that have been affected by *rendaku* (see §7.3.1).

Quite a few Sino-Japanese binoms are also susceptible to *rendaku* when they occur as non-initial elements in longer compounds (see §7.3.2), and one that contains a medial /p/ is /teQ·poH/ 鉄砲 'gun'.⁵ This binom shows *rendaku* in the longer compounds listed below in Table 7.1, all of which appear in H2.

Table 7.1: Compounds Ending in /teQ·poH/~ /deQ·poH/ 'gun'.

COMPOUND	ENTRY IN HEPBURN 1872			
	STATUS	ROMANIZATION	KANJI	DEFINITION
/kara+deQ·poH/ 空鉄砲 'unloaded gun'	s.v. <i>kara</i>	<i>karadeppō</i>	—	an unloaded gun
/cuki+deQ·poH/ 突鉄砲 'toy blowgun'	headword	<i>tsuki-deppō</i>	—	a popgun
/no+deQ·poH/ 野鉄砲 'empty boasting'	headword	<i>no-deppō</i>	野鉄砲	used only fig. for empty talk, a lie, empty boasting, bragging
/mizu+deQ·poH/ 水鉄砲 'water pistol'	headword	<i>midzu-deppō</i>	唧筒	a squirt, syringe

These four compounds are all exceptions to Lyman's version of Lyman's Law, but he somehow overlooked them. It is not surprising that he missed the last example, since the kanji and the definition in Hepburn's entry obscure the connection to /teQ·poH/ 'gun'.⁶ It is also understandable, perhaps, that he missed the first example, since Hepburn listed it only as a sub-entry under the headword /kara/ 空 'empty'. The second and third examples, on the other hand, are harder to explain away. In short, the compounds in Table 7.1 are four additional counterexamples to the claim that element-medial /p/ inhibits *rendaku*, and Lyman should have cited at least two of them.

H2 also lists several other words that begin with a voiceless obstruent other than /p/ and contain a medial /p/. Most of these are complex words (i.e., Sino-Japanese binoms, other types of compounds, or derivatives), and a few of them are attested as E2s in longer compounds. Some of these longer compounds are attested with rendaku, as shown in Table 7.2.⁷ None of the longer compounds in the table is in common use today, and none of them appears in H2, so Lyman cannot be faulted for failing to find these additional counterexamples to his claim that /p/ inhibits rendaku.⁸

Table 7.2: Other E2s with Medial /p/ that Show Rendaku (S) = Sino-Japanese; N = native Japanese).

E1	E2	COMPOUND
/oH/ 'large'	/seQpa/ 'metal sword guard' SJ: /secu/~ /seQ/ 'cutting' N: /ha/~ /ba/~ /pa/ 'feather'	/oH+seQpa/~ /oH+zeQpa/ 大切羽 'large <i>seppa</i> '
/hana/ 'nose'	/šiQpei/ 'filliping' SJ: /šicu/~ /šiQ/ 'bamboo' SJ: /hei/~ /pei/ 'cane'	/hana+šiQpei/ 鼻竹篋 'filliping on the nose'
/iši/ 'stone'	/koQpa/ 'wood chip' N: /ki/~ /ko/ 'wood' N: /ha/~ /ba/~ /pa/ 'edge'	/iši+goQpa/~ /iši+koQpa/ 石木っ端 'stone chip'
/uo/ 'fish'	/seQpoH/ 'sermon' SJ: /secu/~ /seQ/ 'explanation' SJ: /hoH/~ /poH/ 'law'	/uo+seQpoH/~ /uo+zeQpoH/ 魚説法 'fish sermon'

Many other longer compounds, including those in Table 7.3, are similar to those in Tables 7.1 and 7.2 but are attested only without rendaku. The E2s in Table 7.3 are complex words listed in H2 that begin with a voiceless obstruent other than /p/ and contain a medial /p/. The longer compounds are also listed in H2, but they all involve the juxtaposition of two synonyms. Such words are a type of coordinate compound, and as mentioned above in §7.1, rendaku is disfavored in coordinate compounds (see also §7.6 below). Furthermore, according to *NHK*, the first two longer compounds are **accentually non-unified**, that is, each is pronounced as two accent phrases: /šiho⁺H|haQpo⁺H/~ /ši⁺hoH|haQpo⁺H/, /ši⁺Ntai|ha⁺Qpu/~ /ši⁺Ntai|haQpu/ (using a broken vertical line to mark a boundary between accent phrases within the same major phrase).⁹ Not surprisingly, an accent phrase boundary always blocks rendaku at the beginning of the immediately following element. The third longer compound in Table 7.3 is not listed in *NHK* or in *Meikai*, which strongly suggests that it has dropped out of common use.

In fact, none of the three longer compounds is familiar enough to present-day speakers to appear in medium-size dictionaries (e.g., Kondō and Takano 1986). In any case, given their semantics and their accentual behavior, the longer compounds in Table 7.3 are not really comparable to the compounds ending in /teQ·poH/~ /deQ·poH/ in Table 7.1.¹⁰

Table 7.3: Compounds without Rendaku that Contain Medial in /p/ E2.

COMPOUND	ENTRY IN HEPBURN 1872	
	STATUS	ROMANIZATION
/ši·hoH+haQ·poH/ 四方八方 'in every direction'	s.v. <i>happō</i> s.v. <i>shi-hō</i>	<i>shi-hō happō</i> <i>shihō-happō</i>
/šiN·tai+haQ·pu/ 身体髮膚 'whole body'	s.v. <i>happu</i>	<i>shin-tai happu</i>
/hiH·ki+heN·pa/ 最眞偏頗 'prejudice'	s.v. <i>hem-pa</i>	<i>hiiki hempa</i>

There are several other potentially relevant examples that are in common use today and that are attested only without rendaku, but none of these is listed in H2, and most appear to have been coined after 1872, that is, after H2 was published. The compound /kiN·yuH+hiQ·paku/ 金融逼迫 'tight credit' is typical. It consists of two Sino-Japanese binoms, and the initial /h/ and medial /p/ in E2 make it potentially relevant, but the first *NKD* attestation for this word is dated 1891. E2 (/hiQ·paku/ 'stringency') appears as a headword in H2, but E1 does not. If we restrict our attention to examples with a Sino-Japanese binom E2 that contains a medial /p/ and is listed as a headword in H2, then, excluding the three examples in Table 7.3, there are fewer than 50 longer compounds listed in *NKD*, involving only 15 different E2s.¹¹ If we further limit our search to longer compounds that are common enough today to be listed in a medium-size dictionary (Kondō and Takano 1986) and that have an *NKD* attestation earlier than 1872, the sole example is /kiN·joH+teQ·peki/ 金城鉄壁 'impregnable fortress'. E2 (/teQ·peki/ 'hard wall') appears as a headword in H2, but E1 does not.

To summarize, Lyman had very little evidence for including element-medial /p/ on his list of rendaku-inhibiting consonants. As already noted, he was aware that the recent borrowing /kaQpa/ shows rendaku in /ama+gaQpa/ 雨合羽 'rain cloak'. If we speculate that he was also aware of the examples in Table 7.3 and, despite their coordinate structure, construed them as support for his claim, he would have had one example with rendaku and three examples without. In short, the longer compounds listed in H2 made a very weak case for Lyman's

claim, and the case would have been even weaker if Lyman had not overlooked the four examples ending in /deQ·poH/ in Table 7.1.

It appears that Lyman simply jumped to the conclusion that an element-medial /p/ must inhibit rendaku, just as an element-medial voiced obstruent does. It is, however, easy to understand the impulse to group /p/ together with the voiced obstruents. As noted in §1.1, /p/ does not participate in the rendaku alternations in the sense that, even though it is realized as a voiceless obstruent, rendaku does not pair it with a voiced partner. Elements that begin with /p/ word-initially are either mimetic (e.g., /paku/ in /paku+paku/ ぱくぱく ‘munch-munch’) or recent borrowings (e.g., /pai/ ‘pie’ in /unagi+pai/ うなぎパイ ‘eel pie (cookie)’), so we would not expect them to be susceptible to rendaku regardless of their initial phoneme (see §7.3 below). Nonetheless, just like an element-initial voiced obstruent, an element-initial /p/ makes rendaku impossible. Needless to say, /p b d z ʃ g/ is a phonetically unnatural class, but it captures Lyman's view. Using modern examples to illustrate, we can say that rendaku is irrelevant in /woHtaH+poro/ ウォーターポロ ‘water polo’ and in /dobu+doro/ 溝泥 ‘ditch mud’ for what Lyman would have considered the same reason (cf. /poro/ ‘polo’, /doro/ ‘mud’).

Interestingly, recent experimental work by Kawahara and Sano (2016) shows that present-day native speakers seem to treat /p/ and voiced obstruents alike in triggering the optional devoicing of underlyingly voiced “geminate” (i.e., sequences of the moraic obstruent /Q/ followed by a voiced obstruent) within the same element. (Such sequences are confined to recent loans.) Many researchers construe this optional devoicing as a manifestation of Lyman's Law (Nishimura 2006; Kawahara 2016:43) by interpreting Lyman's Law as a subcase of the OCP (**Obligatory Contour Principle**).¹² On this basis, Kawahara (2018) suggests that it might be better to view rendaku as an orthographic phenomenon rather than as a phonological phenomenon. Lyman's Law could then be reinterpreted as a constraint blocking a second diacritic (i.e., *dakuten* (゛) or *handakuten* (゜)) in an element that already has a diacritic in its kana spelling. As we have seen in this section, however, there is no real evidence in the existing vocabulary for the idea that the consonant /p/ or the diacritic (゜) inhibits rendaku. Furthermore, the OCP interpretation of Lyman's Law is controversial. I will continue to assume that rendaku is at least partly phonological, but there is no denying the nagging doubt about the role of orthography.¹³

7.2.2 Inhibitor Consonant Location

Returning to the familiar modern version of Lyman's Law, which says that only voiced obstruents inhibit rendaku, it has been suggested that a voiced obstruent has this inhibiting effect only if it is in the mora immediately following the potential rendaku site and not if it is in a later mora.¹⁴ According to this restricted version of Lyman's Law, rendaku would never occur in elements like /suzume/ 雀 'sparrow' and /kujira/ 鯨 'whale', but it might occur in elements like /tokage/ 蜥蜴 'lizard' and /hicuji/ 羊 'sheep'. Lyman himself claimed explicitly that the distance between the morpheme boundary and the voiced obstruent was irrelevant. In the fourth paragraph of his rendaku article (see §5.2), he wrote that rendaku does not apply "when *b, d, g, j, p* or *z* already occurs **anywhere** in the second part of the compound" (Lyman 1894:161; emphasis added), and he repeated this claim on the following page: "*B, d, g, j, p*, or *z* in the next syllable . . . or **any following one** . . . prevents the nigori" (Lyman 1894:162; emphasis added). The existing vocabulary does not give us any reason to think that Lyman's statement needs to be weakened by incorporating a distance effect. The examples in Table 7.4 are representative.¹⁵

Table 7.4: E2s Containing Voiced Obstruent in 2nd Mora or 3rd Mora.

2nd-MORA VOICED OBSTRUENT
/suzume/ 雀 'sparrow'
/umi+suzume/ 海雀 'murrelet' (cf. /umi/ 'sea')
/beni+suzume/ 紅雀 'tiger finch' (cf. /beni/ 'rouge')
/ko+suzume/ 子雀 'baby sparrow' (cf. /ko/ 'child')
/kujira/ 鯨 'whale'
/ha+kujira/ 齒鯨 'toothed whale' (cf. /ha/ 'tooth')
/hige+kujira/ 髭鯨 'baleen whale' (cf. /hige/ 'moustache')
/iwaši+kujira/ 鰯鯨 'sei whale' (cf. /iwaši/ 'sardine')
3rd-MORA VOICED OBSTRUENT
/tokage/ 蜥蜴 'lizard'
/cuno+tokage/ 角蜥蜴 'horned toad' (cf. /cuno/ 'horn')
/doku+tokage/ 毒蜥蜴 'poisonous lizard' (cf. /doku/ 'poison')
/oH+tokage/ 大蜥蜴 'monitor lizard' (cf. /oH/ 'big')
/hicuji/ 羊 'sheep'
/ko+hicuji/ 子羊 'lamb' (cf. /ko/ 'child')
/merino+hicuji/ メリノ羊 'merino sheep'
/moHko+hicuji/ 蒙古羊 'Mongol sheep' (cf. /moHko/ 'Mongolia')

These examples suggest that it is just the presence of a voiced obstruent in an E2 and not its location that matters. In other words, Lyman's Law seems to be a constraint that prevents rendaku whenever the result would be a second voiced obstruent in an element.¹⁶ To illustrate with the examples in Table 7.4, Lyman's Law rules out all four of the hypothetical voiced allomorphs: ^ɣ/zuzume/ for 'sparrow', ^ɣ/gujira/ for 'whale', ^ɣ/dokage/ for 'lizard', and ^ɣ/bicuji/ for 'sheep'.

Despite the lack of evidence for a distance effect in the existing vocabulary, a nonce-word survey carried out in the late 1970s provided weak support for such an effect as a factor in the behavior of some speakers (Vance 1979: 100–106, 1980b:258–259). The participants were asked to choose between a pronunciation with rendaku and a pronunciation without rendaku for examples like /kawa+sabari/ versus /kawa+zabari/, /kawa+sotogi/ versus /kawa+zotogi/, and /kawa+sawasobi/ versus /kawa+zawasobi/, each of which consists of /kawa/ 川 'river' followed by a made-up E2. Some of the participants did show a statistically significant distance effect, but the effect size was small, and the test items were not designed to avoid possible confounds. Ihara and Murata (2006:21–22) report that larger-scale studies done in 1984 and 2005 were able to replicate the effect, but a study by Kawahara (2012), using a different methodology, found no effect. I suspect that the apparent distance effect in the earlier studies was due to some other variable that was uncontrolled.

7.2.3 Three-Element Compounds

Compounds that consist of more than two elements raise an interesting question about Lyman's Law. Figure 7.1 shows the semantic constituent structure of two three-element compounds, each containing a morpheme meaning 'fire' as its second element. These are obscure words, but they are both listed in authoritative dictionaries, and they provide a nice illustration of a general pattern.¹⁷

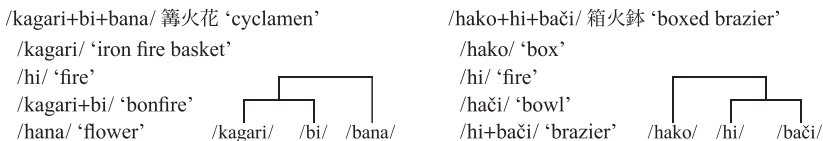


Figure 7.1: Three-Element Compounds with Different Constituent Structure.

Examples like those in Figure 7.1 suggest that Lyman's Law applies to each layer of compounding.

As the branching diagram on the left in Figure 7.1 shows, the three-element compound /kagari+bi+bana/ 篝火花 ‘cyclamen’ involves two layers. The inner (i.e., lower) layer is a combination of the element meaning ‘iron fire basket’ with the element meaning ‘fire’, and since there is no non-initial voiced obstruent in the second element (/hi/~bi/ 火 ‘fire’), /kagari+bi/ 篝火 ‘bonfire’ does not violate Lyman’s Law. The outer (i.e., higher) layer is a combination of the compound /kagari+bi/ ‘bonfire’ with the element meaning ‘flower’. In other words, /kagari+bi/ is a constituent of /kagari+bi+bana/, and we can use braces to represent the constituent structure in a way that is equivalent to the branching diagram in Figure 7.1: {{/kagari+bi/}+/bana/}. Here again, since there is no non-initial voiced obstruent in /hana/~bana/ 花 ‘flower’, {{/kagari+bi/}+/bana/} does not violate Lyman’s Law.

Now compare the branching diagram on the right in Figure 7.1. The three-element compound /hako+hi+bači/ 箱火鉢 ‘boxed brazier’ also involves two layers of compounding, but in this case the inner layer is a combination of the element meaning ‘fire’ with the element meaning ‘bowl’. Since there is no non-initial voiced obstruent in the second element (/hači/~bači/ 鉢 ‘bowl’), /hi+bači/ 火鉢 ‘brazier’ does not violate Lyman’s Law. The outer layer is a combination of the element meaning ‘box’ with the compound /hi+bači/ ‘brazier’: {/hako/+{/hi+bači/}}. Notice that /hi+bači/ contains the non-initial voiced obstruent /b/. If we assume that Lyman’s Law applies to each layer of compounding, the voiced allomorph /bi/ of the morpheme meaning ‘fire’ would be a violation: *{/hako/+{/bi+bači/}}.

There is, however, another proposed constraint on *rendaku* that would rule out forms like *{/hako/+{/bi+bači/}} without invoking Lyman’s Law. Otsu (1980: 217–222) was the first to propose this constraint, and he called it the **Right-Branch Condition**. It says that *rendaku* can only appear in a morph that is on a right-side branch in a diagram like the ones in Figure 7.1 above. The examples in Figure 7.2 illustrate.



Figure 7.2: Absence of *Rendaku* on a Left Branch.

As the top diagram in Figure 7.2 shows, the three-element compound /oH+hana+bi/ 大花火 ‘grand fireworks’ is a combination of /oH/ ‘big’ and /hana+bi/ ‘fireworks’ at the outer layer of compounding: $\{/oH/+\{/hana+bi/\}/$. Note that /hana+bi/ contains a non-initial voiced obstruent, since its second element is the voiced allomorph /bi/ of the morpheme meaning ‘fire’. If we assume that Lyman’s Law applies to each layer of compounding, as suggested above, the voiced allomorph /bana/ of the morpheme meaning ‘flower’ would be a violation: $\times\{/oH/+\{/bana+bi/\}/$.

Now compare the bottom example in Figure 7.2. As the diagram shows, /hacu+kao+awase/ 初顔合わせ ‘first meeting’ has the same constituent structure as $\{/oH/+\{/hana+bi/\}/$ 大花火 ‘grand fireworks’: $\{/hacu/+\{/kao+awase/\}/$. But there is no voiced obstruent in /kao+awase/, so we cannot attribute the absence of rendaku in /kao/ to Lyman’s Law. Notice, however, that /kao/ is on a left-side branch in the diagram, so rendaku would violate the Right-Branch Condition: $\times\{/hacu/+\{/gao+awase/\}/$. It is well known that some native Japanese morphemes are idiosyncratically immune to rendaku (Kuroda 2002:340; Irwin 2009:192–193, 2016:105), but the morpheme meaning ‘face’ is not one of them. The voiced allomorph /gao/ appears in many common words, including /maru+gao/ 丸顔 ‘round face’ (cf. /maru/ ‘circle’) and /yoko+gao/ 横顔 ‘profile’ (cf. /yoko/ ‘side’).¹⁸ The Right-Branch Condition predicts the absence of rendaku not only in the middle element of $\{/hacu/+\{/kao+awase/\}/$ (the bottom example in Figure 7.2) but also in the middle elements of $\{/oH/+\{/hana+bi/\}/$ (the top example in Figure 7.2) and $\{/hako/+\{/hi+bači/\}/$ (the right-side example in Figure 7.1), since each middle element is on a left branch.

If the Right-Branch Condition is a genuine constraint on rendaku, it predicts that the presence or absence of rendaku can sometimes serve to signal the constituent structure in compounds with more than two elements. Otsu (1980: 218–219) cites the two examples in Figure 7.3 to make this point. Both contain the three elements /nuri/ 塗り ‘lacquering’ (A), /haši~/baši/ ‘chopsticks’ (B), and /ire/ 入れ ‘putting in; container’ (C). Rendaku in B would violate the Right-Branch Condition if the constituent structure is $\{A\{BC\}\}$ but not if the constituent structure is $\{\{AB\}C\}$.¹⁹

The top example in Figure 7.3 contains the voiced allomorph /baši/ of the morpheme meaning ‘chopsticks’ on a right branch in the constituent structure. The bottom example contains the voiceless allomorph /haši/ on a left branch in the constituent structure. Both of the three-element examples in Figure 7.3 are novel compounds, but it does not seem at all implausible to suppose that a native speaker of Japanese could coin them by following productive morphological patterns.

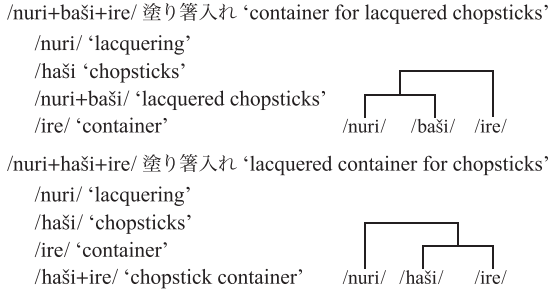


Figure 7.3: Rendaku on a Right Branch.

The important question to ask about the examples like those in Figure 7.3 is whether the suggested relationship between rendaku and constituent structure corresponds to the intuitions of present-day native speakers of Japanese. Some speakers have intuitions that are consistent with these examples, but I suspect that they are not in the majority, and as Kozman (1998) and Kumagai (2014) report, the responses of ordinary speakers on experimental tasks also cast serious doubt on the psychological status of the Right-Branch Condition.²⁰ Perhaps the Right-Branch Condition is a genuine constraint for some speakers but not for others.

There are many apparent exceptions to the Right-Branch Condition in the existing vocabulary (Vance 2007b:224–226), and a few are listed below in Table 7.5. For each of these three-element words there is also an independent word consisting of the last two elements, so the constituent structures given for the three-element words are uncontroversial.²¹

Otsu (1980:211–213,220) suggests handling examples like those in Table 7.5 by distinguishing between what he calls “loose” and “strict” compounds. The basic idea is that a loose compound counts as two elements for the Right-Branch Condition, while a strict compound counts as a single element. This proposal has some genuine intuitive appeal, although I do not think it ultimately succeeds in solving the problem. Otsu says that a loose compound has three characteristics: (1) its accent conforms to the general rules for compounds, (2) its meaning is predictable from the meanings of its elements, and (3) it exemplifies a relatively productive pattern. The third criterion is not very helpful, since there is no clear dividing line between patterns that are relatively productive and those that are not, and the second criterion (semantic transparency) is also a matter of degree. The first criterion is problematic because of uncertainty

Table 7.5: Apparent Exceptions to the Right-Branch Condition.

{/i/+{/zaka+ya/}}	居酒屋 ‘tavern’
cf. /i/ ‘staying’, /saka/~ /sake/ ‘saké’, /ya/ ‘shop’	/saka+ya/ ‘saké shop’
{/hito/+{/zuki+ai/}}	人付き合い ‘socializing with people’
cf. /hito/ ‘person’, /cuki/ ‘attaching’, /ai/ ‘matching’	/cuki+ai/ ‘socializing’
{/ko/+{/zeri+ai/}}	小競り合い ‘skirmish’
cf. /ko/ ‘small’, /seri/ ‘vying’, /ai/ ‘matching’	/seri+ai/ ‘competition’
{/oH/+{/buro+šiki/}}	大風呂敷 ‘big wrapping cloth’ ²²
cf. /furo/ ‘bath’, /šiki/ ‘laying’	/furo+šiki/ ‘wrapping cloth’
{/šita/+{/bira+me/}}	舌平目 ‘sole’
cf. /šita/ ‘tongue’, /hira/ ‘flat’, /me/ ‘eye’	/hira+me/ ‘flounder’

about exactly what the general rules are in modern Tōkyō Japanese for predicting the accent of a two-element compound on the basis of the accent that its second element has as an independent word.²³ For E2s that are three moras or longer, the patterns are fairly straightforward, but for shorter E2s, the situation is more chaotic.

To illustrate with a simple example, using a superscript plus sign to mark the boundary between the elements of a strict compound, the claim would be that rendaku in /inu+go⁺ya/ 犬小屋 ‘dog house’ does not violate the Right-Branch Condition. Provided that /ko⁺ya/ ‘hut’ is a strict compound, it functions as a single element with respect to rendaku, as in Table 7.4 below.


/inu+go ⁺ ya/ 犬小屋 ‘doghouse’	
/inu/ ‘dog’	
/ko/ ‘small’	
/ya/ ‘house’	
/ko ⁺ ya/ ‘hut’	

Figure 7.4: Rendaku in a Strict-Compound Constituent.

Needless to say, it will not do just to apply the label “strict” to all E2s that are compounds and can undergo rendaku. Unless we can determine independently of rendaku whether a compound is strict or loose, the reasoning is circular. In the case of /ko+ya/ 小屋 ‘hut’, it is not easy to decide whether the suggested criteria apply. It seems fair to say that it is close to the transparent end of the semantic continuum, and adding /ko/ to a noun base is a quite productive pattern, but /ya/ does not

occur as an independent word in present-day Tōkyō Japanese, so there is no basis for deciding whether the accent is predictable from the accent of its second element. In any case, accent dictionaries (*NHK, Meikai*) recognize both unaccented /koya/ and final-accented /koya⁺/ as correct. In general, we cannot expect that the semantic transparency criterion and the accent criterion will always point in the same direction. For example, /nodo+bo⁺toke/ 喉仏 ‘adam’s apple’ (cf. /no⁺do/ ‘throat’, /hotoke/~/hotoke⁺/ ‘Buddha’) has the predicted accent (on the first syllable of the second element) for a second element that is final-accented or unaccented as an independent word, but this compound is clearly not at the transparent end of the semantic continuum. On the other hand, many Tōkyō speakers have /kita+ame⁺rika/ 北アメリカ ‘North America’ (cf. /kita/~/kita⁺/ ‘north’, /amerika/ ‘America’) instead of predicted /kita+a⁺merika/, despite the fact that this compound is semantically transparent.²⁴

It is tempting to invoke additional criteria for classifying compounds as strict. As mentioned in the paragraph just above, /ya/ 屋 ‘house’ does not occur free, and neither does /ko/ 小 ‘small’, unless we make the dubious assumption that present-day speakers see its possible etymological connection with /ko/ 子 ‘child’ (Martin 1987:452) as a synchronically live relationship. It seems intuitively reasonable to say that a compound containing a bound element is strict, and this would provide a rationale for putting semantically transparent /ko+ya/ ‘hut’ in the strict category.²⁵ As we will see in more detail below in §7.3.2, some Sino-Japanese binoms show *rendaku* as E2s in longer compounds. Examples involving /teQ·poH/~ /deQ·poH/ 鉄砲 ‘gun’ have already appeared above in Table 7.1 in §7.2.1, and another typical example is /iso+giN·čaku/ 磯巾着 ‘sea anemone’ (cf. /iso/ ‘rocky shore’, /kiN·čaku/ ‘drawstring pouch’). Such examples violate the Right-Branch Condition if we treat binoms as branching, but binoms tend to be semantically opaque, and even when they are transparent, the Sino-Japanese morphs they contain are typically bound. It seems reasonable to treat them as a type of strict compound.

Another possible criterion for classifying a compound as strict is the appearance of a covered-form vowel at the end of E1. A small number of native Japanese noun morphemes end with one vowel word-finally (including as an independent word) but, sometimes, with a different vowel non-word-finally (Martin 1952:85–86, 1987:48; Vance 1987:152–155). For example, we see /e/ at the end of /ame/ 雨 ‘rain’ and at the end of /niwaka+ame/ にわか雨 ‘sudden rain’, but we see /a/ immediately preceding the boundary in /ama+mizu/ 雨水 ‘rainwater’. I will refer to the vowel at the end of the word-final allomorph (e.g., the /e/ in /ame/) as the **exposed-form** vowel, and I will refer to the vowel at the end of the other allomorph (e.g., the second /a/ in /ama/) as the **covered-form** vowel.²⁶ Among the morphemes that exhibit this kind of exposed–covered

vowel alternation, the covered-form vowel in non-word-final position is the norm for some and the exception for others, but none of the morphemes behaves completely consistently. For example, we see the exposed-form vowel /e/ immediately preceding the boundary in /ame+furi/ 雨降り 'rain falling'.

It seems plausible that a covered-form vowel at the end of E1 might be a reliable signal that a compound is strict, but there are too few relevant examples to make a persuasive case for this idea. To be relevant, a compound must have the constituent structure {A{BC}}, and BC as an independent word must begin with a voiceless obstruent other than /p/, that is, with a voiceless consonant that has a rendaku partner (see §7.2.1 above). Also, aside from the target consonant for rendaku (i.e., the initial consonant in B), there must be no voiced obstruent either in B or in C. If there were a voiced obstruent in B or C, any resistance to B-initial rendaku in {A{BC}} could be attributed to Lyman's Law. (It is possible, of course, that a two-element E2 could be strict but resist rendaku for no particular reason, just as some simplex E2s are idiosyncratically immune to rendaku.) Finally, B must end with a covered-form vowel. A systematic search turned up only two examples that meet all these conditions and are also common enough vocabulary items to be listed in a medium-size dictionary (Kondō and Takano 1986). One of these two is the first example listed above in Table 7.5: {/i/+{/zaka+ya/}} 居酒屋 'tavern'. The other has the same E2: {/cukuri/+{/zaka+ya/}} 造り酒屋 'saké brewer'. The B element, /sake/~saka/ 'saké', ends with the covered-form vowel /a/, and the independent word /saka+ya/ 'saké shop' begins with the voiceless obstruent /s/ and contains no voiced obstruents. Both E1s are deverbal (cf. /i-ru/ 'to be, to stay', /cukur-u/ 'to make').

Both of the {A{BC}} compounds just cited have B-initial rendaku, but even if their two-element E2s are categorized as strict compounds, it is not clear whether the covered-form vowel at the end of B plays any role. The problem is that two potential factors are confounded in these examples. Both {/i/+{/zaka+ya/}} 居酒屋 'tavern' and {/cukuri/+{/zaka+ya/}} 造り酒屋 'saké brewer' contain the C element /ya/ 'house; shop', and as noted above in connection with {/inu/+{/go+ya/}} 犬小屋 'doghouse', this /ya/ does not occur as a word on its own. As a result, there is a plausible reason for treating the E2s /saka+ya/ 'saké shop' and /ko+ya/ 'hut' as strict compounds regardless of whether or not B ends in a covered-form vowel. Since there is no exposed–covered vowel alternation in the case of /ko/~go/ 'small', it is tempting to conclude that only the bound status of /ya/ is relevant in all these examples. We could bolster this conclusion by noting that /ča+ya/ 茶屋 'tea shop' consistently shows rendaku as an

E2, as in {{/ši+bai/}+{/ja+ya/}} 芝居茶屋 ‘theater tea shop’ and {/sumoH/+{/ja+ya/}} 相撲茶屋 ‘sumō tea shop’.²⁷ Sino-Japanese /ča/ ‘tea’ does not exhibit an exposed–covered vowel alternation, of course, because it is not native Japanese.

In a few cases, we could point to orthography as a reason for classifying a compound as strict. The last example in Table 7.5 above is {/šita/+{/bira+me/}} 舌平目 ‘sole’ (cf. /šita/ ‘tongue’, /hira/ ‘flat’, /me/ ‘eye’), and the compound /hira+me/ ‘flounder’ also occurs as an independent word. It seems fair to say that the meaning of /hira+me/ is not predictable from the meanings of its parts, but it is not particularly opaque, since it is easy to see the rationale for using it as a name for this kind of fish. We might back up a decision to classify /hira+me/ as a strict compound by noting that an alternative way of writing it is to use the kanji (鰯). Quite a few etymologically obvious compounds are commonly written with single kanji like this one, typically because there was a Chinese morpheme (written with a single character) that had a meaning close the meaning of the Japanese word.²⁸ We could offer this single-kanji spelling as a weak argument in support of the claim that /hira+me/ is a strict compound.

Some E2s that are compounds etymologically have entirely lost their composite structure as far as ordinary native speakers today are concerned. This kind of monomorphemicization is probably a likely diachronic fate for a strict compound. One example with a covered-form vowel at the end of an etymological E1 is /tasuke/ 助け ‘help’, which is derived from the verb /tasuke–ru/ ‘to help’. This verb is etymologically a compound of /te/~/ta/ 手 ‘hand’ and obsolete /suke–ru/ ‘to help’. The rendaku in /hito+dasuke/ 人助け ‘helping other people’ (cf. /hito/ ‘person’) cannot be a violation of the Right-Branch Condition because /tasuke/ is now a single morpheme, as the single kanji (助) suggests.²⁹ In /te+dasuke/ 手助け ‘lending a helping hand’, the E1 (which ends with the exposed-form vowel /e/) is etymologically the same as the first syllable of E2. It seems safe to say that /te+dasuke/ would be unacceptably redundant if present-day speakers analyzed both the first syllable and the second syllable as realizations of the morpheme meaning ‘hand’.

When all is said and done, it seems very unlikely that there is a workable solution to the problem of defining a strict compound in a way that does not depend crucially on rendaku (Vance 1980a:231–234). On the other hand, as noted above, there is considerable doubt about the psychological status of the Right-Branch Condition. If the constraint itself is not real, there is no need to worry about how to account for apparent exceptions.

There is no reason to suppose that Lyman had any idea that being on a right branch might be relevant, and in his sub-section 4(a) (Lyman 1894:167; see the Appendix) he cited three examples that would violate the Right-Branch

Condition if they had rendaku. These examples appear in Table 7.6 below, and all three contain Sino-Japanese /fu/ 不 'not' followed by a two-morpheme element with the last morpheme based on a verb.³⁰

Table 7.6: Lyman Examples in Which Rendaku Would Violate the Right-Branch Condition.

{/fu/+{/cuki+ai/}}	不付き合い 'lack of interaction' ³¹
cf.	/cuk-u/ 'to become attached', /a-u/ 'to come together'
	/cuki+ai/ 'interaction'
{/fu/+{/te+mawari/}}	不手回り 'lack of preparation' ³²
cf.	/te/ 'hand' /mawar-u/ 'to go around'
	/te+mawari/ 'preparation'
{/fu/+{/curi+ai/}}	不釣り合い 'imbalance'
cf.	/cur-u/ 'to suspend' /a-u/ 'to match'
	/curi+ai/ 'balance'

Nakagawa (1966:309–310) points out that rendaku almost never occurs after /fu/ 'not', but this Sino-Japanese quasi-prefix attaches much more often to Sino-Japanese E2s than to native E2s like the ones in Table 7.6. Because most Sino-Japanese E2s are immune to rendaku, as noted above in §7.2.1, they do not tell us anything about the possible influence of /fu/. For example, the Sino-Japanese binom /ki·soku/ 規則 'regulation' never appears with rendaku in words such as /šuH·gyoH+ki·soku/ 就業規則 'work regulations', so the absence of rendaku in /fu+ki·soku/ 不規則 'irregularity' is not probative. There are not many examples of /fu/ attached to a simplex native E2, but there are two that are relevant here and also common enough to be listed as headwords in a medium-size dictionary (Kondō and Takano 1986), and both have rendaku: /fu+zoroi/ 不揃い 'lack of uniformity' (cf. /soro-u/ 'to match') and /fu+barai/ 不払い 'non-payment' (cf. /hara-u/ 'to pay').³³ These two examples do not give us a lot to go on, but they certainly indicate that /fu/ is not responsible for the absence of rendaku in the three-element compounds in Table 7.6.

On the other hand, if we attribute the absence of rendaku in Table 7.6 to the Right-Branch Condition, we are left with no explanation for the fact that the E2 in the first example consistently shows rendaku in other relevant words such as /hito/+{/zuki+ai/} 人付き合い 'interacting with other people' (cf. /hito/ 'person'). If /cuki+ai/~{/zuki+ai/ 'interaction' is susceptible to rendaku because it is a strict compound, then it should behave like a single element and show rendaku following /fu/ 'not', just as /harai/~{/barai/ 'payment' does in /fu+barai/ 不払い 'non-payment'.

There is no hint in Ogura's critique (§6.2) that he thought being on a right branch might be relevant. In any case, the only item he cites in which the absence of *rendaku* might be attributed to the Right-Branch Condition is an Old Japanese word for which the morphological analysis is uncertain.³⁴

7.2.4 Exceptions to Lyman's Law

Returning now to two-element compounds, the modern Tōkyō vocabulary contains a very small number of well-known exceptions to the modern version of Lyman's Law. First, when a two-element compound contains the element /*hašigo*~/~/*bašigo*/ 梯子 'ladder' as its second element, the voiced allomorph /*bašigo*/ ordinarily appears, as in /*nawa*+*bašigo*/ 縄梯子 'rope ladder' (cf. /*nawa*/ 'rope').³⁵ In Figure 7.5, this element is written in hiragana, leaving no doubt about the intended pronunciation. On the other hand, Figure 7.6 shows that there is some variation in how present-day speakers treat this element. This word meaning 'fire escape' does not appear in *NKD*, *Kōjien*, or *Daijirin*, but it is listed as a compound under the headword /*hi*·*naN*/ 避難 'evacuation' in an authoritative Japanese-English dictionary (Watanabe et al. 2003), and the compound is written (避難はしご), with /*bašigo*/ in hiragana.³⁶ Nonetheless, the sign in Figure 7.6 has /*hi*·*naN*+*hašigo*/, with /*hašigo*/ in hiragana.³⁷



Figure 7.5: Boat Passenger Warning with /*nawa*+*bašigo*/.



Figure 7.6: Hotel Evacuation Sign with /*hi*·*naN*+*hašigo*/.

The usual kanji spelling of this element meaning 'ladder' invites a literate native speaker to analyze it as a compound containing the voiced allomorph of /ko~/go/ 子 'child' as its second element. (Etymologically, as we will see below, this analysis is probably correct.) But even if /hašigo~/bašigo/ is itself a compound, it is clearly the inner layer of compounding in /nawa+bašigo/: {/nawa+{/baši+go/}}. At the outer layer of compounding, the second of the two constituents is /baši+go/, which contains the non-initial voiced obstruent /g/. As we saw above in §7.2.3, the general pattern in a three-element compound of this form is for the second element not to show rendaku.³⁸

The voiced obstruent /g/ is in the third mora of /hašigo~/bašigo/ 梯子 'ladder', but other exceptions to Lyman's Law have a voiced obstruent in the second mora of the element that shows rendaku. A traditional name for a third son is /saburoH/ 三郎, but many third sons have names that begin with an additional element, and many of these longer names show rendaku (Kindaichi 1976:5). A typical example with rendaku is /keN+zaburoH/ 健三郎.³⁹ The name /saburoH/ itself is easily analyzable into two morphs: /sabu+roH/. The second realizes a morpheme that appears in other masculine names that reflect birth order: /iči+roH/ 一郎 (for a first son), /ji+roH/ 二郎 (for a second son), /ši+roH/ 四郎 (for a fourth son), and so on. We could say that /sabu/ and /zabu/ are allomorphs of the same morpheme as /saN/ 三 'three', with /sabu~/zabu/ occurring only before /roH/ 郎 'son'.⁴⁰ On this analysis, the name /keN+zaburoH/ would have the structure {/keN+{/zabu+roH/}}, with the non-initial voiced obstruent /b/ in the second of the two constituents at the outer layer of compounding. As we have already seen (§7.2.3), the general pattern in a three-element compound with the constituent structure {A{BC}} is for the B not to show rendaku if there is a medial voiced obstruent anywhere in BC.

Most of the Lyman's Law violations in compounds with three or more elements are due to reanalysis, and shellfish names provide some instructive examples (Suzuki 2007). Dictionaries list headwords such as /hoši+dakara+gai/ 星寶貝 'tiger cowrie' (*Cypraea tigris*; cf. /hoši/ 'star', /takara/ 'treasure', /kai/ 'shellfish') and /oH+ja.ko+gai/ 大砵磔貝 'great giant clam' (*Tridacna gigas*; cf. /oH/ 'large', /ša.ko/ 'giant clam'). As the dot in /ša.ko/ indicates, this element is a Sino-Japanese binom, at least etymologically, although neither of the two obscure kanji (砵) and (磔) is used to write any other Japanese word. In any case, the expectations would be the same even if speakers treat /ša.ko/ as unanalyzable, because binoms behave like monomorphemic elements with respect to Lyman's Law (see §7.3). Since two-element /takara+gai/ 'cowrie' and /ša.ko+gai/ 'giant clam' also exist, the constituent structures {/hoši+{/dakara+gai/}} and {/oH+{/ja.ko+gai/}} seem appropriate, but two-element /hoši+dakara/ for 'tiger cowrie' and /oH+ja.ko/ for 'giant clam' are also in use. Historically, it

appears that the three-element compounds were coined by adding the element meaning ‘shellfish’ to /hoši+dakara/ and /oH+ja-ko/. Thus, the three-element forms did not violate Lyman’s Law when they were first coined because they had the constituent structures {{/hoši+dakara/}+/gai/} and {{/oH+ja-ko/}+/gai/} (Suzuki 2007:282–288). The reanalysis was possible because /takara+gai/ and /ša-ko+gai/ exist and because there is no significant semantic difference between the two alternative constituent structures in these cases. That is, it makes sense to interpret /hoši+dakara+gai/ ‘tiger cowrie’ either as ‘star-cowrie shellfish’ or as ‘star cowrie-shellfish’. Once the {{/hoši+{/dakara+gai/}} analysis takes hold, new shellfish names of the form X+/dakara+gai/ can be created by analogy, even when there is no existing form X+/dakara/ (Suzuki 2007:291–292).

Suzuki (2005) proposes a similar sequence of events for the origin of compounds ending in /bašigo/ (~/hašigo/ ‘ladder’), such as /nawa+bašigo/ 繩梯子 ‘rope ladder’ (see Figure 7.5 above). The crucial lexical item historically seems to have been the now obsolete compound /nobori+baši/ 登梯 ‘(climbing) ladder’ (earliest *NKD* citation 1613), which consists of /nobori/ ‘climbing’ (cf. /nobar-u/ ‘to climb’) and obsolete /haši/~baši/ 梯階 ‘ladder; stairs’.⁴¹ This E2 is etymologically identical to /haši/ 橋 ‘bridge’ (Martin 1987:115,400), which remains in use as an independent word that no longer carries the meaning ‘ladder’ or ‘stairs’. As mentioned above, the modern word for ‘ladder’, /hašigo/ 梯子 (earliest *NKD* attestation 1633), probably originated as a diminutive containing /ko/~go/ ‘child’ as its E2 (Martin 1987:115). If this same diminutive pattern was at least to some extent productive in the 17th century, it is possible that when three-element /nobori+baši+go/ (earliest *NKD* citation 1675) was first coined, it had the constituent structure {{/nobori+baši/}+/go/}, which would not have violated Lyman’s Law.⁴² The existence of /haši+go/, however, allowed speakers to reanalyze /nobori+baši+go/ as {{/nobori+{/baši+go/}} and create other words of the form X+/baši+go/ by analogy (Suzuki 2007:288). One example is /daN+baši+go/ 段梯子 ‘staircase’ (earliest *NKD* attestation 1748; cf. Sino-Japanese /daN/ ‘step’). The A+B compound is unattested in this case: */daN+baši/.

Once /haši+go/ ousted /haši/ as the ordinary word for ‘ladder’, there was little motivation for analyzing /haši+go/ as a compound, and for ordinary speakers it was probably monomorphemic: /hašigo/~bašigo/. It is possible, of course, that at least some speakers continued to think of it as complex, identifying /haši/ with the word meaning ‘bridge’ or treating it as a cranberry morph, but either way, a compound of the form X+/baši(+go)/ violates Lyman’s Law. As for /nawa+bašigo/ 繩梯子 ‘rope ladder’ (earliest *NKD* attestation 1678), it is not impossible that it originated as a diminutive of /nawa+baši/ 繩橋 ‘rope bridge’ (earliest *NKD* attestation early 10th century), but it seems much more likely that X+/baši(+go)/ words provided the model, as Suzuki (2007:288) proposes.⁴³

This kind of reanalysis scenario cannot, of course, account for the names of third sons ending in /zabu+roH/ (~sabu+roH/ 三郎). There have never been actual names of the form X+/zabu/ to which /roH/ could be added, but even if there were, X+/zabu/ itself would already violate Lyman's Law; the hypothetical reanalysis of {{X+/zabu/}+/roH/} as {X+{/zabu/+/roH/}} would not create the violation.

A reanalysis scenario also cannot account for the one other frequently cited exception to Lyman's Law, namely, the no-longer-current slang verb /fuN+jibar-u/ ふん縛る 'to tie up roughly' (Kindaichi 1976:5). The first element in this word is etymologically a contraction of deverbial /fumi/ (cf. /fum-u/ 踏む 'to step on'), but /fuN/ is typically described as an unproductive prefix meaning 'roughly'.⁴⁴ The second element is an allomorph of the same verb root that appears in /šibar-u/ 縛る 'to tie up', and /u/ is an inflectional ending marking the non-past affirmative (the citation form).⁴⁵

One less frequently cited exception to Lyman's Law is {/waka+/{/šira+/ga/}} 若白髮 'prematurely gray hair', in which E1 is the root of the adjective /waka-i/ 'young' and E2 occurs independently as /šira+ga/ 'gray hair' (Vance 1987:137). This E2 is usually treated as a compound, and its first element is obviously /šira/~širo/ 'white', but its second element does not occur as a word on its own, although it may be etymologically identical to the first syllable of /kami/~gami/ 髪 'hair' (Martin 1987:435).⁴⁶ Most dictionaries list {/waka+/{/šira+/ga/}}, without rendaku, but *NHK* recognizes both pronunciations. A recent survey report (Ōta 2010: 51–52) indicates that many speakers in the Tōkyō area still use the form with rendaku, although the form without rendaku seems to be gaining ground.

One other attested exception to Lyman's Law is somewhat dubious. Kindaichi (1976:5) cites {/rei+/{/de+gami/}} 礼手紙 'letter of thanks', which combines Sino-Japanese /rei/ 'thanks' and the compound E2 /te+gami/ 'letter' (cf. /te/ 'hand', /kami/ 'paper'). *NKD* gives /reidegami/ as an alternative pronunciation under the headword /reitegami/, but this word is not listed under either pronunciation in *Kōjien* or *Daijirin*. In any case, I have never found a native speaker of Japanese who would accept the pronunciation /reidegami/ as correct.

Lyman would not have found any of these exceptions to Lyman's Law either in the 1868 first edition (H1) or in the 1872 second edition (H2) of Hepburn's dictionary. Both list headwords with romanizations representing the modern Tōkyō forms /nawa+hašigo/ for 'rope ladder' and /curi+hašigo/ for 'hanging rope ladder' (cf. /cur-u/ 吊る/釣る 'to hang'). In the corresponding *NKD* entries, the headwords both have rendaku (/nawa+bašigo/ 縄梯子, /curi+bašigo/ 釣梯子), although the older citations for the latter have /h/ (the oldest from 1717). On the other hand, since all the citations for the word meaning 'rope ladder' have /b/ (the oldest from 1678), Hepburn's /h/ is dubious, but Lyman had little choice other than to rely on what he found. Toda (1988:90) notes that

Hepburn's 1886 third edition (H3) lists /daN+bašigo/ 段梯子 'staircase' (cited above), but even if Lyman had consulted H3, he might very well have overlooked this entry. It is romanized with no hyphen as (dambashigo), no kanji are provided, and there is a misprint in the definition ("stars" instead of "stairs").⁴⁷ H1 and H2 do not list /daN+bašigo/ at all.

Hepburn did not list /fuN+ĵibar-u/ ふん縛る 'to tie up roughly', /waka+ĵiraga/ 若白髪 'prematurely gray hair', or proper names like /keN+zaburoH/ 健三郎 in any of the three editions. In short, H1 and H2 do not contain any exceptions to what present-day linguists think of as Lyman's Law (Vance 2007a:159). Lyman probably did not consult H3, but even if he had, the exception that it contains (/daN+bašigo/ 段梯子) would have been easy to miss, as explained in the paragraph just above.⁴⁸ Ogura (1910:11–12) looked both at modern Japanese and at Old Japanese (see §7.2), and he too did not find any exceptions to Lyman's Law. As far as I know, no OJ exceptions are attested (Vance 2005b:31).⁴⁹

7.3 Sino-Japanese Elements

7.3.1 Vocabulary Stratification

Lyman treated Sino-Japanese elements in his *rendaku* article (see Chapter 5) in section 2 (Lyman 1894:162–164) and in part of section 3 (Lyman 1894:165). Before discussing Sino-Japanese elements in particular, I will provide a brief overview of how the notion of vocabulary stratification has been applied to Japanese.

It is now a deeply entrenched tradition in research on Japanese phonology to assume that the etymological layers in the Japanese lexicon correspond fairly closely to categories that can be demarcated on the basis of differences in phonological behavior (McCawley 1968:62–75; Itô and Mester 1995:817). Most researchers distinguish at least these four strata: native (*wago* 和語), Sino-Japanese (*kango* 漢語), recent (non-Chinese) borrowings (*gairaigo* 外来語), and mimetics (*onomatope* オノマトペ).⁵⁰ There are also proposals in the literature for further subdivisions, such as recognizing a separate "alien" stratum for markedly unasimilated recent borrowings (Fukazawa and Kitahara 2000:97) or dividing Sino-Japanese elements (mostly binoms) into "formal" and "vulgarized" (Takayama 2005:184). I have long been skeptical of the notion of vocabulary stratification as a component of synchronic analysis, because any attempt to assign each morpheme to a particular stratum on the basis of phonological behavior runs into awkward contradictions (Vance 2002a). I use the traditional stratum labels here simply to denote the etymological layers that are, after all, the diachronic source of the phonological tendencies that are supposed to define synchronic strata.⁵¹

It is well known that recent loans from languages other than Chinese are generally immune to rendaku (Vance 2015a:414–416). That is, even if a recently borrowed morpheme is realized with an initial voiceless obstruent other than /p/ when it occurs as an independent word, the expectation is that it will not have an allomorph beginning with the paired voiced obstruent. For the most part, Lyman's Law is irrelevant: even though /koHto/ コート 'coat' (as in /azuma+koHto/ 東コート 'Japanese-style coat') does not contain a medial voiced obstruent, it does not alternate with ^h/goHto/, just as /koHdo/ コード 'cord' (as in /eN·čōH+koHdo/ 延長コード 'extension cord') does not alternate with ^h/goHdo/. On the other hand, among the few recent borrowings that actually have been affected by rendaku (Takayama 2005:178–181; Irwin 2011:150–153), there are none in which rendaku has produced a Lyman's Law violation. I am, of course, assuming the modern version of Lyman's Law, according to which /ama+gaQpa/ 雨合羽 'rain cloak' is not a violation (see §7.2.1).

Lyman did not say anything about recent loans resisting rendaku in his 1894 article. Since large-scale borrowing from English and other European languages was just beginning when Lyman was living in Japan, compounds with a recently borrowed E2 were not a salient part of the vocabulary at the time. As already noted several times, the 1872 second edition of Hepburn's dictionary (H2) was Lyman's primary source of examples, and it lists both /kaQpa/ 合羽 'poncho' and /ama+gaQpa/ 雨合羽 'rain cloak' as headwords. The entry for /kaQpa/ says that it is a borrowing from Spanish, so Lyman knew that this non-Chinese loan was not immune to rendaku.⁵² H2 also lists both /karuta/ 骨牌 '(playing) cards' and /uta+garuta/ 歌骨牌 'poem cards' (cf. /uta/ 'poem'), although the entry for /karuta/ does not identify it as a loanword.⁵³ In short, what little Lyman had to go on did not give him any reason to suspect that recently borrowed elements would resist rendaku.

7.3.2 Sino-Japanese Binom E2s

Turning now to Sino-Japanese elements, they are certainly much less likely to show rendaku than native Japanese elements. In fact, it is often claimed that Sino-Japanese morphemes are immune to rendaku (Itô and Mester 1995:819), but this claim does not stand up to scrutiny if we take Sino-Japanese elements to be morphemes that were adopted into Japanese in one of the great waves of borrowing from Chinese.⁵⁴ The prototypical Sino-Japanese word is a binom, that is, a word written with two kanji, each kanji representing a Sino-Japanese morph. It is not at all difficult to find examples of rendaku affecting Sino-Japanese binom E2s, including compounds ending with /teQ·poH/~deQ·poH/

鉄砲 ‘gun’, as we saw above in Table 7.1 in §7.2.1. The examples below in Table 7.7 involve other Sino-Japanese binom E2s.

Table 7.7: Rendaku in Compounds Ending with a Sino-Japanese Binom.

/boH·eki+gai·ša/ 貿易会社 ‘trading company’
cf. /boH·eki/ ‘trade’, /kai·ša/ ‘company’
/acu+ge·šoH/ 厚化粧 ‘heavy makeup’
cf. /acu-i/ ‘thick’, /ke·šoH/ ‘makeup’
/kawa+zai·ku/ 皮細工 ‘leatherwork’
cf. /kawa/ ‘leather’, /sai·ku/ ‘handiwork’
/kaku+za·toH/ 角砂糖 ‘cube sugar’
cf. /kaku/ ‘square’, /sa·toH/ ‘sugar’
/waru+jī·e/ 悪知恵 ‘cunning’
cf. /waru-i/ ‘bad’, /či·e/ ‘wisdom’
/reN·šuH+bu·soku/ 練習不足 ‘insufficient practice’
cf. /reN·šuH/ ‘practice’, /fu·soku/ ‘insufficiency’
/ura+byoH·ši/ 裏表紙 ‘back cover’
cf. /ura/ ‘back’, /hyoH·ši/ ‘cover’

As mentioned above in §7.2.3, while all the examples in Table 7.7 would violate the Right-Branch Condition if we treat Sino-Japanese binoms as branching, it seems reasonable to categorize Sino-Japanese binoms as so-called strict compounds (leaving aside the dubious status of the Right-Branch Condition itself).

In all the many examples of rendaku involving the initial consonant of a Sino-Japanese binom, there are no violations of Lyman’s Law unless we treat the name /saburoH/ 三郎 (§7.2.4) as a Sino-Japanese binom. Otherwise, given the limited inventory of possible Sino-Japanese morph shapes, the only way a medial voiced obstruent can appear in a Sino-Japanese binom is as the first segment of the second morph, that is, right after the dot in the phonemic transcription. The examples in Table 7.8 are typical. These examples are clearly

Table 7.8: Compounds Ending in a Sino-Japanese Binom with a Medial Voiced Obstruent.

/ša·kai+koH·zoH/ 社会構造 ‘social structure’
cf. /ša·kai/ ‘society’, /koH·zoH/ ‘structure’
/aka+šiN·goH/ 赤信号 ‘red (traffic) light’
cf. /aka-i/ ‘red’, /šiN·goH/ ‘signal’
/soH+hoN·zaN/ 総本山 ‘head temple’
cf. /soH/ ‘overall’, /hoN·zaN/ ‘main temple’

problematic if the domain of Lyman's Law is a morpheme, as theoretical treatments typically assume. Using the first example in Table 7.8 (/š̥a·kai+koH·zoH/ 社会構造 'social structure') to illustrate, if Sino-Japanese binoms are bi-morphemic, the /z/ in /koH·zoH/ is not in the same morph as the /k/. It follows that Lyman's Law should not prevent rendaku in a compound that contains /koH·zoH/ as E2. Surely, however, it is not just a coincidence that there are no actual examples like * /š̥a·kai+goH·zoH/. As we saw just above, rendaku in examples like those in Table 7.7 (/kaku+za·toH/ 角砂糖 'cube sugar', etc.) would violate the Right-Branch Condition if we treat Sino-Japanese binoms as branching, but not if we treat them as strict compounds. In any case, the systematic absence of rendaku in examples like those in Table 7.8 shows that a Sino-Japanese binom is indistinguishable from a single morpheme as far as Lyman's Law is concerned.

Although examples with rendaku like those in Table 7.7 (e.g., /ura+byoH·ši/ 裏表紙 'back cover') are not uncommon, the great majority of Sino-Japanese binoms never show rendaku as E2s, even when Lyman's Law is irrelevant. In one comparison of a representative sample of 100 native Japanese monomorphemic noun E2s with a representative sample of 100 Sino-Japanese binom E2s (Vance 1996), 87 of the native elements showed rendaku in at least one compound, as opposed to only 10 of the Sino-Japanese elements.⁵⁵ These numbers are just crude estimates, of course, but there is no doubt that rendaku is the norm for native Japanese noun morphemes, while immunity to rendaku is the norm for Sino-Japanese binoms. Table 7.9 shows the situation in chart form.

Table 7.9: Rendaku Behavior of Native Japanese Noun Morphemes and Sino-Japanese Binoms.

TYPICAL	ATYPICAL
NATIVE JAPANESE NOUN MORPHEMES THAT AT LEAST SOMETIMES SHOW RENDAKU /cuyu/ 梅雨 'rainy season' /na+tane+zuyu/ 菜種梅雨 'early rainy spell' ⁵⁶	NATIVE JAPANESE NOUN MORPHEMES THAT NEVER SHOW RENDAKU /cuyu/ 露 'dew' ⁵⁷ /asa+cuyu/ 朝露 'morning dew'
SINO-JAPANESE BINOMS THAT NEVER SHOW RENDAKU /ki·ša/ 記者 'reporter' /šiN·buN+ki·ša/ 新聞記者 'newspaper reporter'	SINO-JAPANESE BINOMS THAT AT LEAST SOMETIMES SHOW RENDAKU /ki·ša/ 汽車 'train' /yo+gi·ša/ 夜汽車 'night train'

7.3.3 Monomorphemic Sino-Japanese E2s

When we look at the behavior of individual Sino-Japanese morphemes (as opposed to binoms), we encounter a set of thorny problems involving rendaku that seem to have no appealing solution. Since these problems are well documented (Vance 1996, 2011), I will not go into all the details in this section. Instead, I will confine my attention to categories of lexical items that Lyman treated in his 1894 article.

Lyman cited many binom-medial voiced obstruents as instances of rendaku.⁵⁸ One example is the /z/ in /gyoH·zui/ 行水 ‘washtub bath’, which appears in his sub-section 2(b) (Lyman 1894:163). The implication is that there is a single Sino-Japanese morpheme meaning ‘water’ with the voiceless allomorph /sui/ (as in /sui·acu/ 水压 ‘water pressure’) and the voiced allomorph /zui/. The problem with such examples is that, in some cases, voicing in a binom-medial obstruent reflects voicing that was already present in the original borrowing from Chinese. In Japanese language research, this kind of voicing is called **original voicing** (*hondaku* 本濁). In other cases, the voicing in a binom-medial obstruent developed within Japanese after the morpheme was borrowed. This second kind of voicing is called **new voicing** (*shindaku* 新濁).⁵⁹ Table 7.10 gives some examples.

Table 7.10: Original Voicing vs. New Voicing: Medial Obstruents in Sino-Japanese Binoms.

ORIGINAL VOICING	NEW VOICING
/ki·geN/ 起源 ‘origin’	/niN·geN/ 人間 ‘human being’
/mei·jiN/ 名人 ‘master’	/yoH·jiN/ 用心 ‘caution’
/koN·baN/ 今晚 ‘tonight’	/kaN·baN/ 看板 ‘signboard’

The /jiN/ written (心) (as in /yoH·jiN/ in Table 7.10) never appears word-initially, and the Sino-Japanese morph most commonly associated with this kanji is /šiN/, as in /šiN·pai/ 心配 ‘worry’ and /aN·šiN/ 安心 ‘ease’. In contrast, the /jiN/ written (人) does appear word-initially, as in /jiN·koH/ 人口 ‘population’, and this kanji never represents /šiN/. Given this difference in distribution, that is, the possibility or impossibility of word-initial occurrence, it seems as if it should be easy to distinguish original voicing from new voicing and treat new voicing as synchronic rendaku. In fact, however, the situation is complicated by the existence of **Sino-Japanese doublets**.

Contact with different varieties of Chinese at different times has left modern Japanese with many pairs of Sino-Japanese morphemes in which both members

of the pair are based on the same Chinese etymon.⁶⁰ One such pair is /mocu/ (as in /šoku·mocu/ 食物 ‘foodstuffs’) and /bucu/ (as in /hai·bucu/ 废物 ‘useless items’). In some of these doublets, the difference in pronunciation is just that one member of the pair begins with a voiceless obstruent and the other member begins with the voiced obstruent that new voicing or rendaku pairs with that voiceless obstruent. For example, the kanji 〈神〉 can represent Sino-Japanese /šiN/ (as in /šiN·wa/ 神話 ‘myth’) or Sino-Japanese /jiN/, (as in /jiN·ja/ 神社 ‘Shintō shrine’), and the two obstruent phonemes that contrast (/š/ and /j/) match what we find represented by 〈心〉 in /aN·šiN/ 安心 ‘ease’ and /yoH·jiN/ 用心 ‘caution’ (an instance of new voicing in a Sino-Japanese morpheme) or by 〈縞〉 in /šima/ 縞 ‘stripe’ and /tate+jiN/ 縦縞 ‘vertical stripe’ (an instance of rendaku in a native morpheme). In most Sino-Japanese doublets, the two borrowings are synonyms. Both /šiN/ 神 and /jiN/ 神 mean something like ‘god’, and they function in the modern Japanese vocabulary in much the same way as pairs like Greek-based *di-* ‘two’ (as in *disyllabic*) and Latin-based *bi-* ‘two’ (as in *dimoraic*) function in the modern English vocabulary.

To appreciate the difficulty that Sino-Japanese doublets like /šiN/ ‘god’ and /jiN/ ‘god’ pose for an analysis of rendaku, we need to look at their distribution. Either can occur word-initially, as in /šiN·bacu/ 神罰 ‘divine punishment’ and /jiN·dai/ 神代 ‘divine era’. When /šiN/ written with 〈神〉 is the second element in a binom, as in /sei·šiN/ 精神 ‘spirit’, it is obviously the voiceless-initial member of the doublet. However, when /jiN/ written with 〈神〉 is the second element in a binom, as in /sui·jiN/ 水神 ‘water god’, only philological evidence (which may or may not be available) can tell us whether /j/ is an instance of new voicing (i.e., the consonant of the voiceless-initial member of the doublet affected by what looks like rendaku) or an instance of original voicing (i.e., the initial consonant of the other member of the doublet). Needless to say, it is not realistic to expect an ordinary present-day speaker to be able to tell original voicing from new voicing in a word like /sui·jiN/, and it is not at all obvious how such a speaker deals with straightforward cases of new voicing like the /z/ in /gyoH·zui/ 行水 ‘washtub bath’ (cited earlier in this section). In short, the traditional identification of new voicing with rendaku (e.g., Okumura 1955:962; Okimori 2010:172) is problematic, and some researchers take the position that Sino-Japanese binoms are not ordinary compounds and that binom-internal voiced obstruents are never instances of rendaku (Itō and Mester 2003:80; Vance and Asai 2016:124).

Some of the new kana spellings adopted in 1946 (see §1.1) show that the reformers did not think of binom-medial new voicing as rendaku, since they treated original voicing and new voicing in the same way (Vance 1996:27–28, 2011:468–473). For example, the /z/ in /či·zu/ 地図 ‘map’ is an instance of

original voicing (cf. /zu·kei/ 図形 ‘diagram’), and the /z/ in /yuH·zuH/ 融通 ‘finance’ is an instance of new voicing (cf. /cuH·koH/ 通行 ‘transit’). The pre-reform and modern kana spellings of these words are shown in Table 7.11.⁶¹

Table 7.11: Kana Spellings for Binom-Medial Instances of Original Voicing and New Voicing.

		PRE-REFORM	SINCE 1946
ORIGINAL VOICING	/zu·kei/ 図形	〈づけい〉 (<i>tsu^h ke i</i>)	〈ずけい〉 (<i>su^h ke i</i>)
	/či·zu/ 地図	〈ちづ〉 (<i>chi tsu^h</i>)	〈ちず〉 (<i>chi su^h</i>)
NEW VOICING	/cuH·koH/ 通行	〈つうこう〉 (<i>tsu u ko u</i>)	〈つうこう〉 (<i>tsu u ko u</i>)
	/yuH·zuH/ 融通	〈ゆうづう〉 (<i>yu u tsu^h u</i>)	〈ゆうずう〉 (<i>yu u su^h u</i>)

On the traditional assumption that new voicing is rendaku, the /cuH/ in /cuH·koH/ and the /zuH/ in /yuH·zuH/ are allomorphs of a single morpheme, and the pre-reform spelling of /yuH·zuH/ with 〈づ〉 (*tsu^h*) should have been retained, but it was not.

Setting binoms aside, there are single Sino-Japanese morphemes that can appear as E2s in other kinds of compounds. The term “mononom” (Irwin 2005:121) denotes a Sino-Japanese morpheme (written with a single kanji) that appears not as part of a binom but on its own, either as an independent word or as an element in a non-binom compound. We see one frequently occurring Sino-Japanese mononom in the independent word /hoN/ 本 ‘book’ and as E2 in compounds such as /furu+hoN/ 古本 ‘used book’ (cf. the native adjective /furu-i/ ‘old’) and /maN·ga+boN/ 漫画本 ‘comic book’ (cf. the Sino-Japanese binom /maN·ga/ ‘comic’). Since the /b/ in /boN/ written with 〈本〉 is never original voicing, it seems safe to treat the /boN/ in /maN·ga+boN/ as an instance of rendaku, and there is little doubt that ordinary speakers see it as rendaku.⁶²

Reiterating the logic laid out in this section, I argued that new voicing in a Sino-Japanese mononom is synchronic rendaku but that original voicing in a Sino-Japanese binom is not (regardless of whether the voicing is word-initial or word-medial). As for new voicing in a Sino-Japanese binom, which can only be word-medial, I argued that it should be treated just like original voicing. Unfortunately, this logic leads to highly counterintuitive morphological analyses like the one shown below in Table 7.12.

Since 〈算〉 can represent /saN/ but never /zaN/ in word-initial position (as in /saN·suH/ in Table 7.12), we can be sure with respect to the examples in Table 7.12 that the /z/ in /zaN/ is new voicing. Since /zaN/ is a mononom in /taši+zaN/, the /z/ can be construed as an instance of rendaku. On the other hand, if the /z/ in the Sino-Japanese binom /aN·zaN/ is treated like original voicing (as

Table 7.12: Morphological Relationships between /saN/ 算 and /zaN/ 算.

/saN/ 算 'calculation'	
as in /saN ga a-u/ 算が合う 'calculation works out right' (cf. /a-u/ 'to match')	
ALLOMORPHS	SEPARATE MORPHEMES
/saN/~ /zaN/ /saN+gi/ 算木 'divining sticks' cf. native /ki/~ /gi/ 'wood' /taši+zaN/ 足し算 'addition' cf. native /tas-u/ 'to add'	/saN/≠ /zaN/ /saN·suH/ 算数 'arithmetic' cf. S-J /suH/ 'number' /aN·zaN/ 暗算 'mental calculation' cf. S-J /aN/ 'dark; unseen'

proposed above), it is not an instance of rendaku. It follows that the /zaN/ in /taši+zaN/ realizes the same morpheme as /saN/, whereas the /zaN/ in /aN·zaN/ realizes a different (synonymous) morpheme.⁶³

In response to this seemingly bizarre conclusion, it is tempting to retreat and pursue an alternative analysis that recognizes new voicing in the second element of a Sino-Japanese binom as rendaku, just like new voicing in a Sino-Japanese monom. With respect to the examples in Table 7.12, this alternative treats /z/ in the Sino-Japanese binom /aN·zaN/ as an instance of rendaku, and it follows that /saN/ and /zaN/ in all the examples in the table are realizations of the same morpheme. Unfortunately, in solving one problem, this modification causes a different problem. To illustrate, we can cite the examples in Table 7.13, which involve a Sino-Japanese doublet that we looked at earlier: /šiN/ 'god' and /jiN/ 'god' written with (神).

Table 7.13: Examples Involving a Sino-Japanese Doublet.

/šiN·wa/ 神話 'myth' cf. /wa/ 'tale'	/jiN·ja/ 神社 'Shintō shrine' cf. /ja/ 'shrine'
/šu·šiN/ 主神 'chief god' cf. /šu/ 'chief'	/rai·jiN/ 雷神 'thunder god' cf. /rai/ 'thunder'
/šu·go+šiN/ 守護神 'tutelary god' cf. /šu-go/ 'protection'	/ga·raN+jiN/ 伽藍神 'temple god' cf. /ga-raN/ 'Buddhist temple'

The word-initial /j/ in /jiN·ja/ must be original voicing, of course, but it is hard to know whether the word-medial occurrences of /j/ in /rai·jiN/ and /ga·raN+jiN/ are original voicing or new voicing, since /š/~ /j/ is one of the rendaku alternations. Regardless of what actually happened historically, we can assume for the sake of argument that these two instances of word-medial /j/ are both synchronic instances of rendaku. If so, the /jiN/ in /rai·jiN/ and /ga·raN+jiN/ realizes the

same morpheme as the /šiN/ in the examples on the left in Table 7.13, but the /jiN/ in /jiN-ja/ must be the realization of a different morpheme, since a word-initial voiced obstruent cannot be an instance of *rendaku*. This conclusion seems just as counterintuitive as the conclusion we reached above in connection with the examples in Table 7.12 (i.e., that /zaN/ in /aN·zaN/ 暗算 ‘mental calculation’ is not the same morpheme as /zaN/ in /taši+zaN/ 足し算 ‘addition’).

To sum up, there is no obvious solution to the problems that Sino-Japanese doublets cause for any attempt at a coherent analysis of *rendaku*. Perhaps the best response is just to give up and say that binom-medial instances of voicing are ambiguous.

Native speakers of Japanese who have studied linguistics often take the position that the two members of every Sino-Japanese doublet are allomorphs of the same morpheme. On this view, the /šiN/ and /jiN/ written with 〈神〉 (Table 7.13) are allomorphs of a single morpheme meaning ‘god’, although their distribution is unpredictable. The plausibility of this view rests, of course, on the writing system, that is, on the fact that /šiN/ and /jiN/ are written with the same kanji. The drawback to this kind of single-morpheme analysis for doublets is that it opens the door to treating any two synonymous morphs as allomorphs of a single morpheme, no matter how different they are phonologically. When new voicing is involved, the difference between the form that was affected by new voicing and the form that was not affected is just the initial segment, as in /zaN/ versus /saN/ written with 〈算〉 (Table 7.12). Many Sino-Japanese doublets involve exactly this degree of difference, and this coincidental overlap is, of course, the root cause of the problems we are struggling with here. But there are also doublets with different initial consonants that are not *rendaku* partners, such as /naN/ ‘man’ and /daN/ ‘man’ written with 〈男〉. In extreme cases, the two paired forms do not have any phonemes in common, as in /byoH/ ‘evenness’ and /hei/ ‘evenness’ written with 〈平〉. If this /hei/ and /byoH/ are allomorphs of the same morpheme, it is not clear that anything prevents us from the same about native /ho/ 帆 ‘sail’ and Sino-Japanese /haN/ 帆 ‘sail’ or even native /izumi/ 泉 ‘spring’ and Sino-Japanese /seN/ 泉 ‘spring’. Most linguists would agree that there is something wrong with an approach that allows morpheme identifications like these. Martin (1952:72–73) proposes limiting the one-morpheme analysis mostly to Sino-Japanese doublets with members that are based on an etymologically identical Chinese source and that have not diverged semantically, but it seems unlikely that an ordinary speaker’s lexicon is organized in this way (Vance 1987:172–174). In short, the one-morpheme analysis does not really solve the doublet problem.

7.3.4 Sino-Japanese Elements in Lyman's Examples

Lyman (1894:162) said that “Chinese” elements generally resist rendaku, but he estimated that about one seventh of the relevant examples he found did have what he interpreted as rendaku in a Sino-Japanese element. He listed these examples in his section 2, and the elements that show rendaku-like voicing fall into several categories. Some are Sino-Japanese binom E2s, as in /iši+doH.roH/ 石灯笼 ‘stone lantern’ (cf. native /iši/ ‘stone’ and Sino-Japanese /toH.roH/ ‘lantern’) and /giN+zai.ku/ 銀細工 ‘silverwork’ (cf. Sino-Japanese /giN/ ‘silver’ and Sino-Japanese /sai.ku/ ‘crafting’). These examples are like the ones in Table 7.7 in §7.3.2, and as we saw, there is no controversy about treating them as instances of rendaku.

The great majority of the examples in Lyman's section 2 involve voicing in a single Sino-Japanese morph occurring as the second half of a Sino-Japanese binom, as in /naN.zaN/ 難産 ‘difficult birth’ (cf. /naN/ ‘difficulty’, /saN/ ‘giving birth’). In a few of these examples, the binom is combined with something else, as in /bu+šiN.jiN/ 不信心 ‘unbelief’ (cf. Sino-Japanese /bu/ ‘not’), which contains the binom /šiN.jiN/ ‘belief’ (cf. /šiN/ ‘faith’, /šiN/ ‘heart, mind’). The medial voiced obstruents in most of these binoms are unambiguous cases of new voicing, but as we saw above in §7.3.3, it is not easy to decide whether to treat such examples as synchronic instances of rendaku.

Lyman's section 2 also includes several examples involving voicing in a monom (i.e., a single Sino-Japanese morph that is not the second half of a binom; see §7.3.3), as in /kake+zaN/ 掛け算 ‘multiplication’ (cf. native /kake.ru/ ‘to multiply’ and Sino-Japanese /saN/~zaN/ ‘calculation’) and /šu.gyoH+ja/ 修行者 ‘ascetic practitioner’ (cf. Sino-Japanese /šu.gyoH/ ‘ascetic practice’, /ša/~ja/ ‘person’).⁶⁴ Most of these monom-initial voiced obstruents are also unambiguous cases of new voicing.

In a few of the examples in Lyman's section 2, the voiced obstruent in a monom or in the second half of a binom is problematic in the sense that it could be new voicing but could also be original voicing. These examples are listed below in Table 7.14.

In addition to these examples in Table 7.14, which have word-medial voicing that could be either new or original, Lyman's section 2 includes several examples ending in a Sino-Japanese morph with voicing that is unmistakably original. These examples appear below in Table 7.15. In these examples, the initial consonants in the morphs /zacu/, /ji/, /jiki/, /zoH/, and /baku/ cannot be instances of new voicing because there are no morphs /sacu/ associated with ⟨雜⟩, /ši/ or /či/ associated with ⟨痔⟩, /šiki/ or /čiki/ associated with ⟨食⟩, /soH/ associated with ⟨造⟩, or /haku/ associated with ⟨縛⟩.⁷⁴ Since the voicing has to be

Table 7.14: Sino-Japanese Morphs with Voicing that Could Be Either New or Original.

〈学〉: ('learning') /gaku/ (original voicing)
/koH-gaku/ 講学 'pursuit of learning' (cf. Sino-Japanese /koH/ 'speaking')⁶⁵

〈財〉: ('treasure') /zai/ 'treasure' (original voicing) or /sai/
/saN-zai/ 散財 'squandering' (cf. Sino-Japanese /saN/ 'scatter')⁶⁶

〈治〉: ('governing') /ji/ (original voicing) or /či/
/hei-ji/ 平治 'quelling' (cf. Sino-Japanese /hei/ 'peace')
/toH-ji/ 湯治 'hot-spring cure' (cf. Sino-Japanese /toH/ 'hot water')⁶⁷

〈神〉: ('god') /jin/ (original voicing) or /šiN/
/sui-jin/ 水神 'water god' (cf. Sino-Japanese /sui/ 'water')
/ba-reki+jin/ 馬廐神 'stable god' (cf. Sino-Japanese /ba-reki/ 'stable')

〈臣〉: ('vassal') /jin/ (original voicing) or /šiN/
/sa+dai-jin/ 左大臣 'minister of the left' (cf. Sino-Japanese /sa/ 'left', /dai/ 'great')
/u+dai-jin/ 右大臣 'minister of the right' (cf. Sino-Japanese /u/ 'right')

〈前〉: ('before') /zeN/ (original voicing) or /seN/
/doH-zeN/ 同前 'ditto' (cf. Sino-Japanese /doH/ 'same')⁶⁸
/seN-zeN/ 前々 'formerly'⁶⁹

〈籐〉: ('rattan') /doH/ (original voicing) or /toH/
/šiige+doH/ 重籐 'rattan-wrapped bow' (cf. native /šiige+ru/ 'to increase')⁷⁰

〈判〉: ('seal') /baN/ (original voicing) or /haN/
/yaki+baN/ 焼判 'branding iron' (cf. native /yak-u/ 'to burn')⁷¹

〈伏〉: ('lying face down') /buku/ (original voicing) or /fuku/
/goH-buku/ 降伏 'surrender' (cf. Sino-Japanese /goH/ 'descending')⁷²

Table 7.15: Sino-Japanese Morphs with Voicing that Must Be Original.

〈雜〉: ('mixing') /zacu/ (original voicing) or /zoH/ (original voicing)
/haN-zacu/ 繁雜 'complicated' (cf. Sino-Japanese /haN/ 'complexity')

〈痔〉: ('hemorrhoids') /ji/ (original voicing)
/haširi+ji/ 走痔 'bleeding hemorrhoids' (cf. native /hašir-u/ 'to run')

〈食〉: ('eating; food') /jiki/ (original voicing) or /šoku/⁷³
/e+jiki/ 餌食 'prey' (cf. native /e/ 'animal food')
/kocu-jiki/ 乞食 'beggar' (cf. Sino-Japanese /kocu/ 'asking')
/moku-jiki/ 木食 'living on nuts and berries' (cf. Sino-Japanese /moku/ 'tree')
/ni-jiki/ 二食 'two meals a day' (cf. Sino-Japanese /ni/ 'two')
/niku-jiki/ 肉食 'meat eating' (cf. Sino-Japanese /niku/ 'meat')
/so-jiki/ 粗食 'coarse food' (cf. Sino-Japanese /so/ 'coarse')

〈造〉: ('construction') /zoH/ (original voicing)
/šiN-zoH/ 新造 'new construction' (cf. Sino-Japanese /šiN/ 'new')

〈縛〉: ('binding') /baku/ (original voicing)
/meN-baku/ 面縛 'hands tied behind with face forward' (cf. Sino-Japanese /meN/ 'face')

original, it cannot be rendaku, so Lyman should not have listed the words in Table 7.15.

A few of the elements that Lyman categorized in his section 2 as Sino-Japanese are actually native Japanese. Table 7.16 lists the examples that Lyman cited in error.⁷⁵

Table 7.16: Native Elements that Lyman Mistakenly Identified as Sino-Japanese.

/ka~/ga/ 'place' ⁷⁶
in /kakure+ga/ 隠れ家 'hideaway' (cf. native /kakure-ru/ 'to hide')
/ka~/ga/ 'deer' ⁷⁷
in /me+ga/ 牝鹿 'female deer' (cf. native /me/ 'female')
/ka~/ga/ 'odor'
in /ucuri+ga/ 移香 'lingering scent' (cf. native /ucur-u/ 'to be transferred')
in /waki+ga/ 腋臭 'armpit odor' (cf. native /waki/ 'underarm')
/či~/ji/ 'blood'
in /hana+jī/ 鼻血 'nosebleed' (cf. native /hana/ 'nose')
/koHri~/goHri/ 'ice'
in /hacu+goHri/ 初氷 'first ice of the year' (cf. native /hacu/ 'first')
/šiki~/jiki/ 'laying out' (from the verb /šik-u/ 'to lay out')
in /saN+jiki/ 棧敷 'tiered seating' (cf. Sino-Japanese /saN/ 'ledge') ⁷⁸

Ogura (1910:13) caught most of these errors and noted them in his critique (see §6.2), although he missed the last two. It is not hard to understand how Lyman could have miscategorized these examples; /ka/, /ga/, /ši/, /ji/, /šiki/, and /jiki/ are all possible shapes for a Sino-Japanese morph, and /koHri/ and /goHri/ are possible shapes for a Sino-Japanese binom.

7.3.5 Postnasal Voicing

Historically, the development of new voicing in Sino-Japanese morphs was not just a random extension of rendaku-like voicing. Japanese linguists have long been aware that an immediately preceding nasal was a strong promoting factor (Hamada 1952:18–19; Okumura 1952:11–13; Endō 1966:70–71). In fact, in any representative sample of binoms with new voicing, the great majority have a first element that ends, or used to end, in a nasal. When the Chinese source morph ended in [m] or [n], modern Tōkyō Japanese has /N/, and when the Chinese source morph ended in [ŋ], modern Tōkyō Japanese usually has vowel length or the second half of a V₁V₂ sequence (Miller 1967:204–205; Okumura 1972:73–78, 82–87). As Frellesvig (2010:185, 189–190) explains, the reflex of

original Chinese [ŋ] was a distinctively nasalized vowel in Early Middle Japanese (800–1200): ^{EMJ}/ĩ/ in some cases and ^{EMJ}/ũ/ in others. Frellesvig argues that the ancestor of modern Tōkyō /N/ was consistently pronounced [n] in EMJ, and he also accepts the idea that the distinction between voiced and voiceless obstruents was neutralized word-medially immediately following a nasal, so that only voiced obstruents could appear in this position. This neutralization is the origin of most cases of new voicing that we see in modern Tōkyō Japanese. The nasalized vowels lost their nasality and merged with their oral counterparts in Late Middle Japanese (1200–1600), and many V₁V₂ sequences coalesced into long vowels. To illustrate with one of Lyman’s examples, the two elements in modern Tōkyō /boH-zu/ 坊主 ‘Buddhist monk’ go back to ^{EMJ}/baũ/ (cf. modern Mandarin *fāng* 坊 ‘lane’) and ^{EMJ}/su/, and **postnasal voicing** resulted in ^{EMJ}/baũ-zu/.⁷⁹ Subsequent changes took ^{EMJ}/baũ/ to ^{MT}/boH/: [baũ]>[bau]>[bo:]>[bo:].⁸⁰

Looking at the examples that Lyman listed in his section 2 (Lyman 1894: 162–164), 74 are simple Sino-Japanese binoms with unambiguous new voicing (which was *rendaku* for him). Of these 74, 53 (72%) have a first element ending in /N/ (as in /kiN-jo/ 近所 ‘neighborhood’; cf. modern Mandarin *jìn* 近 ‘near’), and 14 of the 21 first elements that do not end in /N/ go back to a Chinese ancestor ending in [ŋ] (as in /toH-ji/ 冬至 ‘winter solstice’; cf. modern Mandarin *dōng* 冬 ‘winter’).⁸¹ The instances of new voicing that developed in the absence of an immediately preceding nasal are presumably cases of analogy, modeled on similar words with a nasal where we expect to find it. An example from Lyman’s sub-section 2(b) is /ka.zaN/ 火山 ‘volcano’ (cf. modern Mandarin *huǒ* 火 ‘fire’). The kanji (山) is used to write both members of the doublet /seN/ ‘mountain’ and /saN/ ‘mountain’, but it represents /zaN/ following a nasal in /reN.zaN/ 連山 ‘mountain chain’ and in many other Sino-Japanese binoms.⁸²

If the postnasal voicing of Early Middle Japanese were still operating actively in modern Tōkyō Japanese, we would never find a medial voiceless obstruent immediately following a nasal in a Sino-Japanese binom, but in fact, there are many examples like /seN-soH/ 戦争 ‘war’ and /neN-kiN/ 年金 ‘pension’. Frellesvig (2010:307–308) says that the neutralization “ceased to apply as an automatic phonological rule” during the Late Middle Japanese period. Since a large proportion of the Sino-Japanese binoms in use today were coined after the Meiji Restoration (1868), it is no surprise that so many of them have a word-medial nasal immediately followed by a voiceless obstruent. On the other hand, it is still true in Tōkyō Japanese today that most cases of what is historically new voicing occur immediately following a nasal (the moraic nasal /N/). As a result, the relationship between nasality and new voicing is just a one-way tendency. If a voiced obstruent is a product of new voicing, there is a high probability that it immediately follows a nasal. In contrast, if a binom-medial obstruent immediately follows a

nasal, there is only a low probability that it has undergone new voicing; it is very likely to be voiceless, and even if it is voiced, the voicing is very likely to be original.

Many phonologists assume that postnasal voicing (PNV) is still an active process in modern Tōkyō Japanese but that it applies exclusively or mainly to native Japanese elements (Itō and Mester 2003:130–131; Tabata 2010:98; Labrune 2012:128–130). It has been claimed that morpheme-internal sequences of /N/ followed by a voiceless obstruent never occur in native Japanese vocabulary items (Itō and Mester 1999:69). If so, we expect to find examples like /kaŋgae/ 考え 'idea' but not like */kaŋkae/.⁸³ It is hard to see how this claim can be reconciled with the existence of monomorphemic native words like /iŋci/ いんちき 'trickery', and the fact that PNV does not apply in colloquial contracted forms like /aŋta/ あんた (</anata/) 'you' makes it difficult to believe that PNV is synchronically active.⁸⁴ As we saw earlier in this section, PNV does not apply across the boundary between elements in Sino-Japanese binoms in modern Tōkyō Japanese, so minimal pairs like pairs like /kaŋ·sei/ 完成 'completion' versus /kaŋ·zei/ 関税 'tariff' are easy to find. Even if counterexamples like /iŋci/ and /aŋta/ can somehow be swept under the rug, it is implausible to imagine native speakers internalizing a constraint that somehow applies only to a certain segment of the vocabulary corresponding roughly to etymologically native elements (Ota 2004; Rice 2005:36–40).

As explained above in §7.3.3, the diachronic distinction between original voicing and new voicing in Sino-Japanese binoms is highly problematic. Setting this difficulty aside, I will continue to assume, as I have throughout this book, that what look like instances of rendaku following /N/ in other kinds of compounds are just that: instances of rendaku. I see no convincing reason for believing that postnasal voicing is active in modern Tōkyō Japanese. Postnasal voicing as a historical residue will come up again below in §7.4.4 and §7.4.6.

7.4 Verb and Adjective Elements

7.4.1 Inflected Words

Japanese has three classes of inflected words: verbs, adjectives, and the copula. Only verbs and adjectives participate in compounding, and rendaku could not affect the copula anyway, since the modern Tōkyō copula forms begin with the voiced obstruent /d/, as in /da/, /desu/, etc. Okumura (1955:962) claims that rendaku is unlikely in a two-element compound if both the elements are inflected

words, but it is not immediately obvious exactly what this claim means.⁸⁵ I will consider verb elements first and then move on to adjective elements.

7.4.2 Verb Elements

The examples in Table 7.17 are verb+verb compound verbs, that is, each example is a verb and contains two verb roots. Words of this form are abundant in Japanese, and I will use the abbreviation V+V=V to refer to them.⁸⁶

Table 7.17: V+V=V Compounds.

/kaki+tor-u/ 書き取る ‘to write down’ cf. /kak-u/ ‘to write’, /tor-u/ ‘to take’
/toHri+sugi-ru/ 通り過ぎる ‘to pass by’ cf. /toHr-u/ ‘to go along’, /sugi-ru/ ‘to pass’
/moči+awase-ru/ 持ち合わせる ‘to happen to have on hand’ cf. /moc-u/ ‘to hold’, /awase-ru/ ‘to put together’
/oči+cuk-u/ 落ち着く ‘to calm down’ cf. /oči-ru/ ‘to fall’, /cuk-u/ ‘to arrive’

Compound verbs of this kind vary widely in terms of semantic transparency. The first example in Table 7.17, /kaki+tor-u/, is quite transparent, since the meaning ‘to write down’ is a fairly straightforward combination of the meanings ‘to write’ and ‘to take’. On the other hand, the last example in Table 7.17, /oči+cuk-u/, is rather opaque, given the obvious gap between the meaning ‘to calm down’ and a combination of the meanings ‘to fall’ and ‘to arrive’.⁸⁷

The first component verb in a V+V=V compound has a constant form, and the second component verb takes whatever inflectional ending is required for the compound as a whole. Table 7.18 illustrates with a few inflectional forms of /kumi+tate-ru/ 組み立てる ‘to put together’ (cf. /kum-u/ ‘to join’, /tate-ru/ ‘to set up’) and /mi+mamor-u/ 見守る ‘to keep an eye on’ (cf. /mi-ru/ ‘to look at’, /mamor-u/ ‘to protect’). The nonpast affirmative form of a verb (listed in the first row of the table) is the form that modern dictionaries use as the citation form.⁸⁸

I use a hyphen to separate the stem from the inflectional ending in the forms in Table 7.18, and the morph divisions follow Bloch (1946). Bloch’s analysis is problematic (as noted in the Preface), but it is widely used and does not cause any trouble here. The important point for present purposes is that the first component verb in each compound never varies: it is always /kumi/ in the forms of /kumi+tate-ru/, and it is always /mi/ in the forms of /mi+mamor-u/.

Table 7.18: Inflectional Forms of V+V=V Compounds.

nonpast:	/kumi+tate-ru/	/mi+mamor-u/
past:	/kumi+tate-ta/	/mi+mamoQ-ta/
conditional:	/kumi+tate-reba/	/mi+mamor-eba/
volitional:	/kumi+tate-yoH/	/mi+mamor-oH/

This invariant form that a verb takes as the first component in a V+V=V compound is identical, in terms of phonemic segments, to what is called its adverbial form (*ren'yōkei* 連用形) in traditional Japanese grammar.⁸⁹ The adverbial form is an inflectional form, and as a word on its own it can function to connect its clause to a following clause.⁹⁰ Bloch (1946:7–12) categorizes almost all Japanese verbs as falling into one of two regular conjugation classes: consonant-stem verbs and vowel-stem verbs.⁹¹ Since /tate-ru/ 立てる 'to set up' is a vowel-stem verb, so is the compound /kumi+tate-ru/ 組み立てる 'to put together', and since /mamor-u/ 守る 'to protect' is a consonant-stem verb, so is the compound /mi+mamor-u/ 見守る 'keep an eye on'. In Bloch's (1946:12) analysis, the adverbial form of a consonant-stem verb has the ending /i/, but the adverbial form of a vowel-stem verb has no ending. In other words, the adverbial form of a vowel-stem verb is identical to its stem, as the examples in Table 7.19 show.

Table 7.19: Adverbial Forms of Verbs.

CONSONANT-STEM VERBS	VOWEL-STEM VERBS
/kum-i/ (cf. /kum-u/ 組む 'to join')	/mi/ (cf. /mi-ru/ 見る 'to look at')
/mamor-i/ (cf. /mamor-u/ 守る 'to protect')	/tate/ (cf. /tate-ru/ 立てる 'to set up')

There is no point in cluttering the transcriptions of adverbial forms of vowel-stem verbs with zero morphs, so the adverbial forms of /mi-ru/ 'look at' and /tate-ru/ 'set up' are not represented as /mi-∅/ and /tate-∅/. Such transcriptions show explicitly that the adverbial of a vowel-stem verb has no exponent corresponding to the /i/ that marks the adverbial of a consonant stem verb, but such explicitness is unnecessary here. Furthermore, if we take seriously the notion of a zero morph (as opposed to just the absence of an exponent), it is probably incoherent (Matthews 1991:123–124).

In many cases, a verb has a corresponding noun that is identical to its adverbial form in terms of phonemic segments, although the accent often differs.⁹² The examples in Table 7.20 illustrate.

Table 7.20: Adverbial Forms and Corresponding Nouns.

CITATION FORM	ADVERBIAL	NOUN
/yasu ⁺ m-u/ 休む ‘to rest’	/yasu ⁺ m-i/	/yasumi ⁺ / ‘vacation, break’
/ka ⁺ c-u/ 勝つ ‘to win’	/ka ⁺ č-i/	/kači ⁺ / ‘victory’
/ijime-ru/ 苛める ‘to pick on’	/ijime/	/ijime/ ‘ill-treatment’
/asob-u/ 遊ぶ ‘to play’	/asob-i/	/asobi/ ‘amusement’

To complicate matters even further, some verbs have a corresponding noun-like form that does not occur as a word by itself but does appear as an element in compounds. An example is the verb /fuk-u/ 拭く ‘to wipe’, which has the adverbial form /fuk-i/. There is no corresponding noun /fuki/, but /fuki/ does appear as the second element in compound nouns such as /te+fuki/ 手拭き ‘hand towel’ (cf. /te/ ‘hand’). Notice that /te+fuki/ cannot be derived from the adverbial form of a verb, since there is no verb ^{*}/te+fuk-u/.

The reason for this long digression into morphology is that the phonological form of a V+V=V compound does not tell us whether we should analyze the first element as a verb or as a noun. As an illustration, consider the compound verb /hataraki+kake-ru/ 働き掛ける ‘to work to persuade’. The verb /hatarak-u/ 働く ‘to work’ has the adverbial form /hatarak-i/, but there is also an independent noun /hataraki/ ‘work; ability; function’. It would not be unreasonable to argue that /hataraki+kake-ru/ is a combination of the noun /hataraki/ with the verb /kake-ru/ 掛ける ‘to put on’. This analysis would make /hataraki+kake-ru/ parallel to /koši+kake-ru/ 腰掛ける ‘to take a seat’. Since there is no verb corresponding to the noun /koši/ ‘hips’, /koši+kake-ru/ must be a noun+verb compound verb (N+V=V). I will not try to decide for each compound verb containing two verb roots whether it would be better to analyze the first element as a verb or as a noun. I will simply lump all such items together all and describe them as V+V=V compounds.

The same kind of uncertainty applies to both elements in a verb+verb compound noun. Like V+V=V compounds, such V+V=N compounds are abundant in Japanese, and Table 7.21 gives a few examples. Some V+V=N compounds have corresponding V+V=V compounds, while others do not. Compare the first two examples in Table 7.21 with the last two. The verb /kiki+tor-u/ 聞き取る ‘to catch what a person says’ corresponds to /kiki+tori/, and the verb /mi+mawar-u/ 見回る ‘to make inspection rounds’ corresponds to /mi+mawari/. But there is no verb ^{*}/tači+yom-u/ corresponding to /tači+yomi/ and no verb ^{*}/omoi+de-ru/ corresponding to /omoi+de/. Here again, I will not try to decide in each case whether it would be better to analyze any particular element as a verb or as a

Table 7.21: V+V=N Compounds.

/kiki+tori/ 聞き取り ‘catching what a person says’ cf. /kik-u/ ‘to listen to’, /tor-u/ ‘to take’
/mi+mawari/ 見回り ‘inspection rounds’ cf. /mi-ru/ ‘to look at’, /mawar-u/ ‘to go around’
/tači+yomi/ 立ち読み ‘reading while standing in a store’ cf. /tac-u/ ‘to stand’, /yom-u/ ‘to read’
/omoi+de/ 思い出 ‘memory’ cf. /omo-u/ ‘to think’, /de-ru/ ‘to come out’

noun. In the rest of this chapter I will simply lump together all compound nouns like those in Table 7.21 and describe them as V+V=N compounds.

As noted in the Appendix in the commentary on Lyman's sub-section 3[a], I do not use a hyphen to transcribe a deverbal noun derived from a simplex consonant-stem verb (as in Table 7.20), even though such a noun ends in /i/ just like the corresponding adverbial form. The reason is that a noun like /kimari/ 決まり ‘rule’ (cf. /kimar-u/ ‘to be decided’, adverbial form /kimar-i/) behaves for all practical purposes like an underived monomorphemic noun. For the same reason, as also noted in the Appendix, I do not use a hyphen in a consonant-stem verb element that appears as a non-final element in a compound (as in Tables 7.17, 7.18, and 7.21) or as a final element in a compound that is a noun (as in Table 7.21). The examples in Table 7.22 illustrate.

Table 7.22: Verb Elements in Compounds.

/nom-u/ 飲む ‘to drink’; adverbial form /nom-i/

V+V=V: /nomi+hos-u/ 飲み干す ‘drink until empty’ (cf. /hos-u/ ‘to make dry’)
V+V=N: /nomi+cuzuke/ 飲み続け ‘continuous drinking’ (cf. /cuzuke-ru/ ‘to continue’)
V+N=N: /nomi+mizu/ 飲み水 ‘drinking water’ (cf. /mizu/ ‘water’)
V+V=N: /tači+nomi/ 立ち飲み ‘drinking while standing’ (cf. /tac-u/ ‘to stand’)
N+V=N: /ča+nomi/ 茶飲み ‘tea lover’ (cf. /ča/ ‘tea’)

At this point we can begin to assess the claim that rendaku is unlikely in a two-element compound if both the elements are inflected words. Of course, we have to restrict our attention to items that would otherwise allow rendaku. An example like /tobi+nor-u/ 飛び乗る ‘to jump onto’ is irrelevant because the second element does not begin with an obstruent, and we can attribute the absence of rendaku to Lyman's Law (see §7.2 above) in an example like /nigiri+cubus-u/ 握り潰す ‘to grasp and squash’ and to coordinate status (see §7.6 below) in an

example like /yomi+kaki/ 読み書き ‘reading and writing’. Even when we exclude examples like these, it is true that V+V=V compounds seldom show rendaku.⁹³ It is also true that V+V=N compounds show rendaku far more often. This difference has sometimes been exaggerated into the suggestion that verb/noun pairs like those in Table 7.23 are typical.⁹⁴

Table 7.23: Paired V+V=V and V+V=N Compounds with Rendaku in Compound Noun but Not in Compound Verb.

V+V=V: /ki+toHs-u/ 着通す ‘to wear continuously’ ⁹⁵
V+V=N: /ki+doHši/ 着通し ‘continuous wearing’
cf. /ki-ru/ ‘to wear’, /toHs-u/ ‘to make go through’
V+V=V: /cukami+tor-u/ 掴み取る ‘to grab and take’
V+V=N: /cukami+dori/ 掴み取り ‘greedy snatching’
cf. /cukam-u/ ‘to grab’, /tor-u/ ‘to take’

Notice that rendaku (/d/ instead of /t/) appears in both of the compound nouns in Table 7.23 but in neither of the compound verbs. Examples like these invite us to interpret the claim about rendaku and inflected words as meaning that rendaku is unlikely in a compound if two conditions both hold: (1) the compound contains the roots of two inflected words, and (2) the compound itself is an inflected word (a verb in these examples).

In fact, however, pairs like those in Table 7.23 are not typical. The most common pattern by far is for both the verb and the noun in a pair to lack rendaku. There are also a few pairs that show rendaku both in the verb and in the noun.⁹⁶ The examples in Table 7.24 illustrate these other two patterns.

Table 7.24: Paired V+V=V and V+V=N Compounds with Rendaku in Neither or Both.

V+V=V: /uči+kes-u/ 打ち消す ‘to negate’
V+V=N: /uči+keši/ ‘negation’
cf. /uc-u/ ‘to strike’, /kes-u/ ‘to erase’
V+V=V: /tori+hara-u/ 取り払う ‘to remove completely’
V+V=N: /tori+harai/ ‘complete removal’
cf. /tor-u/ ‘to take’, /hara-u/ ‘to clear away’
V+V=V: /kaeri+zak-u/ 返り咲く ‘to reflower’
V+V=N: /kaeri+zaki/ ‘reflowering’
cf. /kaer-u/ ‘to return’, /sak-u/ ‘to bloom’

It is only when we look at unpaired examples that we find a clear difference between $V+V=V$ compounds and $V+V=N$ compounds. An unpaired verb is a $V+V=V$ compound with no corresponding noun. For example, there is a verb /okuri+kaes-u/ 送り返す 'to send back' (cf. /okur-u/ 'to send', /kaes-u/ 'to return'), but there is no noun ^{*}/okuri+kaeši/ or ^{*}/okuri+gaeši/. (Of course, the inflectional form /okuri+kaeš-i/, the adverbial form of the verb, does exist.) An unpaired noun is a $V+V=N$ compound with no corresponding verb. For example, there is a compound noun /oboe+gaki/ 覚え書き 'memo' (cf. /oboe-ru/ 'to recall', /kak-u/ 'to write'), but there is no verb ^{*}/oboe+kak-u/ or ^{*}/oboe+gak-u/.⁹⁷ There are many relevant unpaired words, both verbs and nouns, and we find rendaku in a clear majority of the nouns and in only a tiny fraction of the verbs (Vance 2005a:99). To illustrate with examples cited above in this paragraph, the rendaku in /oboe+gaki/ 'memo' is typical for an unpaired $V+V=N$ compound, and the lack of rendaku in /okuri+kaes-u/ 'to send back' is typical for an unpaired $V+V=V$ compound.

Any comparison of rendaku rates in $V+V=N$ compounds and $V+V=V$ compounds must exclude coordinate compounds because coordinate meaning is an independent factor that makes rendaku unlikely (see §7.6 below). Also, Lyman's Law (§7.2) renders examples like $V+V=V$ /fumi+cubus-u/ 踏み潰す 'to trample' (cf. /fum-u/ 'to step on', /cubus-u/ 'to crush') irrelevant. A medial voiced obstruent in E2 (/b/ in the case of /cubus-u/) prevents rendaku regardless of what kind of elements are combined.

To summarize the discussion of compounds containing two verb roots, there is a strong tendency for $V+V=N$ compounds to have rendaku and for $V+V=V$ compounds not to have it. At the same time, in verb/noun pairs like those in Table 7.24, there is a strong tendency for the two compounds to match in terms of the presence or absence of rendaku. It would not be surprising to see a diachronic trend toward bringing pairs that do not match (like those in Table 7.23) into conformity with this tendency, and there are some suggestive examples (Vance 2007a:163). Lyman (1894:164) listed /nori+gae/ 乗り換え, with rendaku, as an example in his section 3[b], and the headword in H2 (Hepburn's 1872 second edition) is defined as 'change of horses'. H2 also lists the corresponding verb /nori+kae-ru/, without rendaku, defined as 'to change from one ride to another' (cf. /nor-u/ 'to ride', /kae-ru/ 'to change'). Modern Tōkyō speakers have /nori+kae/ 'changing from one vehicle to another' for the noun, without rendaku (matching the verb).⁹⁸ A pair that seems to have moved in the other direction is the noun /ki+gae/ 着替え 'change of clothes' and the corresponding verb /ki+kae-ru/ 'change clothes' (cf. /ki-ru/ 'to put on (clothes)', /kae-ru/ 'to change'). These are the forms listed in H2, but most Tōkyō speakers today have /ki+gae-ru/, with rendaku, for the verb.⁹⁹ In both of these cases we

now have a matching pair, in one case because the noun has lost *rendaku* and in the other case because the verb has gained *rendaku*.

7.4.3 Adjective Elements

Turning now to compounds containing adjective roots, the examples in Table 7.25 are adjective+adjective compound adjectives, that is, each example is an adjective and contains two adjective roots. I will use the abbreviation A+A=A to denote words of this form.

Table 7.25: A+A=A Compounds.

/furu+kusa-i/ 古臭い ‘old-fashioned’
cf. /furu-i/ ‘old’, /kusa-i/ ‘smelly’
/usu+akaru-i/ 薄明るい ‘dimly lit’
cf. /usu-i/ ‘thin’, /akaru-i/ ‘bright’

The first component adjective in an A+A=A compound has a constant form, and the second component adjective takes whatever inflectional ending is required for the compound as a whole. A+A=A compounds are nowhere near as numerous as V+V=V compounds.

We saw above in §7.4.2 that regular verbs are traditionally divided into two inflectional classes, but adjectives have much simpler inflectional morphology than verbs, and there is no need for inflectional classes. Any inflectional form of an adjective can be analyzed into a vowel-final stem followed by an inflectional ending, and both the stems and the endings are invariant.¹⁰⁰ Table 7.26 illustrates with some of the inflectional forms of /hoso-i/ 細い ‘slender’ and /hoso+naga-i/ 細長い ‘long and slender’ (cf. /naga-i/ ‘long’). The nonpast affirmative form of an adjective (listed in the first row of the table) is its citation form.

Table 7.26: Inflectional Forms of Adjectives.

nonpast:	/hoso-i/	/hoso+naga-i/
adverbial:	/hoso-ku/	/hoso+naga-ku/
past:	/hoso-kaQta/	/hoso+naga-kaQta/
provisional:	/hoso-kereba/	/hoso+naga-kereba/

Like the adverbial form of a verb, the adverbial form of an adjective (listed in the second row of Table 7.26) can function to connect its clause to a following

clause. This form also has a range of adverbial uses that the adverbial form of a verb does not share.¹⁰¹ What is important here is that the first component adjective in an A+A=A compound has the form of a bare stem, not an adverbial. If an adjective is simplex, its stem is a root. For example, /hoso-i/ has the stem/root /hoso/, and /naga-i/ has the stem/root /naga/. The A+A=A compound /hoso+naga-i/ has the stem /hoso+naga/, which contains both these roots. From here on, I will just say that the first component adjective in an A+A=A compound appears in its root form.

The adjective element in an A+V=V or A+V=N compound also appears in its root form, as the examples in Table 7.27 show.

Table 7.27: A+V=V and A+V=N Compounds.

A+V=V: /čika+yor-u/ 近寄る 'to draw near'
cf. /čika-i/ 'near', /yor-u/ 'to approach'
A+V=N: /haya+oki/ 早起き 'early rising'
cf. /haya-i/ 'early', /oki-ru/ 'to arise'

In a V+A=A compound, the adjective takes whatever inflectional ending is required for the compound as a whole, as in Table 7.28.

Table 7.28: V+A=A Compounds.

/muši+acu-i/ 蒸し暑い 'hot and humid'
cf. /mus-u/ 'to be muggy', /acu-i/ 'hot'
/mawari+kudo-i/ 回りくどい 'roundabout and long-winded'
cf. /mawar-u/ 'to go around', /kudo-i/ 'wordy'

A+A=N and V+A=N compounds are so rare that there is no point in considering them in assessing the frequency of rendaku. The only A+A=N example I am aware of is /taka+hiku/ 高低 'unevenness' (literally 'highs and lows'; cf. /taka-i/ 'high', /hiku-i/ 'low').¹⁰² Since this word is a coordinate compound, we would not expect it to have rendaku (see §7.6 below). As for V+A=N compounds, all the examples I know of end with /daka/, the voiced allomorph of the root of /taka-i/ 'high'. One of these examples is /ure+daka/ 売れ高 'sales amount' (cf. /ure-ru/ 'to be sold'). Since the voiceless allomorph of this same root occurs as the independent noun /taka/ 'amount', it would not be unreasonable to analyze /ure+daka/ as a V+N=N compound instead of as a V+A=N compound.¹⁰³

In assessing the likelihood of *rendaku* in compounds containing adjective elements, we have to be careful to restrict our attention to relevant items, as we did above in connection with V+V=V and V+V=N compounds in §7.4.2. We are not interested in E2s that do not begin with a voiceless obstruent when they appear word-initially, like those in A+A=A /usu+akaru-i/ 薄明るい ‘dimly lit’ (Table 7.25) or A+V=V /čika+yor-u/ 近寄る ‘to draw near’ (Table 7.27). We also need to exclude coordinate compounds like A+A=A /ama+kara-i/ 甘辛い ‘sugar and soy-sauce flavored’ (cf. /ama-i/ ‘sweet’, /kara-i/ ‘salty’), since coordinate meaning tends to inhibit *rendaku* (see §7.6 below). Finally, we must ignore items that would violate Lyman’s Law (§7.2) if they showed *rendaku*, including V+A=A /mawari+kudo-i/ 回りくどい ‘roundabout and long-winded’ (Table 7.28) and A+V=N /waka+hage/ 若禿げ ‘premature baldness’ (cf. /waka-i/ ‘young’, /hage-ru/ ‘to go bald’). We saw in §7.4.2 that *rendaku* is rare in V+V=V compounds but common in V+V=N compounds. In contrast, *rendaku* is the norm in all compounds involving adjective components, even when the compound itself is an adjective or a verb.¹⁰⁴

Turning first to A+V=V compounds, there are not many relevant items of this type, but all the ones I know of show *rendaku*. One example is /naga+bik-u/ 長引く ‘to be prolonged’ (cf. /naga-i/ ‘long’, /hik-u/ ‘to pull’). Relevant A+V=N compounds are more common, and we see *rendaku* in most of them, but there are a few exceptions. An example that follows the norm is /oso+zaki/ 遅咲き ‘late blooming’ (cf. /oso-i/ ‘late’, /sak-u/ ‘to bloom’), and one of the exceptions is /kiyo+harai/ 清祓い ‘religious purification’ (cf. /kiyo-i/ ‘pure’, /hara-u/ ‘to exorcize’).

As for V+A=A compounds, there are not many relevant words of this type either, but most of them show *rendaku*. A typical example is /utagai+buka-i/ 疑い深い ‘suspicious’ (cf. /utaga-u/ ‘to doubt’, /fuka-i/ ‘deep’), and one of the few exceptions is /tere+kusa-i/ 照れ臭い ‘embarrassed’ (cf. /tere-ru/ ‘to get embarrassed’, /kusa-i/ ‘smelly’). Relevant A+A=A compounds are also quite rare, and these are the only compounds involving adjective components that show any real tendency to resist *rendaku*. They divide about half and half into those with *rendaku*, like /usu+gura-i/ 薄暗い ‘dimly lit’ (cf. /usu-i/ ‘dim’, /kura-i/ ‘dark’), and those without, like /sema+kuruši-i/ 狭苦しい ‘cramped’ (cf. /sema-i/ ‘narrow’, /kuruši-i/ ‘oppressive’).¹⁰⁵

7.4.4 Inflected-Word Compounds

We are now ready to return to the claim that *rendaku* is unlikely in a two-element compound if both the elements are inflected words. In short, there does

not seem to be any generalization that applies to all inflected-word compounds. In particular, the suggestion considered above in §7.4.2 in connection with V+V compounds does not work for compounds containing an adjective root. The suggestion was that rendaku is unlikely in a compound that meets two conditions: (1) the compound contains the roots of two inflected words, and (2) the compound itself is an inflected word. On the one hand, as we saw in §7.4.2, there is a real contrast between verbs and nouns containing two verb components: rendaku is rare in V+V=V compounds but common in V+V=N compounds. On the other hand, as we saw in §7.4.3, rendaku is common in all the compound types containing an adjective component, even when the compound as a whole is a verb (A+V=V) or an adjective (V+A=A or A+A=A). Incidentally, the high frequency of rendaku in compounds containing adjective components is rather mysterious in terms of the explanation for the historical origin of rendaku offered in §1.2, since there is no compelling reason to think that some NV syllable would have appeared between the elements of such compounds in prehistoric Japanese.

There is one other issue involving rendaku in inflected words that merits consideration here. Postnasal voicing (PNV; see §7.3.5 above) is often invoked to account for the /d/ that appears in the inflectional endings of certain verb forms, including the past-tense marker /ta/~da/.¹⁰⁶ The examples in Table 7.29 illustrate.

Table 7.29: Past-Tense Verb Forms.

NONPAST	PAST
/ire-ru/ 入れる 'to put in'	/ire-ta/
/ikas-u/ 生かす 'to utilize'	/ikaši-ta/
/idak-u/ 抱く 'to embrace'	/idai-ta/
/itar-u/ 至る 'to result'	/itaQ-ta/
/idom-u/ 挑む 'to challenge'	/idoN-da/
/šin-u/ 死ぬ 'to die'	/šiN-da/
/erab-u/ 選ぶ 'to choose'	/eraN-da/
/isog-u/ 急ぐ 'to hurry'	/isoi-da/

Since /ta/ appears in most past-tense forms when the immediately preceding segment is a vowel, as in /ire-ta/, /ikaši-ta/, and /idai-ta/, it seems reasonable to treat /ta/ as the basic form and attribute the /d/ in examples like /idoN-da/, /šiN-da/, and /eraN-da/ to PNV. Of course, as Labrune (2012:129) is careful to point out, PNV cannot account for /d/ in examples like /isoi-da/ (in the last line of Table 7.29), since the stem ends with /i/.¹⁰⁷

Rice (2005:45) raises the question of whether it is possible for *rendaku* to appear at the beginning of an element containing a voiced obstruent that can be ascribed to PNV. An example that might appear to fit this description is the past-tense form /i·ki+goN-da/ of the N+V=V compound /i·ki+gom-u/ 意気込む ‘to get enthusiastic’ (cf. the Sino-Japanese binom /i·ki/ ‘enthusiasm’ and the native verb /kom-u/ ‘to become concentrated’). Lyman’s Law (§7.2) does not block the /d/ in the past-tense suffix, and it is tempting to jump to the conclusion that voicing due to PNV is somehow different from other instances of voicing in obstruents. In fact, however, PNV is beside the point, as becomes clear when we compare negative forms such as /i·ki+gom-azu/ ‘not getting enthusiastic’ and /na+zuke-zu/ ‘not naming’. (The citation form of this second N+V=V compound is /na+zuke-ru/ 名付ける; cf. the native noun /na/ ‘name’ and the native verb /cuke-ru/ ‘to attach’.) Lyman’s Law does not block *rendaku* in the verb roots in such compounds regardless of whether a voiced obstruent in an inflectional ending can be attributed to PNV, and the absence of a Lyman’s Law effect is exactly what we expect given the constituent structure of the inflectional forms in question. When an inflectional form has a compound stem, the inflectional ending presumably attaches to the entire stem, not just to the last element in the stem. Consequently, the constituent structure of /i·ki+goN-da/ is {{/i·ki+goN/}-/da/}, and the constituent structure of /na+zuke-zu/ is {{/na+zuke/}-/zu/}. Just as in {{AB}C} compounds (see §7.2.3 above), element-initial voicing in both the middle element and the final element does not constitute a Lyman’s Law violation.

7.4.5 Noun+Verb Compound Nouns

The N+V=V compounds cited just above in the last paragraph of §7.4.4 are inflected words (i.e., verbs), but they contain one noun root and one verb root and are therefore not relevant to the claim evaluated in §§7.4.2–7.4.4, namely, that *rendaku* is disfavored in two-root inflected-word compounds if both E1 and E2 involve inflected-word roots. The claim applies to V+V=V compounds like /hanaši+kake-ru/ 話し掛ける ‘to address’ (cf. /hanas-u/ ‘to speak’, /kake-ru/ ‘to put’), not to N+V=V compounds like /me+gake-ru/ 目掛ける ‘to aim at’ (cf. /me/ ‘eye’). According to Sugioka (1986:109–110), *rendaku* is common in N+V=V compounds, but as far as I know, words of this type have not been investigated systematically with respect to *rendaku*. Neither have N+A=N compounds like /saki+boso/ 先細 ‘tapering’ (cf. /saki/ ‘tip’, /hoso-i/ ‘thin’) and N+A=A compounds like /ne+zuyo-i/ 根強い ‘persistent’ (cf. /ne/ ‘root’, /cuyo-i/ ‘strong’) (Vance 2015a:429).

In contrast, N+V=N compounds have attracted a great deal of attention. Such compounds are plentiful in Japanese, and Table 7.30 gives a few examples. These examples illustrate a variety of semantic relationships between the noun component (E1) and the verb component (E2), and to a large extent the relationship in any given case is predictable from the meanings of the related noun and verb. A convenient way of making the relationship clear is to provide a phrase containing that noun and verb. As the phrases in Table 7.30 show, the possible roles for the noun include instrument (marked by the particle /de/ で), source (marked by the particle /ni/ に), subject (marked by the particle /ga/ が), and direct object (marked by the particle /o/ を).

Table 7.30: N+V=N Compounds.

/mizu+asobi/ 水遊び ‘playing with water’
cf. /mizu de asob-u/ ‘play with water’
/nacu+make/ 夏負け ‘suffering from summer heat’
cf. /nacu ni make-ru/ ‘succumb to summer’
/kata+kori/ 肩凝り ‘shoulder stiffness’
cf. /kata ga kor-u/ ‘shoulders stiffen’
/tako+age/ 凧揚げ ‘kite flying’
cf. /tako o age-ru/ ‘fly a kite’
/ke+nuki/ 毛抜き ‘tweezers’
cf. /ke o nuk-u/ ‘remove hair’
/haši+oki/ 箸置き ‘chopstick rest’
cf. /haši o ok-u/ ‘place chopsticks’
/sake+nomi/ 酒飲み ‘drinker’
cf. /sake o nom-u/ ‘drink alcoholic beverages’

Four of the examples in Table 7.30 involve a noun in the role of direct object, but one of the N+V=N compounds denotes an activity (/tako+age/ ‘kite flying’), one denotes an object used to perform an activity (/ke+nuki/ ‘tweezers’), one denotes an object that serves as the target of an activity (/haši+oki/ ‘chopstick rest’), and one denotes a person engaged in an activity (/sake+nomi/ ‘drinker’). In fact, many N+V=N compounds are ambiguous. For example, /go+uči/ 碁打ち (cf. /go o uc-u/ ‘play go’) can denote either an activity (‘go playing’) or a person (‘go player’).

As we saw above in §7.4.2, there is no obvious way to decide whether we should analyze either element in a V+V=N compound as a verb or as a noun. The same kind of uncertainty applies to the verb element in an N+V=N compound, and here again, no attempt will be made to solve this problem. As long as a compound noun contains an unambiguous noun followed by an unambiguous verb root, it will be treated as an N+V=N compound. The research on such

compounds has focused mainly on examples with a simplex native or Sino-Japanese noun as the first element, but examples with other kinds of first elements are by no means rare. E1 is a compound of two native elements in {{/nori+mono/}+/yoi/} 乗り物酔い ‘motion sickness’ (cf. /nor-u/ ‘to ride’, /mono/ ‘thing’, /yo-u/ ‘to get intoxicated’), a Sino-Japanese binom in /geN·kiN+uri/ 現金売り ‘cash sale’ (cf. /geN·kiN/ ‘cash’, /ur-u/ ‘to sell’), and a recent loanword in /koNkuriHto+uči/ コンクリート打ち ‘concrete pouring’ (cf. /koNkuriHto/ ‘concrete’, /uc-u/ ‘to hit’).

A well-known claim about N+V=N compounds is that *rendaku* is less likely if the noun element is in a direct-object relationship to the verb element (DO+V=N) rather than in some other relationship (nonDO+V=N).¹⁰⁸ The examples cited in support of this claim suggest a stronger generalization: nonDO+V=N compounds generally show *rendaku* and DO+V=N compounds generally do not (Sugioka 2005:500–501). If this stronger version is correct, examples like those in Table 7.31 should be typical.

Table 7.31: DO+V=N Compounds versus NonDO+V=N Compounds.

DO+V=N: /mono+hoši/ 物干し ‘drying rack’
cf. /mono o hos-u/ ‘dry things’
nonDO+V=N: /kage+boši/ 陰干し ‘drying in the shade’
cf. /kage de hos-u/ ‘dry in the shade’
DO+V=N: /kane+kaši/ 金貸し ‘money lender’
cf. /kane o kas-u/ ‘lend money’
nonDO+V=N: /mae+gaši/ 前貸し ‘advancing money’
cf. /mae ni kas-u/ ‘lend in advance’
DO+V=N: /aĵi+cuke/ 味付け ‘flavoring’
cf. /aĵi o cuke-ru/ ‘put on flavor’
nonDO+V=N: /kugi+zuke/ 釘付け ‘attaching with nails’
cf. /kugi de cuke-ru/ ‘attach with nails’

We see *rendaku* in Table 7.31 in all of the three nonDO+V=N compounds (/kage+boši/, /mae+gaši/, and /kugi+zuke/) but not in any of the three DO+V=N compounds (/mono+hoši/, /kane+kaši/, and /aĵi+cuke/). To determine whether this pattern is the norm, we must, of course, restrict our attention to relevant vocabulary items. For example, there is no point in looking at /sake+nomi/ 酒飲み ‘drinker’ because the related verb /nom-u/ ‘to drink’ does not begin with a voiceless obstruent. We must also ignore items like /ude+kurabe/ 腕比べ ‘skill competition’ (cf. /ude o kurabe-ru/ ‘compare skill’); the medial voiced obstruent /b/ in /kurabe/ means that *rendaku* would violate Lyman’s Law.¹⁰⁹

As it turns out, it is not hard to find DO+V=N compounds with rendaku. A few examples are listed below in Table 7.32.

Table 7.32: DO+V=N Compounds with Rendaku.

/hotaru+gari/ 螢狩り 'firefly hunting'
cf. /hotaru o kar-u/ 'hunt fireflies'
/fude+zukai/ 筆使い 'brush technique'
cf. /fude o cuka-u/ 'use a writing brush'
/kuruma+dome/ 車止め 'wheel block'
cf. /kuruma o tome-ru/ 'stop wheels'
/kuji+biki/ 籤引き 'drawing lots'
cf. /kuji o hik-u/ 'draw lots'
/širaga+zome/ 白髪染め 'hair dye'
cf. /širaga o some-ru/ 'dye gray hair'

In fact, in one representative sample of common vocabulary items, about half the relevant DO+V=N compounds show rendaku (Nakamura and Vance 2002; Vance 2014a:144–145).¹¹⁰ As for nonDO+V=N compounds, the great majority of relevant items show rendaku. One of the few examples without rendaku is /te+suri/ 手摺り 'handrail' (cf. /te de sur-u/ 'rub with the hand'). To sum up, it is true that rendaku is less common in DO+V=N compounds than in nonDO+V=N compounds, but it is not true that DO+V=N compounds strongly disfavor rendaku. The difference between the two word types is that there is a very strong preference for rendaku in nonDO+V=N compounds but no clear preference either for or against in DO+V=N compounds.¹¹¹

There is also a correlation between rendaku and accent in N+V=N compounds because DO+V=N compounds tend to be accented, whereas nonDO+V=N compounds tend to be unaccented (Sugioka 2002:498–500; Yamaguchi 2011:120). That is, the presence of an accent and the absence of rendaku tend to go together (in DO+V=N compounds), and so do the absence of an accent and the presence of rendaku (in nonDO+V=N compounds). Akinaga (1966:53) says that this pattern holds only for verb elements that are one or two moras long, but Yamaguchi (2011:121–128), using a database of more than 1,000 relevant compounds listed in a dictionary, reports that the correlation is weaker but still significant for verb elements that are three or four moras long.¹¹² She also shows the probability of being accented is lower in N+V=N compounds that have rendaku, regardless of the relationship between the N and V components.¹¹³

One problem that arises in dealing with N+V=N compounds is that some verbs take alternative case frames that make it impossible to decide with certainty whether or not to treat the initial nominal element as a direct object. For

example, the verb /sas-u/ 刺す ‘to stab’ allows both *X ni Y o sasu* ‘stab Y into X’ and *X o Y de sasu* ‘stab X with Y’. Consequently, a compound like /kuši+zaši/ 串刺し ‘skewering’ (cf. /kuši/ ‘skewer’) could be categorized either as DO+V=N (cf. /kuši o sas-u/ ‘stab a skewer [into something]’) or as nonDO+N=V (cf. /kuši de sas-u/ ‘stab [something] with a skewer’).¹¹⁴

7.4.6 Single Sino-Japanese Morphemes Combined with /suru/~ /zuru/

In one particular sub-category of N+V compound verbs, *rendaku* still shows traces of a pattern that can be attributed historically to postnasal voicing (PNV; see §7.3.5). These compounds contain a single Sino-Japanese morpheme as E1 followed by the native verb /su-ru/ ‘to do’ as E2, as in /hai+su-ru/ 排する ‘to exclude’ (cf. /hai/ ‘exclusion’) and /šiN+zū-ru/ 信ずる ‘to believe’ (cf. /šiN/ ‘credence’). The *rendaku* rate is much higher when E1 ends in the moraic nasal /N/ than when it ends with some other segment (Martin 1952:49–52), but there are also many examples that do not follow the trend (Ogura 1910: 277–281), such as /mei+zū-ru/ 命ずる ‘to command’ (cf. /mei/ ‘command’) and /hiN+su-ru/ 貧する ‘to become poor’ (cf. /hiN/ ‘poverty’).

When a compound in this group shows *rendaku*, it ordinarily has a more colloquial citation form ending in /ji-ru/ rather than /zū-ru/ (Martin 1975:289), as in /kiN+ji-ru/ 禁じる ‘to prohibit’ versus /kiN+zū-ru/ 禁ずる (cf. /kiN/ ‘prohibition’). There is no need here to go into the diachronic development of /ji-ru/, but the precise synchronic relationship between /su-ru/ ‘to do’ and /ji-ru/ is uncertain and obviously not just a matter of *rendaku* (Vance and Asai 2016:125–126). The remainder of this section will treat only citation forms ending in /su-ru/ or its *rendaku* counterpart /zū-ru/. Although the forms ending in /zū-ru/ have an archaic or formal feel and are more likely to be used in writing rather than in speech, most are not obsolete.

The early waves of borrowing into Japanese (§7.3.2) were based on varieties of Chinese in which a nasal-final syllable could end in [m], [n], or [ŋ] (§7.3.5). The instances of [m] and [n] in older Chinese correspond regularly to [n] in modern Mandarin (romanized in pinyin as ⟨n⟩) and to the moraic nasal /N/ in Sino-Japanese. Thus, examples such as modern Tōkyō Japanese /kiN+zū-ru/ 禁ずる ‘to prohibit’ (cf. modern Mandarin *jìn* ‘to prohibit’, with [n]<[m]) and /šiN+zū-ru/ 信ずる ‘to believe’ (cf. modern Mandarin *xìn* ‘to believe’, with [n]<[ŋ]) are transparent vestiges of PNV. The instances of [ŋ] in older Chinese correspond regularly to [ŋ] in modern Mandarin (romanized in pinyin as ⟨ng⟩) and to the second half of a long vowel or of a diphthong in Sino-Japanese (§7.3.5). As a result, modern Tōkyō examples like /mei+zū-ru/ 命ずる ‘to command’ (cf.

modern Mandarin *mìng* ‘command’, with [ŋ]<[ŋ]) are historically due to PNV, but they are opaque instances to present-day speakers.

The tendency for /zu-ru/ to appear after /N/ and /su-ru/ to appear elsewhere has been further disrupted by the fact that many of the relevant compounds were coined long after PNV ceased to operate as an active process (Vance and Asai 2016:128–129). Nonetheless, in a sample of 135 relevant compounds in frequent use in Tōkyō Japanese today, there is an obvious correlation between E1-final /N/ and rendaku (Vance and Asai 2016:127), as shown below in Table 7.33.

Table 7.33: Rendaku Rates for N+V=V Compounds with a Lone Sino-Japanese Morpheme as E1.

E1-FINAL SEGMENT	RENDAKU RATE	EXAMPLES
/N/	64%	typical (23/36): /kaN+zu-ru/ 感ずる ‘to feel’ atypical (13/36): /haN+su-ru/ 反ずる ‘to go against’
V	17%	typical (82/99): /hyoH+su-ru/ 表ずる ‘to express’ atypical (17/99): /šoH+zu-ru/ 生ずる ‘to arise’

Examples like /seQ+su-ru/ 接ずる ‘to connect’ are excluded from Table 7.33 because rendaku is not possible immediately following the moraic obstruent /Q/ (Vance and Asai 2016:132–133). Like many Sino-Japanese morphemes, the E1 in this example has one allomorph ending in /cu/ and another allomorph ending in /Q/: /secu/~ /seQ/ ‘connection’ (Vance 1987:155–160), and the /Q/-final allomorph of such a morpheme always appears in a compound verb consisting of that single morpheme followed by /su-ru/.

7.4.7 Lyman's Examples Containing Verb and Adjective Elements

In sub-section 3[a] of his 1894 article, Lyman makes the point that rendaku is rare in V+V=V compounds (see §7.4.2 above) by reporting that of 705 such compounds listed in the 1872 second edition of Hepburn's dictionary (H2), only 35 (5%) show rendaku (Lyman 1894:164). Lyman listed these 35 examples, but as explained in the commentary on sub-section 3[a] in the Appendix, he followed Hepburn in using the adverbial form of a verb as its citation form, and this practice seems to have led to some errors. For example, Lyman's list of V+V=V compounds with rendaku includes *degire*, which implies the nonpast affirmative (the modern citation form) /de+gire-ru/ (cf. /de-ru/ 出る ‘to appear’, /kire-ru/ 切れる ‘to be cut’). As noted in the Appendix, however, *NKD* lists the

V+V=N compound /de+gire/ ‘cloth remnant’ as a headword but does not list a corresponding V+V=V compound (/de+gire-ru/ or /de+kire-ru/), and H2 lists *degire* only as a noun.

Lyman also indirectly made the point that *rendaku* is much more likely in V+V=N compounds than in V+V=V compounds (see §7.4.2 above), reporting that of the 195 relevant V+V=N headwords that he counted in H2, 99 (51%) show *rendaku*. Lyman listed these 99 examples in his sub-section 3[b] (Lyman 1894:164–165), and here again there are a few errors (see the Appendix), but the overall trend is clear.

Lyman’s sub-section 3[c] lists 31 examples that have *rendaku* (Lyman 1894:165). Most of these are N+V=V compounds in which E1 is a single Sino-Japanese morpheme and E2 is /zu-ru/ (~su-ru/) ‘to do’. Leaving aside the two examples that do not fit this description (see the Appendix), E1 ends with /N/ in 20 (e.g., /heN+zu-ru/ 変ずる ‘to change’) and with a vowel in nine (e.g., /čoh+zu-ru/ 長ずる ‘to increase’). Lyman may have been hinting at a connection between E1-final /N/ and *rendaku* (see §7.4.6 above), but he did not provide numbers for relevant compounds that lack *rendaku*. The 13 examples listed in Lyman’s sub-section 3[d] (Lyman 1894:165) do lack *rendaku* (see the Appendix), but except for one, they are clearly not relevant for assessing the influence of E1-final /N/. Most are N+V=V compounds in which E1 is a single Sino-Japanese morpheme and E2 is /su-ru/ (~zu-ru/) ‘to do’, but the E1s show the /cu/~Q/ alternation described above in §7.4.6 and are realized with /Q/ when followed by /su-ru/, as in /kuQ+su-ru/ 屈する ‘to yield’. These examples are beside the point in assessing whether an E1-final /N/ promotes *rendaku*, because a moraic obstruent immediately preceding a potential *rendaku* site preempts *rendaku* (see §7.4.6 above). A form like */kuQ+zu-ru/ is impossible.

Given the counts that Lyman reported for other types of compounds, it seems strange that he offered nothing comparable for N+V=V compounds in which E2 is /su-ru/ (without *rendaku*) and E1 is a single Sino-Japanese morpheme not realized with a final moraic obstruent /Q/. We see why, however, when we look at how the compounds in question are treated in Lyman’s primary source of examples, that is, in the 1872 second edition of Hepburn’s dictionary (H2). In the case of /roH+su-ru/ 勞する ‘to exert oneself’, for instance, H2 lists the noun /roH/ ‘toil’ as a headword, but forms of the verb /roH+su-ru/ appear only as examples within the entry for /roH/. As Lyman (1894:165) put it, “Other Chinese words [than those just cited] followed by shi (suru) are not given as compounds, and are not followed by the *nigori*.”

When the “Chinese word” in question is a Sino-Japanese binom, it makes sense to treat its combination with /su-ru/ as a kind of phrase (Vance and Asai 2016:127), since the combination carries what I will call **dephrasal accent**. For

example, /ku⁺.roH su-ru/ 苦勞する 'to suffer' preserves the accent pattern that its E1 /ku⁺.roH/ 'suffering' carries as an independent word. As we saw in §7.2.1, some compounds are accentually non-unified, which means that they are (or at least can be) pronounced as two accent phrases within a single major phrase. In /u⁺so|haQ.ke⁺N+ki/ 嘘発見器 'lie detector', for example, both accents are realized, and the second is downstepped. Short syntactic constructions like those in Table 7.34 can be produced as single accent phrases in which the first accent becomes the accent of the phrase, and this option is sometimes called **dephrasing**. But these constructions can also be pronounced as two accent phrases within a single major phrase, as long as the two underlying accents are not on adjacent moras (Kubozono 1993:107–108).¹¹⁵ Combinations like these, which allow or require two accent phrases, have **phrasal accent**.

Table 7.34: Short Syntactic Phrases with Phrasal Accent.

/go ⁺ .gacu/ 'May' + /ma ⁺ de/ 'until'
→ /go ⁺ .gacu made/~go ⁺ .gacu ma ⁺ de/ 五月まで 'until May'
/me ⁺ .ga/ 'bud'+NOM + /de ⁺ -ru/ 'to appear'
→ /me ⁺ .ga deru/~me ⁺ .ga de ⁺ ru/ 芽が出る 'buds appear'

Accentually non-unified compounds have phrasal accent, but prototypical compounds have **compound accent**, that is, a pattern consistent with the principle that the accent of a compound is predictable from the accent of E2 as an independent word, if it is predictable at all. The accent of E1 as an independent word is irrelevant, and the compound is accentually unified. A typical example is /omoča⁺.bako/ 玩具箱 'toy box' (cf. /omo⁺ča/ 'toy', /hako/ 'box'); compounds with this E2 are generally accented on the last syllable of E1. Borrowing an idea proposed by Kubozono, Itō and Mester (1997), we can think of dephrasal accent as an intermediate category. Unlike compound accent, dephrasal accent preserves the accent of E1. On the other hand, unlike phrasal accent, dephrasal accent does not allow a two-accent-phrase (i.e., non-unified) pronunciation. Thus, /ku⁺.roH su-ru/ 苦勞する 'to suffer' has dephrasal accent because it preserves the accent of /ku⁺.roH/ but cannot be pronounced as [~]/ku⁺.roH|su-ru/ (despite the fact that /ku⁺.roH o|su-ru/, with accusative /o/, can be pronounced as two accent phrases). All combinations of a Sino-Japanese binom with /su-ru/ have dephrasal accent (Kindaichi and Akinaga 2014:62), and rendaku never occurs, that is, a Sino-Japanese binom is never followed by /zu-ru/. It appears that rendaku immediately following the boundary between E1 and E2 is blocked just as effectively by dephrasal accent as by phrasal accent (Vance 2021).

In contrast, one of the examples cited above, /roH+su⁺-ru/ 労する ‘to exert oneself’ carries compound accent, as do many other combinations of a single Sino-Japanese morpheme and /su-rū/ ‘to do’. As an independent word, the verb /su-rū/ is unaccented, so the compound /roH+su⁺-ru/ does not preserve the accent of either E1 (/ro⁺H/ 労 ‘toil’) or E2. Dephrasal accent, as in /so⁺N su-rū/ 損する ‘to suffer a loss’, preserves the accent of E1 (cf. /so⁺N/ ‘loss’). Compounds with /zu-rū/ allow both an unaccented form and an unaccented form, but neither preserves the accent of E1. A typical example is /roN+zu-rū/~ /roN+zu⁺-ru/ 論ずる ‘to argue’ (cf. /ro⁺N/ ‘argument’). Lexicographers eventually eliminated the inconsistency that we see in H2, and modern dictionaries list all the combinations that carry compound accent as headwords, regardless of whether /su-rū/ or /zu-rū/ appears (Vance and Asai 2016:126–127).¹¹⁶

The list Lyman provided in his sub-section 4(a) contains mostly N+V=N compounds, but it also includes many N+V=V compounds (see the Appendix). This list consists of 353 examples that do not show rendaku. As for N+V compounds that do show rendaku, Lyman gave 681 as the number he had found (Lyman 1894:166–167). Thus, by Lyman’s count, the rendaku rate is 681/1034 (66%), but since Lyman did not treat N+V=N compounds separately from N+V=V compounds, this percentage does not mean much. Furthermore, Lyman does not appear to have had any inkling of the tendencies that were discussed above in §7.4.5 in connection with different types of N+V=N compounds. On the other hand, he made a broader (and highly dubious) claim that the presence or absence of rendaku in a compound is largely predictable from the semantic relationship between its elements, and I will consider this proposal below in §7.8.4.

Lyman’s sub-section 4(c) lists 34 examples that lack rendaku (Lyman 1894:168). He described these items as compounds ending in an adjective element, but some are derivatives rather than compounds, and others are analyzed incorrectly (see the Appendix for details). Lyman reported 106 comparable items that have rendaku, but given the heterogeneity of the examples, resulting rendaku rate (34/140=24%) is uninformative even as a crude estimate.

7.5 Reduplication

7.5.1 Reduplicated Mimetic Words

Lyman listed 83 reduplicated words that lack rendaku in sub-section 4(b) of his rendaku article (Lyman 1894:168), and he reported 67 others that have rendaku. The rendaku rate of 45% (67/150) suggests that rendaku may be slightly disfavored in reduplicated words, but many of the examples that Lyman cited

(see the Appendix) are mimetic (see §7.3.1). It is now well known that mimetic morphemes never show rendaku in reduplicated words (Martin 1952:49; Okumura 1955), whereas non-mimetic native morphemes strongly favor rendaku in most types of reduplicated words (see §7.5.2 below). Lyman may have had an inkling that there was something special about mimetic items, but there is no clear indication that he saw them as an identifiable vocabulary stratum with characteristic phonological properties, and several of his 83 examples without rendaku are non-mimetic.

Ogura (1910:21–22) realized that mimetic and non-mimetic reduplicated words behave differently with respect to rendaku. He divided reduplicated words into five categories and provided lists of examples for each type (see §6.2). The two categories that resist rendaku are both mimetic: onomatopoeic items in one category (e.g., /kiri+kiri/ きりきり ‘squeak-squeak’) and non-onomatopoeic items in the other (e.g., /kira+kira/ きらきら ‘glitter-glitter’).¹¹⁷

Initial voiced obstruents are not at all unusual in mimetic elements, but in a reduplicated mimetic word, if E2 begins with a voiced obstruent, so does E1. In short, the two elements must be phonemically identical, as the examples in Table 7.35 show.

Table 7.35: Absence of Rendaku in Reduplicated Mimetic Words.

/kera+kera/ けらけら ‘cackle-cackle’	/toN+toN/ とんとん ‘knock-knock’
/gera+gera/ げらげら ‘guffaw-guffaw’	/doN+doN/ どんどん ‘bang-bang’
*/kera+gera/ けらげら	*/toN+doN/ とんどん

The examples in Table 7.35 also illustrate the well-known phonesthetic association between voiced obstruents and mostly negative attributes (Suzuki 1962: 23–24; Endō 1977:222–228; Komatsu 1981:87–88). This association is especially clear and relatively systematic in the mimetic vocabulary, in which element-initial voiced obstruents signal characteristics such as “big,” “coarse,” “heavy,” “ponderous,” “vulgar,” etc. (Komatsu 1981:75; Hamano 1998:83–85).

Although not as plentiful as reduplicated mimetic words, non-reduplicated mimetic compounds also exist (Hamano 1998:47–50). As the examples in Table 7.36 show, we do not see rendaku in these non-reduplicated words. The examples in Table 7.36 suggests that mimetic elements are simply immune to rendaku, but non-reduplicated mimetic compounds are arguably coordinate, and coordinate compounds generally resist rendaku (see §7.6 below). To demonstrate beyond doubt that mimetic elements are immune to rendaku, it is necessary to look at non-coordinate compounds with mimetic E2s. Hamano (1998:55) lists a few such examples, but the E2s all begin with a vowel or with /p/ (as in /kiN+pika/ 金ぴか

Table 7.36: Absence of Rendaku in Non-Reduplicated Mimetic Compounds.

/peča+kuča/	ぺちやくちや ‘chitter-chatter’
cf. /peča+peča/	ぺちやぺちや ‘chatter-chatter’
/kuča+kuča/	くちやくちや ‘chomp-chomp’
/uro+čoro/	うろちよろ ‘skitter-skatter’
cf. /uro+uro/	うろうろ ‘wander-wander’
/čoro+čoro/	ちよろちよろ ‘flick-flick’

‘golden sparkling’; cf. /kiN/ ‘gold’, /pika+pika/ ‘sparkle-sparkle), which means that rendaku is impossible. The best examples I have encountered contain the mimetic element (typically written in katakana) in reduplicated /kyuN+kyuN/ キュンキュン ‘swoon-swoon’ and in the adverbial phrase /kyuN to/ キュンと ‘with chest-tightening emotion’. Although not listed in dictionaries, non-coordinate/mune+kyuN/ 胸キュン ‘emotional chest-tightening’ (cf. /mune/ ‘chest’) and /oĵi+kyuN/ おじキュン ‘wave of emotion toward an older man’ (cf. /oĵi+saN/ おじさん ‘older man’) are currently in use, and neither has rendaku.¹¹⁸ In a coordinate example like /pika+doN/ ぴかどん ‘flash-bang’, native speakers have the clear intuition that rendaku is not involved. They identify the E2 /doN/ with the reduplicated element in /doN+doN/ どんどん ‘bang-bang’, not with the reduplicated element in /toN+toN/ とんとん ‘knock-knock’.

The 1872 second edition of Hepburn’s dictionary (H2) lists a small number of reduplicated mimetic headwords that contain an element-initial voiceless obstruent other than /p/ and an element-medial voiced obstruent, including /taĵi+taĵi/ たじたじ ‘totter-totter’ and /šobo+šobo/ しょぼしょぼ ‘drizzle-drizzle’. Lyman did not list any of these in sub-section 4(b) of his rendaku article (Lyman 1894:168), presumably because rendaku in such a word would violate Lyman’s Law. I have not found any reduplicated mimetic headwords in H2 that contain an element-initial voiceless obstruent other than /p/ and an element-medial /p/, but if Lyman had encountered an example like /supa+supa/ すばすば ‘puff-puff’, he would have excluded it from his sub-section 4(b) for the same reason, since he viewed /p/ as an inhibitor consonant (see §7.2.1 above).

7.5.2 Reduplicated Non-Mimetic Native Elements

In sharp contrast to reduplicated mimetic words, rendaku is the norm in most other kinds of reduplicated words involving native Japanese bases. For instance, there are quite a few reduplicated words derived from a verb or an adjective

(Martin 1975:410–411, 799–800). Words in this category strongly favor rendaku, even though they tend to be semantically and grammatically very similar to reduplicated mimetic words. Table 7.37 gives some examples, and as the definitions show, these words are typically used as adverbs, although some must be followed by the particle /ni/ as an explicit marker of adverbial status.

Table 7.37: Rendaku in Reduplicated Words Derived from a Verb or Adjective.

/šimi+šimi/ 染み染み ‘fully’ cf. /šimi-ru/ ‘to permeate’	/kasane+gasane/ 重ね重ね ‘repeatedly’ cf. /kasane-ru/ ‘to repeat’
/hore+bore/ 惚れ惚れ ‘fondly’ cf. /hore-ru/ ‘to fall in love’	/hoso+boso/ 細々 ‘barely’ cf. /hoso-i/ ‘slender’
/čiri+širi ni/ 散り散りに ‘scatteringly’ cf. /čir-u/ ‘to become scattered’	/čika+jika/ 近々 ‘soon’ cf. /čika-i/ ‘near’
/tori+dori ni/ 取り取りに ‘variously’ cf. /tor-u/ ‘to take’	

Although the first example in Table 7.37 is derived etymologically from the verb /šimi-ru/, /šimi+šimi/ is usually written (しみじみ), that is, entirely in hiragana, which suggests that native speakers do not see the connection. In one handbook for students studying Japanese as a foreign language (McClain 1981:206), /šimi+šimi/ (written entirely in hiragana) appears on a list of “onomatopoeic words” (defined as *giseigo* 擬声語 ‘sound-imitating words’ and *gitaigo* 擬態語 ‘action-imitating words’). There is no doubt about the mimetic status of the other words on this list, so it may be that /šimi+šimi/ has crossed over, despite its conspicuous rendaku. In general, the boundary between mimetic and non-mimetic native morphemes is both fuzzy and porous (Hamano 1998:6–7).

Reduplicated words like those in Table 7.37 do not have rendaku if it would violate Lyman’s Law (§7.2). For example, we do not see rendaku in /tobi+tobi ni/ 飛び飛びに ‘randomly’ (cf. /tob-u/ ‘to fly’) or in /kudo+kudo/ くだくだ ‘repeatedly’ (cf. /kudo-i/ ‘wordy’). There is, however, one real exception to the pattern in Table 7.37: /sure+sure ni/ 擦れ擦れに ‘almost touching’ (cf. /sure-ru/ ‘to rub’). Since /sure/ does not contain a voiced obstruent, */sure+zure/ would not violate Lyman’s Law. Like /šimi+šimi/ ‘fully’ in the paragraph just above, /sure+sure/ is typically written entirely in hiragana, suggesting that it may have crossed over to the mimetic side of the boundary, with no synchronic connection to its etymological source verb.

There is one example of rendaku in a frequently used word that reduplicates the conclusive form (*shūshikei* 終止形) of a verb (i.e., the modern citation

form) rather than the adverbial form: /kawaru+gawaru/ 代わる代わる ‘by turns’ (cf. /kawar-u/ ‘to take the place of’).¹¹⁹ The adverbial form occurs in the attested synonym /kawari+gawari/ 代わり代わり (which appears as a headword in *NKD*), but it is /kawaru+gawaru/ that is in frequent use today.

In reduplicated nouns as well, *rendaku* is the norm, as the examples in Table 7.38 show. Here too, *rendaku* does not occur if it would violate Lyman’s Law, so we do not see *rendaku* in /tabi+tabi/ 度々 ‘often’ (cf. /tabi/ ‘occasion’) or in /cugi+cugi/ 次々 ‘one after another’ (cf. /cugi/ ‘next one’). Incidentally, as mentioned in the commentary on Lyman’s sub-section 3[b] in the Appendix, there is extensive overlap between nouns and adverbs in Japanese, with many individual lexical items capable of functioning as either (Martin 1975:782–817). No attempt is made to distinguish carefully between the two word classes for the examples cited in this section.¹²⁰

Table 7.38: *Rendaku* in Reduplicated Nouns.

/cuki+zuki/ 月々 ‘every month’ cf. /cuki/ ‘month’	/kuni+guni/ 国々 ‘countries’ cf. /kuni/ ‘country’
/fuši+buši/ 節々 ‘joints’ cf. /fuši/ ‘joint’	/saki+zaki/ 先々 ‘future; destinations’ cf. /saki/ ‘ahead’
/hi+bi/ 日々 ‘days’ cf. /hi/ ‘day’	/sama+zama/ 様々 ‘various’ cf. /sama/ ‘appearance, state’
/hito+bito/ 人々 ‘people’ cf. /hito/ ‘person’	/šina+jina/ 品々 ‘items’ cf. /šina/ ‘item’
/ki+gi/ 木々 ‘trees’ cf. /ki/ ‘tree’	/sore+zore/ それぞれ ‘each one’ ¹²¹ cf. /sore/ ‘that one’
/kona+gona/ 粉々 ‘smithereens’ cf. /kona/ ‘powder’	/toki+doki/ 時々 ‘sometimes’ cf. /toki/ ‘time’

One of the examples listed in Table 7.38, /saki+zaki/ 先々 ‘future’, requires some discussion. As noted above in §7.2.3, some native noun elements seem to be idiosyncratically immune to *rendaku*, that is, they never show *rendaku*, even when no inhibiting factor is relevant. Table 7.39 lists some of these morphemes.¹²² The reason for restricting our attention to native nouns here is that items in this class are in general the most likely to show *rendaku*. Mimetic elements are systematically immune (§7.5.1), and there are complications with verb and adjective elements (§7.4). Almost all recently borrowed elements are immune (§7.3.1), and so are most Sino-Japanese elements (§7.3.2), but we cannot attribute the behavior of the E2s in Table 7.39 to foreign origin. None of the E2s in Table 7.39 contains a medial voiced obstruent, of course, so *rendaku* would not violate Lyman’s Law.

Table 7.39: Native Noun Morphemes Usually Considered Immune Rendaku.

INDEPENDENT WORD	COMPOUND EXAMPLE
/kasu/ 粕 'dregs'	/sake+kasu/ 酒粕 'saké dregs'
/kase/ 枷 'shackles' ¹²³	/aši+kase/ 足枷 'leg shackles'
/kaNmuri/ 冠 'crown'	/kusa+kaNmuri/ 草冠 'grass radical' ¹²⁴
/kemuri/ 煙 'smoke'	/suna+kemuri/ 砂煙 'clouds of sand'
/saki/ 先 'tip'	/yubi+saki/ 指先 'fingertip'
/cuyu/ 露 'dew'	/asa+cuyu/ 朝露 'morning dew'
/himo/ 紐 'string'	/kucu+himo/ 靴紐 'shoelace'

One of the native noun elements in Table 7.39 is /saki/ 先 'tip', and the rendaku in reduplicated /saki+zaki/ 先々 'future; destinations' in Table 7.38 suggests that /saki/ actually is not immune (Rosen 2003:7). But /saki/ can mean 'future' or 'destination' as well as 'tip', and it is clear that the reduplicated word does not involve the meaning 'tip'. Most content morphemes are polysemous, of course, and it is not at all surprising that /saki/ has this range of meanings. It is now well known that a polysemous morpheme can show very different rendaku behavior depending on which of its senses is involved (Vance 2015a:433; Irwin 2016:104–105; see §7.8.3), and it is quite possible that /saki/ is immune when it means 'tip' but not when it means 'future' or 'destination'. On the other hand, /saki+zaki/ is the only word that contains the allomorph /zaki/; all other compounds that involve the meanings 'future' or 'destination' have /saki/, as in /oi+saki/ 古い先 'remaining years' (cf. /oi/ 'old age') and /tabi+saki/ 旅先 'journey destination' (cf. /tabi/ 'journey').¹²⁵ A better solution to this problem is to say that the tendency for non-mimetic reduplicated words to have rendaku is so strong that even otherwise immune elements conform. Nishimura (2007:22–23) makes this point and cites a few other native Japanese morphemes with a rendaku allomorph that appears only in reduplication: /haši+baši/ 端々 'here and there' (cf. /haši/ 'edge'), /šimo+jimo/ 下々 'the common people' (cf. /šimo/ 'lower part'), /sumi+zumi/ 隅々 'every nook and cranny' (cf. /sumi/ 'corner'). There is even an example involving a Sino-Japanese binom: /koH·tai+goH·tai/ 交代交代 'alternating', which does not yet appear in dictionaries but seems to be quite frequent. This word is like the examples in Table 7.7 above in §7.3.2, since the affected element is a binom (cf. /koH·tai/ 'interchange'). This binom does not show rendaku as the second element in any other word (e.g., /buQ·šicu+koH·tai/ 物質交代 'metabolism'; cf. /buQ·šicu/ 'substance'), so the rendaku in the reduplicated word is a straightforward extension of the pattern in reduplicated native nouns.

Three of the rendaku-immune morphemes in Table 7.39 contain a medial /m/, and variability between /m/ and /b/ was characteristic of many words in Early Middle Japanese (Martin 1987:31–32; Unger 2004:331–332). As for the three morphemes in question, ^{EMJ}/keburī/ ‘smoke’ and ^{EMJ}/pibo/ ‘string’ are attested, and ^{MT}/kaNmuri/ ‘crown’ is etymologically related to the verb ^{MT}/kabur-u/ 被る ‘to put on one’s head’.¹²⁶ The expectation is that Lyman’s Law would have prevented rendaku in a morpheme containing a voiced obstruent, so it could be that immunity developed because of /b/ and then persisted even after the forms with /m/ eventually won out (Nakagawa 1966:313–314). On the other hand, there are morphemes that showed this kind of variability historically but developed rendaku even so (Vance and Asai 2016:131). One example is the base of the verb /susam-u/ 荒む ‘to become dissolute’, which is etymologically the same as the second root in /kuči+zusam-u/ 口遊む ‘to sing to oneself’ (cf. /kuči/ ‘mouth’), although present-day speakers are unlikely to make the connection. Interestingly, ^{EMJ}/kuti+zusab-u/ is also attested, even though it violates Lyman’s Law.¹²⁷

There are also a few adjectives containing a reduplicated base followed by the derivational suffix /ši/. There is a brief discussion of this suffix in the commentary on Lyman’s sub-section 4(c) in the Appendix. As Table 7.40 shows, the examples of this pattern involve a variety of base types. The reduplicated base can be nominal, like /mono/ ‘thing’ in /mono+mono+ši-i/ 物々しい ‘ostentatious’, adjectival, like /waka/ (cf. /waka-i/ ‘young’) in /waka+waka+ši-i/ 若々しい ‘youthful’, or verbal, like /nare/ (cf. /nare-ru/ ‘to get accustomed’) in /nare+nare+ši-i/ 馴れ馴れしい ‘overly familiar’.¹²⁸ Rendaku does not occur if it would violate Lyman’s Law, of course, so we do not see rendaku in /toge+toge+ši-i/ 刺々しい ‘harsh’ (cf. the native Japanese noun /toge/ ‘thorn’), but otherwise rendaku is the norm. Some of the reduplicated bases in Table 7.40 are hard to relate synchronically to any other existing vocabulary item, and even when the connection is obvious, the semantic relationship is often less than transparent.

Table 7.40: Rendaku in Reduplicated Bases Combined with Adjectival /ši/.

/fute+bute+ši-i/ ぶてぶてしい ‘impudent’ (cf. the verb /fute-ru/ ‘to resist resentfully’) ¹²⁹
/haka+baka+ši-i/ 捗々しい ‘expeditious’ (cf. the noun /haka/ ‘progress’) ¹³⁰
/hana+bana+ši-i/ 華々しい ‘splendid’ (cf. the noun /hana/ ‘flower’)
/karu+garu+ši-i/ 軽々しい ‘careless’ (cf. the adjective /karu-i/ ‘light’)
/kai+gai+ši-i/ 甲斐甲斐しい ‘diligent’ (cf. the noun /kai/ ‘worth’) ¹³¹
/sora+zora+ši-i/ 空々しい ‘feigned’ (cf. the noun /sora/ ‘sky’)
/take+dake+ši-i/ 猛々しい ‘fierce’ (cf. the adjective /take-i/ ‘courageous’) ¹³²

In contrast to the examples considered so far in this section, there is one type of native, non-mimetic reduplicated word that systematically resists rendaku. Reduplicating a verb base (the adverbial form) to convey the meaning ‘while (repeatedly) doing’ the action of the verb is a productive, though not frequently used, pattern in modern Tōkyō Japanese. Reduplications of this type are accentually unified (Martin 1975:408–409), but they have dephrasal accent. For example, from the verb /ka⁺k-u/ 書く ‘to write’ we get /ka⁺ki+kaki/ ‘while writing’ (cf. adverbial /ka⁺ki/).¹³³ As explained above in §7.4.7, dephrasal accent seems to block rendaku. Reduplicated verb bases that have rendaku, like those in above in Table 7.37, also have compound accent, as in /kori+go⁺ri/ 懲り懲り ‘sick and tired’ (cf. /kori⁺-ru/ ‘to learn from bitter experience’, adverbial /ko⁺ri/).

Among the 83 reduplicated words that Lyman listed in sub-section 4(b) of his rendaku article (Lyman 1894:168), all of which lack rendaku (see §7.5.1 above), only four clearly involve a verb or adjective base. One of these four is the obsolete adverb /saši+cume+saši+cume/ 差し詰め差し詰め ‘nocking (arrows) in rapid succession’, which could perhaps be considered an example of the pattern described in the paragraph just above. The base verb itself, however, is also obsolete (see the commentary on this example in the Appendix). Lyman’s other three examples are taken up below in §7.5.3.

As noted above in §7.5.1, Ogura (1910:21–22) divided reduplicated words into five categories (see §6.2), two-mimetic and three non-mimetic. His examples for the three non-mimetic categories, which favor rendaku, are like those in Tables 7.37 and 7.38 above: reduplicated verb bases, reduplicated adjective bases, and reduplicated nouns.

7.5.3 Quasi-Mimetic Reduplicated Words

We see a conspicuous resistance to rendaku in quasi-mimetic examples (Vance 2014b) like those in Figure 7.7, both of which involve reduplication of a native noun. Even recent borrowings can provide bases for quasi-mimetics, as in /rabu+rabu/ ラブラブ ‘lovey-dovey’ (cf. /rabu/ ‘love’ from English *love*). Rendaku is beside the point in /rabu+rabu/, of course, since /r/ is not a voiceless obstruent, but we need some other explanation for the examples in Figure 7.7.

The picture on the left in Figure 7.7 shows the label on a box of striped paper clips. The noun involved is /šima/ 縞 ‘stripe’, and /šima+šima/ means something like ‘stripey’. The picture on the right in Figure 7.7 shows a travel agency’s ad for a tour that includes a meal featuring crab. The noun involved is /kani/ 蟹 ‘crab’, and /kani+kani/ means something like ‘crab, crab, and more

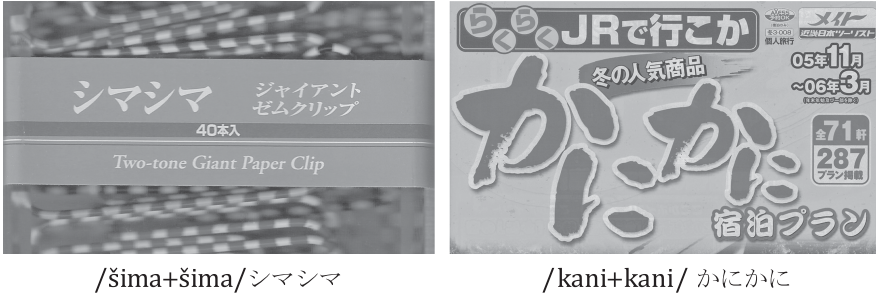


Figure 7.7: Absence of Rendaku in Quasi-Mimetic Reduplicated Nouns.

crab'.¹³⁴ As we saw above in §7.5.2, some native noun morphemes are idiosyncratically immune to rendaku, but these two noun morphemes are not. We see the rendaku allomorph /jima/ in examples like /yoko+jima/ 横縞 ‘horizontal stripe’ (cf. /yoko/ ‘sideways’) and the rendaku allomorph /gani/ in examples like /kabuto+gani/ 兜蟹 ‘horseshoe crab’ (cf. /kabuto/ ‘helmet’). If we make the intuitively plausible claim that the examples in Figure 7.7 resist rendaku because they are being treated as mimetic, it is puzzling that reduplicated words derived from a verb or an adjective favor rendaku so strongly. As mentioned above in §7.5.2 in connection with the examples in Table 7.37, words like /hore+bore/ 惚れ惚れ ‘fondly’ (cf. /hore-ru/ ‘to fall in love’) are semantically and grammatically very similar to reduplicated mimetic words.

Nishimura (2013:83–87) suggests distinguishing two kinds of reduplication. In “intensive/plural reduplication” the head is the base morpheme and appears on the right (reduplicant+base_H), and the reduplicated word inherits its syntactic category from the head. In contrast, “mimetic reduplication” yields words with “adjectival or adverbial meanings, even though the base stems are nouns” (Nishimura 2013:85). The head is on the right in mimetic reduplication too, but it is the reduplicant rather than the base (base+reduplicant_H), so the head can be categorized as an adjective or an adverb, and the reduplicated word can inherit that category. This approach can successfully handle the quasi-mimetic examples in Figure 7.7, but the semantic distinction between the two kinds of reduplication is not as clear-cut as we might hope. Several of the well-established examples in Table 7.38 above in §7.5.2 have adjectival or adverbial meanings, even though they show rendaku. Nonetheless, the absence of rendaku in quasi-mimetic words is probably the productive pattern in present-day Tōkyō Japanese. Some verb-base reduplications that lack rendaku clearly belong in the quasi-mimetic category (Nishimura 2013:98–100), including /suke+suke/ 透け透け ‘see-through’ (cf. /suke-ru/ ‘to be transparent’).

As also noted above in §7.5.2, a few of the 83 examples without rendaku that Lyman listed in his sub-section 4(b) involve a reduplicated verb or adjective base, and three of these are arguably quasi-mimetic. The most dubious of the three is /taka+taka+yubi/ 高々指 ‘middle finger’, in which the reduplicated element is the root of the adjective /taka-i/ ‘tall’. According to *NKD*, the compound originated as /take+taka+yubi/ (cf. /take/ 丈 ‘height’), which suggests that the modern form is a folk etymology. As mentioned above in §7.4.3, it seems that this adjective root always shows rendaku as an E2 when it means ‘amount’, as in /kiN+daka/ 金高 ‘amount of money’ (cf. /kiN/ ‘money’) and /kasegi+daka/ 稼ぎ高 ‘amount of earnings’ (cf. /kaseg-u/ ‘to earn’). As an E2 meaning ‘tallness, height; rise’, however, it sometimes appears without rendaku, as in /sei+taka/ 背高 ‘tall’ (cf. /sei/ ‘height, stature’), although even in this sense it appears with rendaku more often than not, as in /naka+daka/ 中高 ‘convexity’ (cf. /naka/ ‘middle’). The independent word /taka+daka/ 高々 has rendaku and is used adverbially to mean ‘at most’ or, when followed by the particle /to/ (an explicit marker of adverbial status), ‘up high, aloft’. Despite the intuitive appeal of categorizing /taka+taka/ in /taka+taka+yubi/ as quasi-mimetic, this explanation for the absence of rendaku is unconvincing because it is implausible to claim that this /taka+taka/ is more mimetic-like than /taka+daka/. Quasi-mimetic categorization seems less questionable for the other two relevant examples.

According to the *NKD* entry for /seki+seki/ せきせき ‘frequently, repeatedly’, the reduplicated element is etymologically the adverbial form of the verb /sek-u/ 急く ‘to be in a hurry’. In dictionaries, however, /seki+seki/ is written entirely in hiragana, suggesting that there is no synchronic connection to the verb (see the commentary on this item in the Appendix) and making it likely that ordinary speakers would see it as mimetic or mimetic-like.¹³⁵ In any case, since this reduplicated word is clearly obsolete, it can be set aside in assessing the suggestion offered above that absence of rendaku the productive pattern in quasi-mimetic reduplicated words today.

Lyman's /teri+teri+boH-zu/ 照り照り坊主 ‘paper doll hung out to bring clear weather’ (literally ‘shining-shining monk’; cf. /ter-u/ ‘to shine’, /boH-zu/ ‘Buddhist monk’) has been supplanted in modern Tōkyō Japanese by /teru+teru+boH-zu/, which reduplicates the conclusive form of the verb instead of the adverbial form (see the commentary on this item in the Appendix). Although it is atypical to reduplicate a conclusive form, /kawaru+gawaru/ 代わる代わる ‘by turns’ (cf. /kawar-u/ ‘to take the place of’) is in common use and has rendaku, as we saw above in §7.5.2. It seems intuitively correct to claim that /teru+teru/ is more mimetic-like than /kawaru+gawaru/ and thus consistent with the claim that quasi-mimetic reduplicated words resist rendaku.

As noted above in §7.4.7, Lyman listed V+V=N compounds in sub-section 3 [b] of his *rendaku* article (Lyman 1894:164–165), and six of his examples contain a reduplicated verb base, like some of the examples in Table 7.37 in §7.5.2. These six should be among the 67 examples of *rendaku* in reduplicated words that he reported (see §7.5.1 above), but we cannot be sure, since he did not list these 67 words. One of the six examples is /šimi+ĵimi/ しみじみ ‘fully’. As explained in §7.5.2, it seems that most ordinary Tōkyō speakers today do not see a connection between this reduplicated word and its etymological base verb /šimi–ru/ 染みる ‘to permeate’. Nonetheless, /šimi+ĵimi/ retains *rendaku*, despite its mimetic-like meaning and grammatical behavior. In general, the apparent tendency for quasi-mimetic reduplicated words to resist *rendaku* is not strong enough to undo *rendaku* in words that are already lexicalized. The other five examples are shown below in Table 7.41.

Table 7.41: Reduplicated Verb Bases.

/hanare+banare ni/	離れ離れに ‘separately’	cf. /hanare–ru/ ‘to become separated’
/hare+bare to/	晴れ晴れと ‘cheerfully’	cf. /hare–ru/ ‘to become sunny’
/kare+gare ni/	枯れ枯れに ‘starting to wither’	cf. /kare–ru/ ‘to wither’
/kire+gire ni/	切れ切れに ‘in pieces’	cf. /kire–ru/ ‘to be cut’
/tae+dae ni/	絶え絶えに ‘feebly’	cf. /tae–ru/ ‘to cease to exist’

Except for /kare+gare/, the reduplicated words in Table 7.41 are still in common use, and unlike /šimi+ĵimi/ they all require a following particle (/ni/ or /to/) to function adverbially. Since none of these five examples seems as mimetic-like as /šimi+ĵimi/, the presence of *rendaku* is unsurprising.

Lyman also cited two examples with a reduplicated base followed by adjective-forming /ši/, like those in Table 7.40 in §7.5.2. One is /sewa+sewa+ši–i/ 忙々しい ‘busy’, which is on the list of examples of reduplication in his sub-section 4(b), and the other is /kira+kira+ši–i/ 煌々しい ‘radiant’, which is on the list of examples ending in adjectival elements in his sub-section 4(c). Both of these words are now obsolete, and the latter almost certainly was not a colloquial vocabulary item even when Lyman was writing.¹³⁶ The root /sewa/ is not mimetic, and the *NKD* entry for /sewa+sewa+ši–i/ gives /sewa+zewa+ši–i/, with *rendaku*, as an alternative pronunciation, but the form without *rendaku* is a clear exception to the general pattern for non-mimetic reduplicated words.¹³⁷ The root /kira/, on the other hand, is mimetic, despite the kanji typically used to write /kira+kira+ši–i/, and Lyman listed /kira+kira/ きらきら ‘sparkle-sparkle’ separately as one of the reduplicated words in his sub-section 4(b).¹³⁸ The reason

/kira+kira+ši-i/ appears in sub-section 4(c) is presumably the absence of rendaku in the derivational suffix /ši/.¹³⁹ The *NKD* entry says that /kira+gira+ši/, with rendaku, is attested as an alternative pronunciation for the classical conclusive form, and this is an example of rendaku in a base that is mimetic, at least etymologically.¹⁴⁰ We can take this instance of rendaku as one more indication that the boundary between the mimetic and non-mimetic sectors of the Japanese vocabulary is not just fuzzy but porous, as noted above in §7.5.2.

7.5.4 Reduplicated Sino-Japanese Morphemes

Lyman's rendaku article treats Sino-Japanese elements in section 2 (Lyman 1894:162–164) and in sub-sections 3[c] and 3[d] (Lyman 1894:165), but there are also three Sino-Japanese examples in sub-section 4(b), which lists 83 reduplicated words that lack rendaku (Lyman 1894:168; see §7.5.1 above). These three Sino-Japanese examples are /ko·ke+ko·ke/ 虚仮虚仮 'idiotic' (cf. /ko·ke/ 'stupidity'), which is now obsolete, and the two binoms /hi·hi/ 狒々 'baboon' and /soH·soH/ 早々 'right after'. On the other hand, there are three binoms consisting of a reduplicated morpheme in Lyman's section 2 on his lists of Sino-Japanese examples that he described as having rendaku: /saN·zaN/ 散々 'severely', /sei·zei/ 精々 'at most', and /seN·zeN/ 前々 'formerly'.¹⁴¹ The voiced obstruents in the first two are historically unambiguous instances of new voicing, and I argued above in §7.3.3 that binom-medial new voicing should not be treated as rendaku in a synchronic analysis of modern Tōkyō Japanese.¹⁴²

The rate of new voicing in Sino-Japanese binoms consisting of a reduplicated morpheme can be used as another argument against treating binom-medial new voicing as rendaku, but the few examples cited in the paragraph just above are not sufficient. A systematic search for relevant examples is necessary to determine whether such binoms consisting of a reduplicated morpheme show any general tendency to favor or disfavor new voicing, and a modern electronic dictionary makes it easy to do such a search. The number of phonemic sequences that can realize a Sino-Japanese morph is quite small (Martin 1952:24–26), and many of these morph shapes are not relevant here because they do not begin with a voiceless obstruent. Even if we assume that new voicing is rendaku, we do not have to worry about Lyman's Law, because no Sino-Japanese morph has a medial voiced obstruent unless we treat /sabu/ in the name /saburoH/ 三郎 as a Sino-Japanese morph (see §7.2.4 above). Even if we do, it does not matter for present purposes, since there is no reduplicated word ^x/sabu·sabu/.

A systematic search of this kind (Vance 2011:473–474) found new voicing in only a small minority of Sino-Japanese binoms consisting of a reduplicated morpheme. If the sample is limited to words in common use by considering only those listed as headwords in a dictionary for elementary-school children (Saeki and Mabuchi 1987), the new-voicing rate is 15% (four words with new voicing and 22 without). If we treat these instances of binom-medial new voicing as *rendaku*, it is obvious that Sino-Japanese binoms consisting of a reduplicated morpheme do not behave either like reduplicated mimetic words (which never show *rendaku*; see §7.5.1) or like reduplicated non-mimetic native words (which strongly favor *rendaku*, as long as Lyman's Law is not violated; see §7.5.2). One possible response to these disparities is simply to say that the *rendaku* rates for reduplicated morphemes differ depending on vocabulary stratum, just as the *rendaku* rates for non-reduplicated words do. On the other hand, if new voicing in Sino-Japanese binoms consisting of a reduplicated morpheme is not *rendaku*, as proposed above in §7.3.3, there is no expectation that the medial-voicing rate should have anything to do with the *rendaku* rate in reduplicated native morphemes. The disparity can therefore be used as a weak argument against treating binom-medial new voicing as *rendaku* (Vance 2011:477). Historically, of course, post-nasal voicing is the explanation for most instances of new voicing in Sino-Japanese binoms consisting of a reduplicated morpheme, just as it is for most instances of medial new voicing in non-reduplicated binoms (see §7.3.5 above).

Incidentally, the adjectives /soH·zoH+ši-i/ 騒々しい 'noisy' and /fuku·buku+ši-i/ 福々しい 'plump and happy looking' both look as if they involve a reduplicated Sino-Japanese morpheme followed by the derivational suffix /ši/ that we saw in Table 7.40 in §7.5.2. Both these adjectives are common enough to appear as headwords even in a dictionary for elementary-school children (Saeki and Mabuchi 1987).¹⁴³ Etymologically, the reduplicated element in /soH·zoH+ši-i/ is almost certainly not Sino-Japanese, and the reduplicated element in /fuku·buku+ši-i/ may not be either, but there is no real doubt that a literate modern speaker will identify /soH/ with Sino-Japanese /soH/ 騒 'noise' (a bound element that appears in binoms like /soH·oN/ 騒音 'noisy sound') and /fuku/ with Sino-Japanese /fuku/ 福 'good fortune' (which occurs as a word on its own).¹⁴⁴ These two adjectives are therefore relevant examples for a synchronic description of reduplicated Sino-Japanese binoms and can be added to the set of examples in common use that was reported in the paragraph just above. The result is that the *rendaku* rate rises from 15% to 21% – still much lower than the rate when relevant native morphemes are reduplicated.

7.6 Coordinate Compounds

7.6.1 Coordinate Compounds with Native Elements

If a two-element compound A+B is a coordinate compound, A is not a modifier of B. Instead, the two elements have equal status, and the meaning of the compound can usually be paraphrased 'A and B'. Researchers have known for a long time that Japanese coordinate compounds resist rendaku (Okumura 1955; Sakurai 1966:41). The examples in Table 7.42 illustrate.

Table 7.42: Absence of Rendaku in Coordinate Compounds.

/oya+ko/ 親子 'parent and child'	cf. /osana+go/ 幼子 'young child'
/kusa+ki/ 草木 'grass and trees'	cf. /nae+gi/ 苗木 'seedling tree'
/cuki+hi/ 月日 'days and months'	cf. /naka+bi/ 中日 'middle day'
/kami+hotoke/ 神仏 'gods and Buddhas'	cf. /iki+botoke/ 生き仏 'living Buddha' ¹⁴⁵
/yomi+kaki/ 読み書き 'reading and writing'	cf. /haširi+gaki/ 走り書き 'hurried writing'

All the E2s in Table 7.42 show rendaku at least sometimes in non-coordinate compounds, and the table gives one example with rendaku for each E2. As already noted several times (see especially §7.5.2), some morphemes are idiosyncratically immune to rendaku, so examples with immune E2s must be disregarded in determining whether coordinate compounds resist rendaku.¹⁴⁶ Coordinate examples like /migi+hidari/ 右左 'right and left' must also be disregarded, of course, since Lyman's Law would rule out */migi+bidari/. None of the E2s in Table 7.42 contains a non-initial voiced obstruent, so the absence of rendaku in the coordinate compounds cannot be attributed to Lyman's Law.

The two elements in an A+B **appositional compound** also have equal status but refer to the same entity rather than to two separate entities (Haspelmath 2002:89). An appositional compound can usually be paraphrased 'A and simultaneously B', as in English *singer-songwriter* and Japanese /ryoH-sai+keN-bo/ 良妻賢母 'good wife and wise mother' (which consists of two Sino-Japanese binoms). Coordinate and appositional compounds have typically been lumped together in rendaku research, and the A+A=A compounds /ita+gayu-i/ 痛痒い 'painful and itchy' (cf. /ita-i/ 'painful', /kayu-i/ 'itchy') and /ama+zuQpa-i/ 甘酸っぱい 'sweet and sour' (cf. /ama-i/ 'sweet', /suQpa-i/ 'sour') have been cited as counterexamples to the claim that coordinate compounds resist rendaku (Irwin 2012:28; Vance 2015a:426).¹⁴⁷ Appositional compounds containing native elements are rare, but the rendaku in these two examples suggests that appositional and coordinate compounds should probably be treated separately.

In examples like Sino-Japanese /ryoH·sai+keN·bo/ and recently borrowed /šiNgaH+soN·guraiH/ シンガー ソングライター, of course, the absence of *rendaku* is beside the point. In both cases, *rendaku* would violate Lyman's Law, and E2s from these vocabulary strata generally resist *rendaku* anyway (§§7.3.1–2).

One possible coordinate example with *rendaku* is /suji+bone/ 筋骨 (cf. /suji/ 'sinew; muscle', /hone/ 'bone'). Dictionaries give coordinate 'sinews and bones' as one definition, but they also give non-coordinate 'cartilage' as another definition.¹⁴⁸ In any case, this word seems to be obsolescent, and ordinary native speakers who encounter it are likely to interpret it as non-coordinate.¹⁴⁹

There are, however, three truly convincing examples of *rendaku* in a coordinate compound. One is /mie+gakure/ 見え隠れ 'appearing and disappearing' (cf. the verbs /mie-ru/ 'to become visible', /kakure-ru/ 'to become hidden').¹⁵⁰ The meaning of this word is unambiguously coordinate, and even though /mie+kakure/, without *rendaku*, exists as an alternative pronunciation, there are modern Tōkyō speakers who accept only the form with *rendaku* as correct.¹⁵¹

The other two convincing examples both involve coordinate compounds contained in longer compounds. Three-element /aši+de+matoi/ 足手纏い 'hindrance' consists of /aši/ 'foot', /te~/de/ 'hand', and /matoi/ 'wrapping' (cf. the verb /mato-u/ 'to wrap').¹⁵² The figurative meaning 'hindrance' comes from the notion of binding a person's feet and hands, so the constituent structure is clearly {{/aši+de/}/+matoi/}. Despite the *rendaku*, the inner layer of compounding, /aši+de/, is obviously coordinate, even though there is no independent word /aši+de/. Some dictionaries list /aši+te/ (without *rendaku*) as a word meaning 'feet and hands', but /te+aši/ 手足 'hands and feet', with the two morphemes in the opposite order, is far more common.¹⁵³ Many dictionaries give /aši+te+matoi/ (without *rendaku*) as an alternative pronunciation, but there is no question that /aši+de+matoi/ (with *rendaku*) is the current norm (Shioda 2001:101).¹⁵⁴

In the more complex word /geN·kiN+ji·doH+azuke+barai+ki/ 現金自動預け払い機 'automated teller machine', the elements are the Sino-Japanese binoms /geN·kiN/ 'cash' and /ji·doH/ 'automatic operation', the verb bases /azuke/ (cf. /azuke-ru/ 'to entrust') and /harai~/barai/ (cf. /hara-u/ 'to pay'), and Sino-Japanese /ki/ 'machine'. The constituent structure seems to be {{/geN·kiN/ +{/ji·doH/ +{/azuke+barai/}}}/+ki/}, but what is important for present purposes is that /azuke+barai/ is clearly a constituent and clearly has the coordinate meaning 'depositing and repaying', presumably based on the two V+V=N compounds /azuke+ire/ 預け入れ 'depositing' (cf. /ire-ru/ 'to put in') and /harai+modoši/ 払い戻し 'paying back (as a withdrawal)' (cf. /modos-u/ 'to return').¹⁵⁵ Nonetheless, we see *rendaku*.

7.6.2 Coordinate Sino-Japanese Binoms

There seem to be quite a few coordinate Sino-Japanese binoms in common use, but it is not easy to estimate how many. To determine whether a binom is coordinate, it is necessary to check its meaning, which means that a systematic search cannot be done automatically. For present purposes, of course, we are interested only in binoms with a second element beginning either in a voiceless obstruent or in a voiced obstruent that is an instance of new voicing. For example, we do not see new voicing in /soN·toku/ 損得 'loss and gain', but we do in /moN·doH/ 問答 'question and answer'.¹⁵⁶

It is time-consuming but feasible to find all the coordinate Sino-Japanese binoms with new voicing that are listed in *Daijirin* by using this comprehensive dictionary's reverse-lookup counterpart (Sanseidō Henshū-jo 1997), which groups together words ending the same way according to the kanji used to write their final elements. As mentioned above in §7.5.4, the number of different phonemic sequences that can realize a Sino-Japanese morph is quite small, and only those that begin with a voiceless obstruent are relevant here. Furthermore, for many eligible Sino-Japanese morphemes there are no actual instances of new voicing in a binom, and even when there are instances of new voicing, it typically appears in only a small minority of the relevant binoms. Consequently, the number of binoms with new voicing that need to be checked for coordinate meaning is manageably small (Vance 2011:475–476).

To illustrate the search method with a concrete example, consider the Sino-Japanese morpheme written with the kanji 〈心〉 and usually realized as /šiN/ 'heart, mind'. As noted in connection with Table 7.10 in §7.3.3, new voicing did affect some binoms that end with this morpheme, yielding /jiN/ in modern Tōkyō Japanese. The *Daijirin* headwords that end with /šiN/ or /jiN/ written 〈心〉 are all grouped into a single list in the reverse-lookup dictionary, and each word is given both in kanji and in hiragana. All that is necessary is to scan the hiragana spellings and pick out the binoms that end 〈じん〉, which spells /jiN/. In this particular case, there are 329 words on the list, 202 of which are Sino-Japanese binoms (excluding proper names). Of these 202 binoms, only seven end with /jiN/, including /yoH·jiN/ 用心 'caution' (one of the examples in Table 7.10), and of these seven, only one is coordinate: /kaN·jiN/ 肝心 'essential' (literally 'liver and heart'). The great majority of the binoms on this list (195/202) do not have new voicing, that is, they end with /šiN/, as in /hoH·šiN/ 放心 'absent-mindedness'.

To calculate an overall new voicing rate for coordinate Sino-Japanese binoms, it would be necessary to extract the relevant comparison group from *Daijirin*, namely, coordinate binoms that have a second element beginning with a

voiceless obstruent (and therefore did not develop new voicing). For example, in the case of the 202 relevant binoms ending in /šiN/~/jiN/ 心 ‘heart, mind’ (see the paragraph just above), since only seven have new voicing, each of the remaining 195 would have to be checked for coordinate meaning in assembling the comparison group. In the case of /šiN/ 震 ‘quaking’, since none of the 20 binoms listed in *Daijirin* that end with this morpheme has /jiN/ instead of /šiN/, all 20 would have to be checked for coordinate meaning in assembling the comparison group. Overall, the set of words that would have to be checked one by one for coordinate meaning is dauntingly large, and it is hard to imagine anyone with the time and the patience to carry out such an enormous task. In the absence of this comparison group, of course, it is impossible to give even a rough estimate of the proportion of coordinate Sino-Japanese binoms that have new voicing.

Of the coordinate Sino-Japanese binoms that did develop new voicing, eight are such common vocabulary items that they are listed even in a dictionary for elementary-school children (Saeki and Mabuchi 1987). Table 7.43 shows these eight examples.¹⁵⁷

Table 7.43: Coordinate Sino-Japanese Binoms with New Voicing.

/iN·ga/	因果 ‘cause and effect’
/toH·zai/	東西 ‘east and west’
/koN·jaku/	今昔 ‘past and present’
/šuN·juH/	春秋 ‘spring and autumn’
/ši·juH/	始終 ‘always’ (literally ‘beginning and ending’)
/kaN·jiN/	肝心 ‘essential’ (literally ‘liver and heart’)
/moN·doH/	問答 ‘question and answer’
/naN·boku/	南北 ‘south and north’

Even without knowing the proportion of coordinate Sino-Japanese binoms that have new voicing, it seems safe to say on the basis of the examples in Table 7.43 that coordinate Sino-Japanese binoms have not resisted new voicing as strongly as native coordinate compounds have resisted *rendaku*. Notice, incidentally, that the examples in Table 7.43 show the one-way relationship between new voicing and an immediately preceding nasal (see §7.3.5 above): in six of the eight words, the first element ends in /N/.¹⁵⁸ As already noted in §7.3.5 and again in §7.5.4, the explanation for most instances of new voicing in Sino-Japanese binoms is post-nasal voicing.

As explained above in §7.3.3, it is highly problematic to treat binom-medial new voicing synchronically as *rendaku* in modern Tōkyō Japanese. If in fact

new voicing is not unusual in coordinate Sino-Japanese binoms, as suggested in the paragraph just above, there is another disparity between new voicing and rendaku, since rendaku is strongly disfavored in coordinate compounds consisting of native elements, as we saw in §7.6.1. This disparity is similar to the one pointed out above in §7.5.4 in connection with reduplication. As we saw, Sino-Japanese binoms consisting of a reduplicated morpheme seldom show new voicing, whereas reduplicated non-mimetic native words strongly favor rendaku. If we insist on treating binom-medial new voicing as synchronic rendaku, these disparities can be attributed to vocabulary stratum differences, but if binom-medial new voicing is not rendaku, the disparities are non-issues (Vance 2011:477).

7.6.3 Lyman's Coordinate Examples

Lyman listed 29 examples in sub-section 4(d) of his rendaku article (Lyman 1894:168–169), all without rendaku, and he described these examples as “juxtaposed words of allied or contrastive meaning.” Most of these examples are coordinate, including a few non-reduplicated mimetic compounds: /hirari+kururi/ ‘turning and flashing’, /muča+kuča/ ‘disorganized’, /musa+kusa/ ‘disorganized’, /norari+kurari/ ‘indolently’, and /nora+kura/ ‘indolently’.¹⁵⁹ Lyman overlooked two other coordinate compounds, which ended up on the list of miscellaneous examples without rendaku in his sub-section 4(e) (Lyman 1894:169–170): /ura+hara/ 裏腹 ‘the opposite’ (cf. /ura/ ‘back’, /hara/ ‘belly’) and /eda+ha/ 枝葉 ‘branches and leaves’.¹⁶⁰

One of Lyman's coordinate examples is /kage+hinata/ 陰日向 ‘mismatch between overt and covert behavior’ (literally ‘shade and sunshine’), and /hinata/ is etymologically composite. As the kanji (日) implies, the first syllable is the same as /hi/ 日 ‘sun’, and Martin (1987:407) suggests that the last two syllables originated as a contraction of the genitive particle /no/ and the noun /kata/ 方 ‘direction’. If a modern speaker identifies the /hi/ in /hinata/ with the morpheme meaning ‘sun’ (perhaps treating /nata/ as a cranberry morph), then the coordinate compound has three elements: /kage+hi+nata/. Since the constituent structure is clearly {/kage+{/hi+nata/}}, rendaku would violate the Right-Branch Condition (see §7.2.3 above). Of course, /hinata/ is presumably strict rather than loose in Otsu's (1980:211–213) terms. The important point here is that we expect /kage+hinata/ to resist rendaku because it is coordinate, regardless of whether or how a speaker analyzes its E2.

Ogura (1910:32) pointed out that quite a few of the 29 examples in Lyman's sub-section 4(d) are not actually coordinate, but he did not dispute the claim

that coordinate compounds resist *rendaku*.¹⁶¹ On the other hand, Ogura (1910:33) did not mention that /*arai+hari*/ 洗い張り ‘washing and stretching’ is coordinate when he included it on his list of examples with E2s that sometimes do and sometimes do not show *rendaku*. Interestingly, Ogura did not say anything about the strangest of Lyman’s erroneous examples, namely, the exclamation /*ana+kašiko*/ ‘oh-fearsome’.¹⁶² This expression is now obsolete, but Hepburn listed it in all of the first three editions of his dictionary (H1, H2, and H3). Etymologically, /*ana*/ is an interjection, and /*kašiko*/ is the same as the root of the modern Tōkyō adjective /*kašiko-i*/ 賢い ‘clever’. Frellesvig (2010:79–80) says that in Old Japanese a bare adjective stem “could be used exclamatorily, usually reinforced by an interjection or interjectional particle,” and he cites ^{OJ}/*ana omosirwo*/ ‘how wonderful’ as an example.¹⁶³ According to the entry in *Jōdai*, the semantic range of the OJ adjective corresponding to /*kašiko-i*/ included meanings such as ‘fearsome’ and ‘awe-inspiring’. Since Lyman did not give any definitions for the examples on his lists, there is no way to know how he interpreted /*ana+kašiko*/, and there is no obvious explanation for why he categorized it as a coordinate compound.¹⁶⁴

7.7 Irregularity and Variability

7.7.1 Pervasive Irregularity

Phonologists who know modern Tōkyō Japanese are well aware that *rendaku* is pervasively irregular (Vance 2015a:435–436; Vance, Kaneko and Watanabe 2017a:16–17). Many inhibiting and promoting factors have been proposed, including several discussed above in this chapter, but none is an exceptionless regularity, except perhaps the immunity of unambiguously mimetic elements (see §§7.5.1–3). It seems, however, that Lyman never seriously entertained the possibility that there might not be an overarching explanation that would account for the presence or absence of *rendaku* in all cases, despite the fact that the examples he himself cited show that the regularities he discussed were all just tendencies of varying strengths.

One insurmountable problem for a deterministic account of *rendaku* is that many individual vocabulary items vary between a pronunciation with *rendaku* and a pronunciation without (Vance 2015a:433–434; Vance, Kaneko and Watanabe 2017a:16). An example is /*kara+seki*/~/*kara+zeki*/ 空咳 ‘dry cough’ (cf. /*kara*/ ‘emptiness’, /*seki*/ ‘cough’), for which *NHK* and *Kōjien* give both pronunciations. It is possible in cases like this that a single individual could sometimes use one form and sometimes use the other, but, more typically, a Tōkyō speaker

will use one form and regard the alternative form as mistaken or dialectal, only rarely conceding that the alternative form is acceptable.¹⁶⁵ Linguists, too, tend to underestimate the degree of variability, but Shioda (1999, 2001, 2011a, 2011b) has published some illuminating survey data.¹⁶⁶

Leaving aside the variability of many individual lexical items, rendaku exhibits two basic types of irregularity. First, as already noted several times in this chapter, certain E2s are idiosyncratically immune to rendaku, that is, they never show rendaku, even when no inhibiting factor is involved (see §7.2.3 and §7.5.2, especially Table 7.39). Second, many other E2s behave inconsistently; they sometimes show rendaku but sometimes do not, even when no inhibiting factor is involved. The examples below in Table 7.44 are all compounds ending in a monomorphemic native E2 that behaves inconsistently. None of these compounds involves any factor that is known or suspected to inhibit rendaku.

Table 7.44: Native Noun Morphemes that Behave Inconsistently as E2s.

/ki/ 木 'wood'
/cumi+ki/ 積み木 '(toy) wooden blocks' (cf. /cum-u/ 'to stack')
/yose+gi/ 寄せ木 'wooden mosaic' (cf. /yose-ru/ 'to bring together')
/šima/ 島 'island'
/uki+šima/ 浮き島 'floating island' (cf. /uk-u/ 'to float')
/hanare+jima/ 離れ島 'solitary island' (cf. /hanare-ru/ 'to become separated')
/te/ 手 'hand'
/hidari+te/ 左手 'left hand' (cf. /hidari/ 'left')
/uširo+de/ 後ろ手 'hands behind one's back' (cf. /uširo/ 'rear')
/hi/ 日 'sun'
/yuH+hi/ 夕日 'evening sun' (cf. /yuH/ 'evening')
/niši+bi/ 西日 'westerling sun' (cf. /niši/ 'west')

Inconsistent E2s vary widely with respect to rendaku rate, that is, the proportion of existing words containing a particular E2 that have rendaku. Some elements have a very high rendaku rate, some have a very low rendaku rate, and many are intermediate (Rosen 2001:35; Irwin 2009, 2014, 2016:101–105). For example, /fune/~bune/ 船/舟 'ship, boat' almost always appears with rendaku as an E2, but a few examples like /hiki+fune/ 引き船 'tugboat' (cf. /hik-u/ 'to pull') deviate from the norm (Vance 2015b:208–209). In contrast, /cuči/~zuči/ 土 'soil' only rarely shows rendaku. In fact, there are no common words that contain the voiced allomorph /zuči/, and it is tempting to classify this morpheme as immune to rendaku.¹⁶⁷ But there is a famous kind of ceramics from the town of Imari in Saga Prefecture, and some present-day Tōkyō speakers know the word /imari+zuči/ 伊万里土 'clay used to make Imari ceramics'.¹⁶⁸

Also, the two kanji used to write the historically important place name /azuči/ 安土 ‘Azuchi’ invite literate speakers to analyze it as containing the voiced allomorph of this morpheme meaning ‘soil’. The morpheme /ki/~gi/ 木 ‘tree; wood’ has an intermediate rendaku rate. Among common words with this E2, the balance between those that show rendaku and those that do not is close to half and half (Vance 2015b:209–210).

Some elements show rendaku so consistently as E2s that it is appropriate to put them at the other end of the spectrum from rendaku-immune elements (Irwin 2016:104–105). One native element in this consistent rendaku category is /hako~/bako/ 箱 ‘box’. In the reverse-lookup counterpart of *Daijirin* (Sanseidō Henshū-jo 1997), there are 116 entries (i.e., *Daijirin* headwords) ending with this morpheme represented by the kanji (箱), and 109 of these have /bako/. Of the seven that have /hako/, six are phrasal, all containing a noun followed by genitive /no/ followed by /hako/ (e.g., /paNdora no hako/ パンドラの箱 ‘Pandora’s Box’), and the other is /hito+hako/ 一箱 ‘one box’, a number with /hako/ as the counter. The native Japanese numeral element /hito/ ‘one’ inhibits rendaku in a following counter (Nakagawa 1966:314; Irwin 2012:31–32).¹⁶⁹ The phrases are obviously beside the point here, and we can attribute the absence of rendaku in /hito+hako/ to a factor that overrides the normal behavior of this morpheme meaning ‘box’, just as the preference for rendaku in reduplication overrides the normal immunity of /saki/ ‘tip; future; destination’ in /saki+zaki/ 先々 ‘future; destinations’ (see §7.5.2). In short, /hako~/bako/ is as consistent as it possibly can be. The only way a morpheme could be more consistent would be if it just happened not to occur in any word that involves an overriding factor, that is, as a counter following /hito/ ‘one’, as the second element in a coordinate compound (§7.6), etc.

More than 50 years ago, McCawley (1968:87) wrote, “I am unable to state the environment in which the ‘voicing rule’ applies. The relevant data are completely bewildering.” This honest admission is laudable, although it implies that there actually is a “rule” waiting to be discovered. In my view, it would be hard to improve on what Okumura (1955) wrote even earlier: “It is extremely difficult to say under what circumstances rendaku occurs in Japanese, although there are discernible tendencies.”¹⁷⁰ As we saw in §1.2, if the standard account of the historical origin of rendaku is essentially correct, it is not at all surprising the the alternations were highly irregular in their early stages. The subsequent centuries have seen some shifts in the many “discernible tendencies” that I have tried to document in this chapter, but speakers seem to have settled for a miscellaneous collection of interacting semi-regularities, some of which only apply very narrowly or vary from person to person.

7.7.2 Lyman on Variability

Lyman apparently was not prepared to accept the idea that a word could show variability with respect to rendaku, and what he said seems to mean that if two forms exist and differ only in the presence versus absence of rendaku, there must be a semantic distinction: “In some cases . . . both forms may be allowable, according to difference of meaning or derivation” (Lyman 1894:161). Nonetheless, the four examples that Lyman listed with both forms in his rendaku article seem to be just alternative pronunciations of single lexical items (Vance 2007a:156). Table 7.45 shows these four examples, all of which appear in his sub-section 4(e) (Lyman 1894:170).

Table 7.45: Words Listed by Lyman with Variation.

/ko+saka/~ko+zaka/ 小坂	cf. /ko/ ‘small’, /saka/ ‘hill’
/ari+take/~ari+dake/ 有丈	cf. /ar-u/ ‘to exist’, /take/ ‘extent’
/hacu+take/~hacu+dake/ 初茸	cf. /hacu/ ‘first’, /take/ ‘mushroom’
/macu+take/~macu+dake/ 松茸	cf. /macu/ ‘pine’, /take/ ‘mushroom’

None of the first three editions of Hepburn’s dictionary lists either /ko+saka/ or /ko+zaka/, so it is hard to know what Lyman (1894:170) had in mind when he put “ko- (and kozaka)” on his list. As noted in the Appendix in the comments on this example, *NKD* lists /ko+saka/ as a surname only but /ko+zaka/ as either a surname or a common noun meaning ‘small hill’. The common noun seems to be obsolete, since it does not appear as a headword even in a comprehensive Japanese-English dictionary (Watanabe et al. 2003), so it may be that Lyman was citing the surname(s).

H2 (Lyman’s primary source of examples) lists both forms of the second item in Table 7.45 as headwords, with the definition (‘all there is’) under the form with rendaku.¹⁷¹ As mentioned in the comment on this example in the Appendix, the ordinary modern Tōkyō form is /ari+Q+take/, with an “emphatic” moraic obstruent between the two elements. This kind of moraic obstruent insertion complicates the variability situation by providing a third possibility in addition to the simple presence versus absence of rendaku. In some cases, the form with the moraic obstruent is the only option, as in /sue+Q+ko/ 末っ子 ‘youngest child’ (cf. /sue/ ‘end’, /ko/ ‘child’), but when at least one of the other two forms is available, the form with the moraic obstruent tends to have a more colloquial flavor (Vance 1987:148). A typical example is /yoko+Q+cura/ 横っ面 ‘side of the face’ versus /yoko+cura/ and /yoko+zura/ (cf. /yoko/ ‘side’, /cura/ ‘face’).¹⁷² When the voiceless obstruent susceptible to alternation is /f/ or /h/,

moraic obstruent insertion results in /Qp/, as in /de+Q+pa/ 出っ歯 ‘buck teeth’ (cf. /de-ru/ ‘protrude’, /ha/ ‘tooth’), which has largely ousted its competitor /de+ba/.¹⁷³

The last two compounds in Table 7.45 are names of mushrooms and end with a morpheme meaning ‘mushroom’. For the first of these two names (which denotes the species *Lactarius lividatus*), Lyman’s primary source (H2) lists both /hacu+take/ and /hacu+dake/ as separate headwords, and *NKD* gives both /hacu+dake/ and /haQ+take/ (with a contracted form of /hacu/) as alternative pronunciations under the headword /hacu+take/. For the second name (which denotes the species *Tricholoma matsutake*), only /macu+take/ appears in H2, but *NKD* gives /macu+dake/ as an alternative pronunciation under the headword /macu+take/.¹⁷⁴

Although Lyman acknowledged variability only in the four examples listed above in Table 7.45, more than 80 of the other examples that he listed in his 1894 article are attested both with and without rendaku. The phrase “alternative pronunciation” appears in the comments on these items in the Appendix. In some of these cases, it is clear from the dictionaries available to a present-day researcher that the form Lyman cited had ousted an earlier competitor by the late 19th century. But in many other cases, the form Lyman cited and the alternative were almost certainly still in competition at that time. To give just one example, Lyman (1894:169), following H2, listed /yuH+kata/ 夕方 ‘evening’ without rendaku (cf. /yuH/ ‘evening’, /kata/ ‘direction, side’), but dictionaries of the modern language, including *NHK*, *Meikai*, and Watanabe et al. (2003), list only /yuH+gata/, with rendaku, as a headword and do not mention an alternative pronunciation without rendaku. *NKD* lists only /yuH+gata/ as a headword, but the entry mentions /yuH+kata/ as an alternative pronunciation. *Kōjien* also lists only /yuH+gata/ as a headword, but the entry notes that the form without rendaku appears in the Japanese-Portuguese dictionary of 1603–04 (Doi et al. 1980). Yamada (1893), in his dictionary of late-19th-century Tokyo Japanese, lists only the form with rendaku, suggesting that /yuH+gata/ was already well entrenched. There is little doubt that both /yuH+kata/ and /yuH+gata/ were possible when Hepburn and Lyman were writing, and it seems very likely that /yuH+gata/ was gaining ground. What examples like this show is that, like many modern lexicographers and linguists (see §7.7.1), Lyman seriously underestimated the possibility of an individual lexical item showing variability with respect to the presence or absence of rendaku.

7.8 Rendaku and Semantics

7.8.1 Semantic Bifurcation

Occasionally, the presence or absence of rendaku corresponds to a difference in meaning, as in /oH+de/ 大手 'entire arm' versus /oH+te/ 大手 'major company', both of which have bound /oH/ 'big' as E1 and /te/~de/ 'hand; arm' as E2. In this case, the two words also differ in accent (/oH+de/ 大手 versus /o⁺H+te/), at least for most speakers.¹⁷⁵ Despite the potential for distinguishing different lexemes containing the same morphological elements, however, pairs of this kind are very rare.¹⁷⁶ Some younger speakers report that they use /oku+fuka-i/ 奥深い (cf. /oku/ 'interior', /fuka-i/ 'deep') in the literal meaning 'deep, deeply recessed' and /oku+buka-i/ 奥深い in the figurative meaning 'profound, esoteric'. Many native speakers do not have this intuition, and dictionary entries do not reflect it, but such a semantic distinction is a perfectly natural development. We can understand it as a manifestation of the one-form-one-meaning principle (Matthews 1997:255), that is, the universal aversion to homophony (one form with multiple meanings) and to homosemy (alternative forms with the same meaning). A normal reaction to variability in form is semantic bifurcation (mentioned in §4.4), that is, ascribing a semantic distinction, however slight, to the different forms.¹⁷⁷ This underlying preference for a one-to-one correspondence between forms and meanings influences all speakers, including linguists and lexicographers, and one result is that dictionary definitions are not always reliable.

An example involving the E2 /kuči~/guči/ 口 'mouth' provides an instructive illustration of semantic bifurcation at work in lexicography. Many dictionaries list /nomi+kuči/ 飲み口 and /nomi+guči/ 呑み口 as separate headwords and define them differently, although not all these dictionaries maintain the orthographic distinction, since 呑 is not on the official list of *jōyō-kanji* 常用漢字 'general-use kanji' (Bunka-chō 2011). E1 is based on the verb /nom-u/ 'to drink; to swallow', and many well-educated speakers know that there is a tendency to use 飲 for the meaning 'to drink' and 呑 for the meaning 'to swallow'. A popular medium-size Japanese-English dictionary (Kondō and Takano 1986) is a good place to look first, because it is unlikely to include obscure or obsolete definitions. It gives two definitions for /nomi+kuči/ and one for /nomi+guči/, both written 飲み口. The first definition for /nomi+kuči/ is 'taste (of a drink)', and the second is 'lip of a cup'. The sole definition for /nomi+guči/ is 'spigot, tap'.¹⁷⁸

The definitions in other dictionaries vary widely, and this inconsistency suggests that there is variation in actual usage. *Kōjien* lists /nomi+kuči/, written

〈飲口〉), and /nomi+guči/, written 〈呑口〉), and gives four definitions for the former and one for the latter, with no overlap. The four for /nomi+kuči/ include both the definitions in Kondō and Takano (1986), and the one for /nomi+guči/ matches the one in Kondō and Takano. *Daijirin* lists only /nomi+kuči/, written variously, as a headword and gives all five of the definitions in *Kōjien*, but the entry also gives /nomi+guči/ as an alternative pronunciation without suggesting that the pronunciation with rendaku is preferred for any of these senses. *Meikai* has separate entries, with accent marked: /nomi⁺+kuči/, written 〈飲み口〉), and /nomi⁺+guči/, written 〈呑み口〉). The *Meikai* examples for /nomi⁺+kuči/ imply the same meanings as two of the *Kōjien* definitions for this headword, and the *Meikai* example for /nomi⁺+guči/ implies the same meaning as the *Kōjien* definition for this headword. *NHK* lists only /nomi⁺+kuči/, written 〈飲み口〉), and provides no definitions or examples. When I asked a small group of native-speaking linguists (not all Tōkyō natives) about these dictionary entries, it quickly became clear that the treatment in *Daijirin* (i.e., either pronunciation is possible for any of the meanings) is the most realistic. Most linguists, of course, are comfortable with the idea of variation, but it is not surprising that lexicographers manage to convince themselves that the situation is more orderly than it actually is. The lesson for rendaku researchers is clear: dictionary-entry semantic distinctions between forms with and without rendaku have to be treated very skeptically.

The alternative to semantic bifurcation for enforcing the one-form-one-meaning principle and eliminating variability is for one phonemic form to drive out its competitor(s). As noted above in §7.4.2, in the case of the V+V=V compound /ki+kae-ru/~ /ki+gae-ru/ 着替える ‘to change clothes’, the form with rendaku seems to have arisen in the 20th century and taken only a few decades to supplant the form without rendaku almost completely.¹⁷⁹ In the case of /mizu+tori/~ /mizu+dori/ 水鳥 ‘aquatic bird’ (cf. /mizu/ ‘water’, /tori/ ‘bird’), the change has been more gradual. *NKD* and *Kōjien* do not even mention the form with rendaku as an alternative pronunciation, but /mizu+dori/ is the only form listed in H1, H2, and H3. This discrepancy suggests prescriptive pressure in favor of /mizu+tori/ but more than a century and a half of competition from /mizu+dori/.¹⁸⁰ A questionnaire survey carried out in the early 1980s (Shioda 2001:102) clearly documents a shift in progress, with the rendaku form gaining ground. The great majority of Tōkyō speakers today use /mizu+dori/, and many are surprised to hear that any native speaker would accept /mizu+tori/.

Although the history of some lexical items does seem to show the one-form-one-meaning principle at work, neither remedy for variability (semantic bifurcation or driving out alternative forms) seems to be a very powerful force overall. It

is much easier to find examples of persistent variability, at least at the interpersonal level (see §7.7).

7.8.2 Structural Differences

The semantic distinctions, real or imagined, in the pairs considered above in §7.8.1 are quite different from what we encountered in connection with the Right-Branch Condition in §7.2.3. Leaving aside the doubts about whether native speakers of Japanese actually internalize this constraint, it provides a principle to account for a meaning difference that might be signaled by the presence versus absence of rendaku. Repeating the examples from Figure 7.3 in §7.2.3, the right-branch condition attributes the presence of rendaku in $\{\{/nuri+baši/\}+/ire/\}$ 塗り箸入れ ‘container for lacquered chopsticks’ (cf. $/haši/$ ‘chopsticks’) to the fact that the potential rendaku site is on a right branch, and it attributes the absence of rendaku in $\{/nuri/+{/haši+ire/}\}$ 塗り箸入れ ‘lacquered container for chopsticks’ to the fact that the potential rendaku site is on a left branch.

The resistance of coordinate compounds to rendaku (see §7.6) provides another principle for semantic distinctions corresponding to the presence versus absence of rendaku. The number of relevant examples is small, but one pair that linguists often cite is coordinate $/yama^+kawa/$ 山川 ‘mountains and rivers’ and non-coordinate (unaccented) $/yama+gawa/$ 山川 ‘mountain river’.¹⁸¹ Neither word is common enough to be listed in smaller dictionaries, but the fact that the form with rendaku ($/yama+gawa/$) does not have the coordinate meaning follows from a general pattern.¹⁸²

In contrast, the difference in meaning between $/oH+de/$ 大手 ‘entire arm’ and $/o^+H+te/$ 大手 ‘major company’ (see §7.8.1 above) does not follow from any general pattern. All we see here is the kind of semantic unpredictability that is characteristic of derivation and compounding. While $/oH+de/$ is semantically more transparent than $/o^+H+te/$, if it were not for the difference in pronunciation, a lexicographer might be tempted to treat both meanings as belonging to a single polysemous lexical item.¹⁸³ Compare English *fireman*, which can denote either a man who puts out fires or a man who stokes fires. Dictionaries typically list both meanings under the same headword, but it seems more reasonable to suppose that there are two different compounds consisting of *fire* and *man*, presumably coined at different times in different places. The pronunciation difference between $/oH+de/$ and $/o^+H+te/$ forces us to say that we have two separate lexical items, but there is no principle behind the fact that one shows rendaku and the other does not. The meanings ‘entire arm’ and ‘major company’

could just as well be reversed, and this indeterminacy is symptomatic of how inconsistent rendaku is overall.

7.8.3 Second-Element Polysemy

As noted above in §7.5.2, we often see markedly different rendaku behavior for different senses of a polysemous morpheme (Vance 2015a:433; Irwin 2016: 104–105). To illustrate with just one such morpheme, /kuči~/~guči/ 口 (literally ‘mouth’) has a wide range of figurative meanings, and as the final element in a compound, the overall proportion of /guči/ to /kuči/ among frequently used words is roughly 2:1.¹⁸⁴ In the meaning ‘doorway, gateway’, it consistently shows rendaku, as in /ura+guči/ 裏口 ‘back door’ (cf. /ura/ ‘back’) and /hi.ŷoH+guči/ 非常口 ‘emergency exit’ (cf. /hi.ŷoH/ ‘emergency’).¹⁸⁵ On the other hand, in the meaning ‘flavor’, it consistently resists rendaku, as in /ato+kuči/ 後口 ‘aftertaste’ (cf. /ato/ ‘after’) and /ama+kuči/ 甘口 ‘sweet taste’ (cf. /ama-i/ ‘sweet’). The existing vocabulary is full of narrowly circumscribed regularities of this kind, and it seems very likely that ordinary speakers are sensitive to them, although probably not to the same degree as linguists. When it comes to other senses of /kuči~/~guči/, we see less consistent behavior, although in most cases compounds with /guči/ are a clear majority. For example, for the literal sense ‘mouth’, /gama+guči/ 蝦蟇口 ‘coin purse’ (literally ‘toad mouth’), with rendaku, is typical, but we also find /mi+cu+kuči/ 三つ口 ‘harelip’ (literally ‘three mouths’). For the sense ‘speech, words’, there are examples like /cuge+guči/ 告げ口 ‘tattling’ (cf. /cuge-ru/ ‘to tell’) but also examples like /karu+kuči/ 軽口 ‘jesting’ (cf. /karu-i/ ‘light’), and we see variability in /waru+kuči~/~waru+guči/ 悪口 ‘bad mouthing’. The picture is complicated by the fact that it is often hard to decide exactly which figurative meaning is involved, in part because (not surprisingly) the distinctions between different senses are not always clear-cut.

7.8.4 Lyman on Semantic Distinctions

Immediately following his last set of examples (see §5.2), Lyman (1894:171–172) proposed the sweeping semantic generalization quoted below.¹⁸⁶

If the complete lists of compounds with the *nigori* and without be carefully examined, it is found that: When the first part indicates the origin, source, cause or the like, possession or ownership, superiority, prevalence, pervasion, inclusion (either physical or ideal or a classifying feature) of the second part, in short domination over it as a subordinate

thing, there is no *nigori* of composition. These are the very qualities possessed in English by a substantive following the word *of*, as compared with the one that precedes.

But when those qualities are rather possessed by the following part of the compound, of which the first part indicates a subordinate or a more or less imperfectly, partially, superficially, temporarily, occasionally applying characteristic or feature, there is *nigori*. When, for example, the *nigori* compound has an adjective ending, the first part shows in what respect the quality is meant; and when both parts are verbal forms, the first likewise shows with reference to what the action of the second takes place, instead of there being something else to which both actions concomitantly refer.

This account is far too vague to have much predictive power (Vance 2007a: 168–169). In any case, even if we interpret it charitably as applying only when no known inhibiting factor is relevant, as it would in many of the 501 examples without *rendaku* on Lyman's list 4(e), there is no way to reconcile it with the facts.¹⁸⁷ To give just one pair of problematic examples, if Lyman were correct, we would have to believe that the semantic relationship between the two elements in /iri+kuči/ 入口 'entrance' is different from the relationship between the two elements in /hairi+guči/ 入り口 'entrance'. H2 lists only the former as a headword, but the entry gives the latter as a synonym. (In present-day Tōkyō, /iri+guči/ has largely replaced /iri+kuči/.)¹⁸⁸ Lyman did not cite /hairi+guči/ as an example, of course, since his list 4(e) only contains examples that lack *rendaku*. The E2 in the two compounds is /kuči~/guči/ '(literally) mouth' (see §7.8.3), and the first elements are both deverbal. In the case of /iri+kuči/, the related verb /ir-u/ 'to enter' is obsolete as an independent word, although it still occurs as an element in many compounds. As for /hairi+guči/, the related verb is /hair-u/ 'to enter', which has replaced /ir-u/ as the independent word with this meaning.¹⁸⁹ Needless to say, no reasonable semantic analysis would put /iri+kuči/ and /hairi+guči/ in opposing categories.

Lyman's semantic account could be construed as applying to N+V=N compounds. As we saw in §7.4.5, nonDO+V=N compounds strongly favor *rendaku*, whereas DO+V=N compounds do not. Using examples from Table 7.31 to illustrate, 'attaching of flavor' is a possible translation of the DO+V=N compound /aġi+cuke/ 味付け 'flavoring' (cf. /aġi/ 'flavor', /cuke-ru/ 'to attach'). In contrast, 'attaching of nails' is clearly wrong for the nonDO+V=N compound /kugi+zuke/ 釘付け 'attaching with nails' (cf. /kugi/ 'nail').¹⁹⁰ The problem, of course, is that many DO+V=N compounds have *rendaku* (see Table 7.32 in §7.4.5) and a few nonDO+V=N compounds lack *rendaku*. Research by Yamaguchi (2011) shows that the difference between the *rendaku* rates in DO+V=N compounds and nonDO+V=N compounds is statistically significant in the existing vocabulary, but such statistical tendencies cannot be reconciled with Lyman's deterministic characterization of *rendaku*.

For linguists today, rendaku is in most respects a typical morphophonemic phenomenon, displaying considerable irregularity and variability. The tendencies that Lyman noticed and documented so meticulously are entirely compatible with this modern understanding. It appears, however, that Lyman himself felt compelled to espouse a deterministic view that his own examples simply do not support.

7.9 Concluding Summary

This chapter critically evaluates the claims that Lyman made in his 1894 article on rendaku, and in the process also raises several related issues that have attracted the attention of researchers over the last 70 years. Although the discussion is wide-ranging, it is not an all-inclusive review of rendaku research, since Lyman had nothing to say that is even tangentially relevant to many of the topics that modern researchers have investigated.

§7.2 reviews Lyman's most influential proposal, namely, what has come to be called Lyman's Law. Many phonologists today interpret Lyman's Law as a manifestation of the Obligatory Contour Principle (§7.2.1). I do not argue for or against this interpretation, and I encourage interested readers to consult the cited references. The orthodox version of Lyman's Law has long been that a medial voiced obstruent in an E2 prevents rendaku, but Lyman's own version was conspicuously different in that his list of inhibitor consonants included /p/ (§7.2.1). There was, however, no real evidence in the late-19th-century vocabulary for including /p/, and it appears that Lyman was led astray by traditional Japanese terminology, which invites the inference that /p/ is quasi-voiced.

As explained in §1.3, the Old Japanese counterpart of Lyman's Law seems to have been a ban on prenasalized voiced obstruents in adjacent syllables. In contrast, the modern Tōkyō version of the constraint disregards E1 entirely and does not require an inhibitor voiced obstruent in E2 to be in the syllable immediately following the potential rendaku site (§7.2.2).

A separate constraint, known as the Right-Branch Condition (§7.2.3), has been proposed to account for the putatively predictable absence of rendaku in some compounds with more than two elements. In a three-element compound containing the elements A, B, and C, the Right-Branch Condition predicts that rendaku is possible in B if the constituent structure is {{AB}C} but not if it is {A{BC}}. Since Lyman's Law and the Right-Branch Condition make different predictions if BC in {A{BC}} does not contain a medial voiced obstruent, it seemed advisable to discuss the two constraints together above, although Lyman's 1894 article does not foreshadow anything like the Right-Branch Condition. One suggestion in the

literature attributes the Right-Branch Condition to a broad cross-linguistic generalization that phonological markers of unification such as rendaku are blocked in right-branching structures (Kubozono 2005:11–15). Despite the powerful appeal of this generalization, rendaku does not really seem to conform to it. There are many *prima facie* counterexamples to the Right-Branch Condition in the existing vocabulary, and experiments have failed to corroborate its psychological reality.

Only a very few existing compounds violate Lyman's Law (§7.2.4), and experimental results leave little doubt that it is an active factor for modern native speakers. It is important to note, however, that most experimental participants are surprisingly tolerant of violations. To cite just one typical study, Kawahara and Sano (2014) asked participants to choose between rendaku and no rendaku in compounds consisting of /nise/ 偽 'fake' as E1 and a made-up element with three short syllables as E2. There were several types of made-up elements, but the comparison of interest here is between E2s like /kidake/, with a voiced obstruent in the second syllable, and E2s like /kimane/, with no voiced obstruent. Although the rendaku in /nise+gidake/ violates Lyman's Law, 39% of the responses for the test items in this category had rendaku (/nise+gidake/ rather than /nise+kidake/, etc.). In contrast, rendaku in /nise+gimane/ does not violate Lyman's Law, and 58% of the responses for the test items in this category had rendaku (/nise+gimane/ rather than /nise+kimane/, etc.). Since the difference between 39% and 58% was statistically significant, these results can be construed as corroborating the psychological reality of Lyman's Law, but 39% is hardly negligible.

§7.3 reviews Lyman's claims about Sino-Japanese elements. Phonologists today typically divide the modern Tōkyō Japanese vocabulary into four strata (native, Sino-Japanese, recently borrowed foreign, and mimetic), but it was only the distinction between native and Sino-Japanese that attracted Lyman's attention. Many Sino-Japanese binoms (although only a small minority) occur with rendaku as E2s (§7.3.2), as in /wata+ga·ši/ 'cotton candy' 綿菓子 (cf. /ka·ši/ 'sweets'). On the other hand, what looks like rendaku in the second morph of a binom is so-called new voicing (§7.3.3), as in /reN·ga/ 連歌 'linked verse', with /ga/ rather than /ka/ for the morph meaning 'poem' (cf. /ka·jiN/ 歌人 'poet'). Lyman treated examples like the /g/ in /reN·ga/ as instances of rendaku (§7.3.4), but this categorization is dubious at best. The effort to decide what counts as rendaku in Sino-Japanese vocabulary items leads to larger questions about morphological analysis that remain unresolved. The diachronic source of most cases of new voicing was postnasal voicing (PNV) in Early Middle Japanese (§7.3.5). Although some phonologists see PNV as synchronically active in modern Tōkyō Japanese, I argue against this idea.

§7.4 treats compounds containing verb and adjective elements. Verbs and adjectives are the two main classes of inflected words in Japanese, but the patterns in the existing vocabulary show that, with respect to *rendaku*, such elements cannot be lumped together into a single “inflectable” category. In compounds containing two verb roots, *rendaku* is favored in V+V=N compounds like /uri+dome/ 売り止め ‘suspension of sales’ (cf. /ur-u/ ‘to sell’, /tome-ru/ ‘to stop’) and disfavored in V+V=V compounds like /uri+cuke-ru/ 売り付ける ‘to pressure into buying’ (cf. /cuke-ru/ ‘to attach’), although there are many exceptions to both tendencies (§7.4.2). On the other hand, in two-element compounds with at least one adjectival element, *rendaku* is favored, regardless of whether the compound as a whole is an adjective, a verb, or a noun (§7.4.3).

N+V=N compounds (§7.4.5) have attracted more attention than any other group of compounds containing verb or adjective elements because of the impression that the semantic/syntactic relationship between E1 and E2 influences the likelihood of *rendaku*. For example, in /uo+curi/ 魚釣り ‘catching fish’, E1 (/uo/ ‘fish’) is the direct object of E2 (cf. the verb /cur-u/ ‘to catch’) in that the meaning of the compound corresponds to the phrase /uo o cur-u/ ‘catch fish’, with the accusative particle /o/ marking /uo/. In contrast, the meaning of /oki+zuri/ 沖釣り ‘offshore fishing’ corresponds to the phrase /oki de cur-u/ ‘catch offshore’, with the locative particle /de/ marking /oki/ ‘open sea’. The earliest proposal was that a direct-object relationship inhibited *rendaku* in such compounds, whereas a “modifier” relationship (i.e., locative, instrumental, etc.) promoted *rendaku*. More recent research has proposed that the relevant distinction is between what are often called **arguments** and **adjuncts**. An argument noun phrase fills a syntactic role that the relevant verb requires, whereas an adjunct noun phrase fills an optional (i.e., structurally dispensable) syntactic role. Although a direct object may be elided (depending on the language and the context), a transitive verb like /cur-u/ ‘to catch’ is said to require a direct object syntactically, which means that /uo/ ‘fish’ is an argument in /uo o cur-u/ ‘catch fish’. This same verb does not syntactically require a locative phrase, which means that /oki/ ‘open sea’ is an adjunct in /oki de cur-u/ ‘catch offshore’.

The experiments and vocabulary surveys reviewed briefly in §7.4.5 compare N+V=N compounds with adjunct E1s only to those with direct-object E1s. The results are all consistent with the claim that *rendaku* is more likely when E1 is an adjunct than when it is a direct object, but there are many examples like /niku+zuke/ 肉付け ‘fleshing out’, which has *rendaku* even though E1 is a direct object (cf. /niku o cuke-ru/ ‘attach flesh’). Only very recently has there been any comparably thorough work on other types of arguments. In a study of dictionary headwords, Fukasawa (2020) includes subject E1s (e.g. /ame+furi/ 雨降り ‘rainfall’; cf. /ame ga fur-u/ ‘rain falls’) and some locative

E1s (e.g., /kabe+kake/ 壁掛け ‘wall hanging’; cf. /kabe ni kake-ru/ ‘hang on a wall’) as arguments. The results show that the rendaku rate in N+V=N compounds with argument E1s is significantly lower than in those with adjunct E1s, but the rates for subject E1s (69%) and locative argument E1s (72%) are significantly higher than for direct object E1s (50%). A subsequent experimental study by the same author (Fukasawa 2021) shows that this difference between arguments and adjuncts also emerges when speakers are asked to choose rendaku or no rendaku in novel compounds, either with existing E2s or with made-up E2s. Since the differences between argument E1s and adjunct E1s involve high rates of rendaku versus even higher rates, it is not obvious how we should interpret or model the inhibiting effect of argument status.

Compound verbs consisting of a lone Sino-Japanese morpheme followed by /su-ru/~ /zu-ru/ ‘to do’ (§7.4.6) are of interest to historical linguists because they show clear vestiges of postnasal voicing (§7.3.5), most obviously in the high rendaku rate when E1 ends in the moraic nasal /N/, as in /meN+zu-ru/ 免ずる ‘to exempt’ (cf. bound /meN/ ‘exemption’). Lyman did not make a clear case for the connection between E1-final /N/ and rendaku in such compounds, apparently because the second edition of Hepburn’s dictionary treated examples without rendaku (e.g., /tai+su-ru/ 対する ‘to oppose’) as phrases rather than as compounds. As a result, Lyman’s dictionary search did not yield two contrasting sets of examples. Compounds that combine a Sino-Japanese binom with this same E2 never have rendaku (e.g., /kei-saN+su-ru/ 計算する ‘to calculate’), and I argue in §7.4.7 that the absence of rendaku in such combinations is predictable from the dephrasal accent that they carry (§7.4.7). This suggestion raises the larger question of whether compound accent (as opposed to dephrasal accent) is a necessary (but not sufficient) condition for rendaku. If so, the intuitive feeling that rendaku marks tight cohesion between the elements of a complex word is correct, but only because compound accent marks tight cohesion. The logic is that rendaku is possible only when there is compound accent, and since compound accent implies tight cohesion, so does rendaku. On the other hand, the absence of rendaku in an E2 beginning with a voiceless obstruent implies nothing, since many complex words with compound accent do not have rendaku.

§7.5 examines reduplicated words and shows that mimetic elements consistently resist rendaku (§7.5.1), whereas non-mimetic native elements strongly favor it (§7.5.2). It appears that some reduplicated words with a non-mimetic native base lack rendaku because they have quasi-mimetic meanings (§7.5.3). The lack of rendaku in mimetic E2s, reduplicated or not, is perhaps the only unequivocal generalization we can make about rendaku, although the boundary between the mimetic and non-mimetic sectors of the Japanese vocabulary is

not absolutely clear-cut. There are quite a few Sino-Japanese binoms consisting of a reduplicated morpheme, and only a small minority of these binoms have new voicing (§7.5.4). If cases of new voicing in Sino-Japanese binoms are not considered instances of *rendaku* (as suggested in §7.3.3), then binoms consisting of a reduplicated morpheme are beside the point here.

§7.6 considers the absence of *rendaku* in coordinate compounds. There are some exceptions, but most coordinate compounds with native elements do not have *rendaku* (§7.6.1). A few of those that do have *rendaku* can be categorized as appositional, but the number of relevant examples is so small that it is not clear whether the distinction between coordinate and appositional compounds is really pertinent. Perhaps the most interesting exceptions are those that occur not as words on their own but only as components of longer words. New voicing appears to be relatively common in Sino-Japanese binoms in which the two elements are semantically coordinate (§7.6.2). As with the rarity of new voicing in binoms consisting of a reduplicated element (§7.5.4), this disparity between Sino-Japanese binoms and compounds consisting of native elements is beside the point here if new voicing in Sino-Japanese binoms and *rendaku* are considered separate phenomena (as suggested in §7.3.3).

§7.7 returns to the main theme of this book: the pervasive and persistent irregularity of *rendaku*. Readers may be weary of my incessant harping on this point, but it bears repeating because, as Kawahara (2016:33) notes, some accounts in the literature can easily be misinterpreted to mean that *rendaku* always applies to a *rendaku*-eligible E2 unless Lyman's Law would be violated. We saw in §1.4 that the irregularity we find in Old Japanese follows naturally from the historical origin scenario outlined in §1.2. Despite the many changes that have occurred in the subsequent twelve centuries, fundamental irregularity remains firmly entrenched.

One kind of irregularity that is particularly relevant in connection with Lyman's 1894 article is the variability that many individual vocabulary items show between a form with *rendaku* and a form without (§7.7.1). Lyman clearly did not realize how widespread this kind of variability is (§7.7.2), as shown by more than a few of the comments on his examples in the Appendix. Given that many words have gained or lost *rendaku* over time (§1.2, §7.2.4, §7.4.2), it follows that there must be transition periods with an older form and a newer form in competition. Any vocabulary survey based on a single dictionary will inevitably undercount this kind of variability, since lexicographers generally prefer to recognize only one of the two alternatives for a variable item. Some instances of variability will elude even a thorough, multi-dictionary search. To give just one example, the compound /uči+doi/ 内樋 'internal gutter' is quite obscure, although the E2 /toi/ 'gutter, rain trough' as an independent word is listed even

in small dictionaries. The compound does appear as a headword in *NKD*, *Kōjien*, and *Daijirin*, and all three of these large, panchronic dictionaries give /uči+doi/, with rendaku, as the only possible pronunciation. Nonetheless, in a television commercial for a company that installs gutters, which I saw several times in 2020, the narrator repeatedly says /uči+toi/, without rendaku. We can speculate that the choice of the non-rendaku form in this advertisement was motivated by a concern that listeners might find the form with rendaku difficult to understand, but the point here is that a dictionary search will miss this instance of variability and presumably many others.¹⁹¹

§7.8 assesses some suggestions about rendaku and semantics. There are very few cases involving the same E1 and E2 in which a form with rendaku and a form without coexist and consistently carry different meanings (§7.8.1). In a three-element compound A+B+C, it follows from the Right-Branch Condition (§7.3.2) that rendaku in the middle element signals the constituent structure {{AB}C} (§7.8.2), but given the dubious status of the Right-Branch Condition itself, this generalization is dubious as well. On the other hand, rendaku in a two-element compound is generally a reliable signal that the semantic relationship between E1 and E2 is not coordinate (§7.8.2). When E2 is polysemous, the likelihood of rendaku can vary dramatically depending on the sense it carries (§7.8.3). Lyman himself insisted that there was a consistent semantic distinction between rendaku-eligible compounds that had rendaku and those that did not, but his proposal is hopelessly vague and demonstrably wrong in many cases when its predictions seem clear (§7.8.4).

In conclusion, many phonological, morphological, and semantic factors have been shown to correlate, either positively or negatively, with the likelihood of rendaku, but there clearly is no generalization that predicts when rendaku occurs and when it does not. Interestingly, most naïve native speakers of Japanese and even many native-Japanese-speaking linguists have the strong intuition that rendaku actually is predictable, at least in the great majority of cases (Vance 2014a:150). There are two main aspects to this feeling of predictability. One is a very high degree of confidence about whether or not a newly coined compound should have rendaku, including the firm (but clearly mistaken) belief that other native speakers will always share the same judgment. The other aspect is the belief that there is an intuitively reasonable explanation for the presence or absence of rendaku in virtually every relevant existing compound. I have had many earnest students who were happy to offer a different (and often very inventive) ad hoc explanation for each example that does not conform to an observed trend. It is only a short step from this illusion of predictability to the (plainly erroneous) conviction that there must be some relatively straightforward rule for rendaku that linguists could discover if they would just look harder.

One way to describe rendaku in very broad terms is to say that it has a “dual nature” (Kawahara 2016:37). On the one hand, rendaku is productive in the sense that speakers often extend it not only to E2s in neologisms but even to made-up E2s in psycholinguistic experiments. On the other hand, many compounds are stored in memory, and if a lexicalized compound has a rendaku-eligible E2, the presence or absence of rendaku is part of that compound’s lexical entry. It is not impossible to model a situation like this, with many potentially interacting factors, and Zuraw (2010) has made some interesting proposals about how this might be done. Any realistic model for rendaku must, of course, incorporate stochastic components; it cannot be entirely deterministic. Furthermore, and unsurprisingly, the model for rendaku will have to differ from speaker to speaker, since we often see dramatic individual differences in experimental responses. It is just a fact of life that rendaku is messy, but as I have said many times over the years to colleagues in Japanese linguistics, if it were simple, there would be no point in studying it.

Appendix Lyman's Examples

A.1 Identifying Lyman's Examples

As noted in §5.1, Lyman drew most of the many Japanese words he cited as examples in his 1894 article from the 1872 second edition of Hepburn's Japanese-English dictionary. Since Lyman gave all his Japanese examples in romanization only and did not provide definitions for most of them, it is often hard to tell what word he was citing. In many cases, there is more than one word with the same romanization, and many of the words listed in Hepburn's dictionary are now obsolete, which means that a present-day speaker of Japanese would be unlikely to think of them as possibilities. To make matters worse, there are more than a few typographical errors in Lyman's article, which could have been introduced either by Lyman himself in the course of preparing his manuscript or by the typesetter.

In §A.2 below I have tried to identify the lexical item that Lyman's romanization presumably represents in each case. The Japanese translation of Lyman's article by Yanaike (1991:66–79) incorporates his effort to do the same thing, and his meticulous work has been very helpful. I have managed to figure out and correct most of the errors in Lyman's article, although a few uncertainties remain. Hepburn's second edition was an essential tool in this effort (see §2.4), but it is not as easy to find as the other two early editions. The 1886 third edition is the most widely available, and the 1867 first edition was reprinted by Tuttle in 1983. From here on, I will refer to the first edition as H1, the second edition as H2, and the third edition as H3. Fortunately, all three editions can be accessed via the Meiji Gakuin University library's website.¹ Hepburn was one of the founders of Meiji Gakuin, and the library provides this "digital archive" as a public service. As explained in §5.1, despite the fact that Lyman used H2 as his main source of examples, his 1894 romanization is not exactly the same as what we see in H2, and it is also a little different from what we see in H3. The most conspicuous difference from both H2 and H3 is that Lyman used double letters to represent all long vowels, as he recommended in his 1878 article (see §4.6).

When I have not been able to identify the word that Lyman intended by his romanization with any confidence, I mark the item with a bold-faced question mark (?). In some of these cases, I have not been able to document any actual word that matches what Lyman listed. In other cases, Lyman's intention is clear, but *NKD* does not list any headword with the requisite pronunciation. Lyman himself parenthesized a few items on his lists, and it is clear that this use of parentheses indicated the second occurrence of word that he had already listed earlier. I provide a brief explanation for each of these items. The are also duplications on

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Lyman's lists that he overlooked, and I mark each of these with double brackets (⌈ ⌋) and note where to find the other occurrence of the same item. I also use double brackets to mark items that are completely irrelevant where they appear but somehow escaped deletion in the proofreading process.

A.2 The Examples

All of Lyman's examples are listed below, one by one. Each item is headed by a romanization, using the modern version of the Hepburn system that I described in the Preface. As noted just above in §A.1, this romanization differs from Lyman's in some cases, and these differences are itemized in §5.1. A hyphen appears in each romanization to mark the morpheme division relevant to *rendaku*, that is, the point in the word immediately preceding the *rendaku* site (e.g., *obore-jini*; cf. modern Tōkyō /obore+ĵini/ 溺れ死に 'death by drowning') or, when a voiced obstruent does not actually appear, the potential *rendaku* site (e.g., *ame-furi*; cf. modern Tōkyō /ame+furi/ 雨降 'rainfall'). This hyphen marks what Lyman must have considered the relevant division, even when no hyphen appears in his own romanization and even when the implied morphological analysis is dubious or clearly wrong. For example, Lyman had "akarui," with no hyphen, on his list of "compounds with adjectival endings" (sub-section 4(c) below), and the word he intended must be the modern Tōkyō adjective /akaru-i/ 明るい 'bright'. Since the only obstruent in this word is /k/, it would have to be a combination of /a/ and /karu-i/ for Lyman to have seen it as relevant. This is why it is listed below as *a-karui*, despite the fact that the etymological root in /akaru-i/ is /aka/ (cf. modern Tōkyō /aka/ 赤 'red' and /akari/ 明かり 'light').² We can surmise that Lyman identified the *karui* in his *akarui* with the modern Tōkyō adjective /karu-i/ 軽い 'light (in weight), slight'. It is impossible to know for sure, however, since all we have to go on is "akarui" (Lyman 1894:168). In an example with more than two elements, an additional hyphen marks the primary morphological division if it does not coincide with the (potential) *rendaku* site, as in *mizu-kake-ron* (cf. modern Tōkyō /mizu+kake+roN/ 水掛け論 'barren controversy'). The potential *rendaku* site in this word is the first /k/, but the primary morphological division is clearly between /mizu+kake/ 'water throwing' and /roN/ 'argument'.

For each of Lyman's examples that appears in H2, I provide Hepburn's English definition. In most cases, I do not comment on the definition, even when it is obsolete or gives only a subset of the senses listed in a modern authoritative dictionary such as *Daijirin* or *Kōjien*. The H2 part-of-speech label is omitted, and the H2 romanization is provided only if it differs from the romanization I use. If Hepburn gave kanji, they are reproduced, but whenever Hepburn used a

character that was replaced by a new form (*shin-jitai* 新字体) in the post-WWII writing-system reforms, the new form appears here, as in (戦国) rather than (戰國) for /seN·goku/ ‘warring states’. Also, I follow the modern practice of using the repeat sign (々) (*dō-no-ji-ten* 同の字点) where Hepburn wrote the same kanji twice, as in (早々) rather than (早早) for /soH·soH/ ‘hastily’. When the two identical kanji are not contiguous, as in (晴れ晴れ) for /hare+bare/ ‘brightly’, I just follow H2 ((晴晴) in this case). When H2 has a kanji so obscure that it is not included in the Hiragino fonts that come with the Macintosh operating system, I give the Unicode number for that character. For example, the H2 entry for *hada-se* (corresponding to modern Tōkyō /hada+se/ 肌背 ‘bareback’) in sub-section 4(e) gives the single kanji (驢). This character (Unicode 9A4F) is listed in large kanji dictionaries (e.g., Ueda et al. 1993), but it is not included in a typical Japanese font.

I note a typical present-day way of writing a word when the H2 entry does not give any kanji or when the kanji it does give differ from what we would expect to see today. In most cases, I cite the representations in *Kōjien* and *Daijirin*. For example, the H2 entry for /me+šita/ ‘inferior’ has the kanji (卑行), so I note that the modern dictionaries give (目下). In this case, and many others, the kanji representation in the modern dictionaries is morphologically and/or etymologically more transparent than what appears in H2. The H2 entries for inflected words (verbs and adjectives) do not give *okurigana* 送り仮名 (the kana that, very roughly speaking, spell out inflectional endings). For example, the H2 entry for the verb corresponding to modern Tōkyō /ike+dor-u/ 生け捕る ‘to capture alive’ begins “IKEDORI, -ru, -tta, イケドル, 生捕, t.v. To take alive . . .” Despite the absence of *okurigana* in this entry, it has the kanji that people are most likely to use today for this word, so I do not comment on writing when *ikedoru* comes up on Lyman’s list in sub-section 3[a] below. If the representations in *Kōjien* and *Daijirin* differ in *okurigana* (as they often do), I give one or the other and do not comment on the difference. For example, for /mizu+sumaši/ ‘whirligig [beetle]’, *Kōjien* has (水澄) (with no *okurigana*) while *Daijirin* has (水澄まし). For /mizu+tamari/ ‘[water] puddle’, *Kōjien* has (水溜り) (with *okurigana* for the last syllable only) while *Daijirin* has (水溜まり) (with *okurigana* for the last two syllables). In general, I give the representation with more *okurigana*. In a few cases, the H2 entry gives kanji for a word that is typically written entirely in hiragana today. One example is the entry for /kira+kira/ きらきら ‘sparkle-sparkle’, which has (煌煌). In cases like this, where the kanji are morphologically and/or etymologically unhelpful, I note the typical modern representation. On the other hand, if an entry in H2 has a kanji that is not morphologically or etymologically misleading but is too obscure to have made it onto the list of *jōyō-kanji* 常用漢字 ‘general-use kanji’, I do not comment on it.³ An example is the first kanji (鬢) in the H2 entry for /biN+saši/ 鬢差/鬢挿 ‘sidelock hairpin’. This same example

illustrates another point. The H2 entry has 〈鬢挿〉, and *Kōjien* and *Daijirin* give 〈鬢差〉 and 〈鬢挿〉 as alternative ways of writing /biN+saši/. Whenever one of the alternatives matches the H2 entry in this way, I do not comment on how the word is written unless an alternative representation provides some sort of useful information.

If the word Lyman listed is not a headword in H2 but appears in the entry for one of the word's elements, I cite the relevant headword. For example, Lyman's sub-sub-section 2(aa) includes “sam – ” among items ending in “ben.” There is no H2 headword *sam-ben* (*san-ben* in my romanization), but the H2 entry for /heN/ 遍 ‘time’ includes “*Sam-ben*, three times.” Since *hen* is the relevant headword in this case, I add “[s.v. *hen*]” to the H2 citation for *san-ben* that appears below. There are no kanji for this *san-ben* in H2, but since the entry headed by *san* (/saN/) ‘three’ gives 〈三〉 and the entry for *hen* ‘time’ gives 〈遍〉, I give 〈三遍〉 for *san-ben*. I make the corresponding inference about kanji for all examples of this type.

In some cases, there are two or more relevant entries in H2 that match Lyman's romanization, and I give them below as alternatives, marked ^[1], ^[2], etc. For example, Lyman's sub-sub-section 2(ab) lists examples ending in a Sino-Japanese element, and one of the items on the list is “-gai” combined with “san”. H2 lists both *san-gai* corresponding to modern Tōkyō /saN·gai/ 三階 ‘third floor’ and *san-gai* corresponding to modern Tōkyō /saN·gai/ 三界 ‘the three realms of existence’ as headwords, and since either would have been an appropriate example for Lyman, I cite both.

Most of Lyman's article is organized into four main sections, numbered 1 through 4, and except for section 1 (which cites only a single example), each section contains lists of examples. In sections 2 and 4, Lyman presented each list in a labeled sub-section or sub-sub-section, but for some reason he did not use sub-section labels for the five separate lists in section 3. For the sake of consistency, and to make references to these sets of examples easier, I have added sub-section labels (“3[a]” through “3[e]”) below.

In more than a few cases, Lyman categorized an example in a way that is clearly wrong (as noted above in connection with /akaru-i/ 明るい ‘bright’) or at least dubious. I have pointed out most of these problems below in the brief explanatory notes that follow many of the individual examples. Some of the recurring problems are taken up in more detail in Chapter 7. For many of the etymologically inappropriate examples on Lyman's lists, plausible folk etymologies are available, and if native speakers find such a folk etymology intuitively compelling, the example in question can be synchronically relevant. For instance, the now obsolete word /šitodome/ 鷗目 ‘decorative border around a hole’ is listed in Lyman's sub-section 4(a), which is supposed to contain compounds with “verbal” second elements. (The form “shito-tome” is what actually appears on Lyman's list and as an

H2 headword, but *NKD* lists only /šitodome/ and describes /šitotome/ as an older pronunciation.) Etymologically, this word is a compound of two nouns, /šitodo/ 鷗 ‘bunting’ (which is obsolete) and /me/ 目 ‘eye’, and the meaning is an obvious metaphor. The H2 definition, however, is “a hasp or clasp, for fastening a wallet,” and no kanji are provided. Given the etymologically incorrect hyphenation and the absence of kanji, it was only natural for Lyman to analyze the last two syllables of /šitotome/ as based on a verb, probably /tomer–ru/ 留める ‘to fasten’. The resulting initial element in /šito+tome/ was opaque, but since the bird name /šitodo/ (~/šitoto/) was already obsolete, the initial element in etymologically correct /šitodo+me/ (~/šitoto+me/) was also opaque. There is little doubt that Lyman must have had something along these lines in mind. I have suggested possible folk etymologies, some plausible and some not, in the brief explanatory notes that follow many of the individual examples below.

In many other cases, Lyman’s examples are appropriate etymologically but not synchronically. As an illustration, consider /sobakasu/ 雀斑 ‘freckles’, which appears in sub-section 4(e) of his article. This word originated as a compound with the literal meaning ‘buckwheat husks’ (cf. /soba/ 蕎麦 ‘buckwheat’, /kasu/ 滓 ‘dregs’), so it is etymologically an example of the right type, but it is highly unlikely that a late-19th-century Tōkyō speaker would have analyzed it as a compound. In addition to the fact that only the metaphorical meaning was current, the kanji (雀斑) obscured the etymology for any literate speaker who knew them. In general, etymologically misleading kanji seem to have a profound affect on whether ordinary speakers analyze apparent compounds in Japanese. As noted below in connection with /niwatori/ 鶏 ‘chicken’, which appears in sub-section 4(e), the single kanji ordinarily used to write this word obscures the etymologically correct and seemingly obvious analysis into /niwa/ 庭 ‘garden, yard’ and /tori/ 鳥 ‘bird’. Not only ordinary native speakers but even professional linguists typically lack the intuition that /niwatori/ is a compound.

It is important to keep in mind that Lyman’s work predated the widespread appreciation of the distinction between synchronic and diachronic analysis. As a result, he does not seem to have been concerned about mismatches between etymological analysis and synchronic morphological analysis.

1

This is the example that Lyman cited as an exception to his claim that “*B, d, g, j, p, or z* in the next syllable . . . or any following one . . . prevents the *nigori*.”

ama-gappa

H2: 雨合羽 a raincoat

2(aa)

Lyman said that most examples ending in a Sino-Japanese element do not have *rendaku*, and he cited the minority that do in his section 2. Sub-section (a) lists those in which the element that shows *rendaku* is “immediately preceded by the letter *n*” (i.e., the moraic nasal /N/), and sub-sub-section (aa) lists those “which change *nh* or *nf* to *mb*.” He cited the first example in 2(aa) as an exception, since the pronunciation /zeN·hai/ does not have the /p/ that typically occurs when /b/ does not.

zen-hai ~ zen-pai

H2: *zen-pai* or *zen-hai* 先輩 predecessors, those previously engaged in the same work

Both pronunciations are attested according to the entry in *NKD*. This word is not listed at all in *Kōjien* or *Daijirin*.

jīn-ben

H2: *jīn-ben* 神變 a sign or wonder wrought by divine power, a prodigy, a strange event, wonderful phenomenon

man-ben

H2: *mam-ben* 滿遍 evenly, uniformly, everywhere, all over

nin-ben

H2: *nim-ben* 人偏 the radical for man written on the left side of a character

san-ben

H2 [s.v. *hen*]: *sam-ben* 三遍 three times

san-byaku

H2 [s.v. *san*]: *sam-biyaku* 三百 three hundred

san-bon

H2: not listed

No headword of this form is listed in H3 either, but Lyman almost certainly intended the word corresponding to modern Tōkyō /saN·boN/ 三本 ‘three long things’.

han-bitsu

H2: *hambitsu* 半櫃 a small trunk

hon-buku

H2: *hom-buku* 本復 restoration to health, recovery from sickness

in-ban

H2: *im-ban* 印判 a seal, stamp

ken-beki

H2: *kem-beki* 痲癰 a place on the back of the shoulder above the spine of the scapula, where the moxa is applied

men-baku

H2: *mem-baku* 面縛 – *suru* to bind oneself in token of surrender

This example is one of several taken up in §7.3.4 (see Table 7.15).

2(ab)

Lyman cited the examples in this sub-sub-section as ending in a Sino-Japanese element that shows *rendaku* manifested by a voiced obstruent other than /b/ immediately following /N/.

jīn-zū

H2: *jīn-dzū* 神通 divine knowledge of past present and future events; divine power

yū-zū

H2: *yū-dzū* 融通 circulation of money, money matters, finance, fiscal matters

The H2 entry actually has 〈通融〉 for the kanji, with the two characters in the opposite order. This error was corrected in H3.

? *han-goku*

H2: not listed

The only possibility listed in *NKD* is /haN·goku/ 半国 ‘half a country’. This word is not listed in H3, *Kōjien*, or *Daijirin*.

hon-goku

H2: 本国 native country

kin-goku

H2: 近国 neighboring states or provinces

on-goku

H2: 遠国 a distant country

ran-goku

H2: 乱国 a country disturbed with war

rin-goku

H2: 隣国 a neighboring country

san-goku

H2: 三国 the three countries of India, China, and Japan

sen-goku

H2: 戦国 a country disturbed by war

en-ja

H2: 縁者 relations, connections

han-ja

H2: 判者 a judge, a critic

in-ja

H2: 隠者 a hermit, recluse, one who lives in retirement or has forsaken the world

kan-ja

H2: 間者 a spy

sen-ja

H2: 撰者 an author, the writer of a book

shin-ja

H2: 信者 a devout, religious person; a believer, a saint

ban-jaku

H2: 盤石 a large rock, a boulder

? en-jaku

H2: 鶺鴒 the wagtail

The kanji (鶺鴒) in H2 are normally used to write /seki-rei/ 'wagtail', whereas /eN-ĵaku/ is usually written (燕雀) (*NKD*, *Kōjien*, *Daijirin*), and according to *NKD*, the latter means 'swallows and sparrows' or, metaphorically, a small-minded person. There is, however, no other headword of the form /eN-ĵaku/ in *NKD* that would be a better possibility. H3 gives the kanji (縁雀) for *enjaku* defined as 'wagtail'.

on-jaku

H2: 温石 a hot stone dipped in water and applied to a painful part

ren-jaku

H2: 連尺 a wooden frame slung over the back and used for carrying bulky articles as straw, &c.

san-jaku

H2: *-obi* 三尺帶 a belt of three feet long, made of a piece of common muslin passing once around, worn by low people

tan-jaku

H2: 短尺 paper cut into long and narrow strips used for writing poetry

ren-ji

H2: 櫺子 the frame work of upright wooden bars before windows

zen-ji

H2: 禪師 a Buddhist priest, or Bonze, of the *zenshū* sect

ba-ken-jo

H2: 馬見所 the stand from which to look at horses running

kan-jo

H2: 閑所 a privy

kin-jo

H2: 近所 neighborhood, vicinity

nan-jo

H2: 難所 a difficult place

shin-jo

H2: 寢所 a bed, bedchamber

nan-zan

H2: 難産 a difficult parturition

rin-zan

H2: 臨産 the approach of parturition, the time when parturition is expected

san-zan

H2: 山々 a superlative, generally used in a bad sense

Typically written 〈散々〉 (*Kōjien*, *Daijirin*). The kanji in the H2 entry are *ateji*, but this is still a relevant example. It is not listed in sub-section 4(b) below because Lyman listed only reduplicated examples without *rendaku* there.

en-dō

H2: *yen-dō* 萹豆 a kind of pea

Typically written 〈豌豆〉 (*Kōjien*, *Daijirin*).

en-gi

- H2: ^[1] *yen-gi* 縁起 the historical record of the origin of a *Miya* or *Tera*
^[2] *yen-gi* 縁起 omen, sign, prognostic, luck

The H2 entry for the second item mistakenly writes it with the kanji (延喜), which represent the era name *Engi* (901–923). H3 also lists these two items as separate headwords but gives the kanji (縁起) for both. Etymologically, the two items are the same, and *NKD* treats them as sub-entries under the same headword.

han-dan

- H2: 半端 half a piece of cloth

han-dō

- H2: *handō* 飯桶 a bucket for carrying rice

han-zatsu

- H2: 繁雜 confusion, disorder

This example is one of several taken up in §7.3.4 (see Table 7.15). The kanji (雜) never represents /sacu/.

san-zui

- H2: *san-dzui* 三水 the radical for water written at the side of a character

san-gai

- H2: ^[1] 三階 three-storied, third story
^[2] 三界 the three worlds, or states of existence, – the past, present, and future

san-jiki

- H2: ~ *sa-jiki*; 棧敷 the box, or gallery in a theater

The second element in this word is not Sino-Japanese. This example is one of several taken up in §7.3.4 (see Table 7.16).

san-zai

- H2: 散財 spending or squandering money or one's property

This example is one of several taken up in §7.3.4 (see Table 7.14).

san-za-shi

- H2: 山查子 the *Cratagus cuneate*

Lyman had “-zashi” here, implying that /saN/ is the first element and /zaši/ is the second element. The hyphen in the *NKD* entry implies the same division, although there is no headword listed in *NKD* with an appropriate meaning and the pronunciation /saši/. The hyphen in the *Kōjien* entry implies /saNza+ši/, and there is no hyphen in the *Daijirin* entry. *NKD*, *Kōjien*, and *Daijirin* all give (山榿子) first and (山查子) second as the kanji representation, and

according to *NKD*, the Chinese name for this plant (a hawthorn) is written 山檀. This example is appropriate for this sub-sub-section of Lyman's article in the sense that, regardless of whether /za/ is written as 檀 or as 查, the /z/ can be construed as an instance of apparent rendaku (i.e., *shindaku* 新濁; see §7.3.3).

san-ze

H2: 三世 the three worlds, or states of existence – past, present, and future

san-zen

H2: not listed

No headword of this form is listed in H3 either, but Lyman almost certainly intended the word corresponding to modern Tōkyō /saN·zeN/ 三千 'three thousand'.

sen-zan-kō

H2: 穿山甲 the skin or scales of a manis, or pangolin, used as a medicine

sen-zen

H2: 前々 former, previous

NKD lists a headword with this meaning and written this way with the phonological form /zeN·zeN/, but the entry says that /seN·zeN/ is an alternative pronunciation. This example is one of several taken up in §7.3.4 (see Table 7.14). It is not listed in sub-section 4(b) below because Lyman listed only reduplicated examples without rendaku there.

bu-shin-jin

H2: 無信心 infidelity, unbelief, not devout, irreligious

in-ju

H2: 院主 the superior of a monastery, abbot

kon-jiki

H2: 金色 golden color

man-zai

H2: 万歳 ten thousand years, used in congratulating others; also strolling ballet singers and dancers, who go about at the beginning of the new year

nen-jū

H2: 年中 the whole year

shin-zō

H2: 新造 a new ship

This example is one of several taken up in §7.3.4 (see Table 7.15).

ten-den

H2: each one, everyone, all

Typically written in hiragana: 〈てんでん〉 (*Kōjien*, *Daijirin*). According to both *Kōjien* and *Daijirin*, /teNdeN/ is etymologically a contraction of /te ni te ni/ (cf. the native Japanese noun /te/ 手 'hand' and the locative/additive particle /ni/), and the earliest *NKD* citation is dated 1516. Nonetheless, this example has a Sino-Japanese-like phonological form, and Lyman may have had some folk etymology in mind. It is impossible to know for certain whether he thought it was a reduplication. Even if he did, it would not listed in sub-section 4(b), which contains only reduplicated examples without *rendaku*.

un-jū-kitsu

H2: 雲州橘 a kind of orange without seeds

Typically written 〈温州橘〉 (*NKD*). *Unshū* written 〈雲州〉 is another name for the old Japanese province of Izumo 出雲 (*Daijirin*). *Unshū* (also pronounced *Onshū*) written 〈温州〉 denotes the Chinese city Wēnzhōu, which is known for citrus (*Daijirin*). *NKD* lists /uN·juH+kicu/ as a headword, but the entry notes that the word /uN·šuH+mikaN/ 温州蜜柑 (with /š/ rather than /j/) also exists and has the the same meaning. *Daijirin* lists /uN·šuH+kicu/ and not /uN·juH+kicu/ as a headword; *Kōjien* lists neither. Both *Kōjien* and *Daijirin* list /uN·šuH+mikaN/. This variety of Mandarin orange is the most common in Japan, and it is often called a *Satsuma orange* in English. The biological name is *Citrus unshiu*.

yun-zei

H2: 弓勢 the power of a bow or the force of an arrow

2(b)

The examples in this sub-section are those that Lyman identified as ending in a Sino-Japanese element that shows *rendaku* but is not immediately preceded by the moraic nasal /N/.

do-bei

H2 [s.v. *hei*]: 土屏 a mud wall

ishi-bei

H2 [s.v. *hei*]: 石屏 a stone fence

ita-bei

H2: 板屏 a board fence

neri-bei

H2: 練屏 a wall built of tiles laid horizontally in mortar

ashi-byōshi

H2: *ashi-biyōshi* 足拍子 beating time or drumming with the feet

ita-byōshi

H2 [s.v. *hiyō-shi*]: 板表紙 board-covers

ma-byōshi

H2: *ma-biyōshi* 間拍子 time, or measure in music

shira-byōshi

H2: *shira-biyōshi* 白拍子 a female dancer

te-byōshi

H2: *te-biyōshi* 手拍子 beating or keeping time with the hands, in music; drumming with the fingers

ue-bōsō

H2: *uye-bōsō* 植疱瘡 vaccination, also inoculation

? *uma-bōsō*

H2: not listed

Lyman may have intended 馬疱瘡 ‘horse pox’, but no such word is listed in *NKD*.

? *ushi-bōsō*

H2: not listed

Lyman may have intended 牛疱瘡 ‘cow pox’, but no such word is listed in *NKD*.

gō-buku

H2: 降伏 –*suru* to bring into subjection, to make submit

Lyman had “go-BUKU” here, with a short first vowel, but this must be an error. No headword of the form /gobuku/ is listed in *NKD*. This example is one of several taken up in §7.3.4 (see Table 7.14).

imi-buku

H2: 忌服 the clothes worn during mourning

ki-buku

H2: 忌服 the period of mourning on the death of a relative, during which a person remains at home, is considered unclean, and is not allowed to enter *Miya*

cha-dansu

H2: 茶廚 a cupboard for keeping tea and tea utensils

Typically written 〔茶箆筥〕 (*Kōjien, Daijirin*).

chō-dansu

H2: 帳廚 a chest or bureau in which account books, or registers are kept

Typically written 〔帳箆筥〕 (*Kōjien, Daijirin*).

ishi-dōrō

H2: 石灯籠 a stone lamp post

The second kanji in the H2 entry is actually 〔鐙〕, but this is clearly an error. It was corrected in H3.

mawari-dōrō

H2: 影灯 a lantern with a revolving shade

Typically written 〔回り灯籠〕 (*Kōjien, Daijirin*).

taka-dōrō

H2: 高灯 a light house

Typically written 〔高灯籠〕 (*Kōjien, Daijirin*). These are the kanji that appear in H3. The romanization in both H2 and H1 ends with short ⟨o⟩, but the word is spelled correctly as 〔タカドウロウ〕 (*ta ka do u ro u*) in katakana in H1 (and in H3).

tsuri-dōrō

H2: 釣灯籠 a hanging lantern

The romanization in H2 (and in H1 and H3) ends, incorrectly, with short ⟨o⟩. The katakana spelling in H1 and H3 is 〔ツリドウロ〕 (*tsu ri do u ro*), which matches the incorrect romanization, but in H2 it is 〔ツリドロウ〕 (*tsu ri do ro u*), which is also incorrect but does not match the incorrect romanization.

bō-zu

H2: *bōdzu* 坊主 a bonze or Buddhist priest; one whose head is shaven; a servant in a Daimiyo's house

jō-zu

H2: *jō-dzu* 上手 a good hand, skillful, expert, dextrous, adept

kakure-ga

H2: 隠家 a secluded or retired house

The second element in this word is native Japanese (Martin 1987:435). This example is one of several taken up in §7.3.4 (see Table 7.16).

me-ga

H2: 牝鹿 a female deer, a doe

The second element in this word is native Japanese (Martin 1987:430). This example is one of several taken up in §7.3.4 (see Table 7.16).

utsuri-ga

H2: 移香 the odor perceived in anything that has been in contact with a perfume

The second element in this word is native Japanese (Martin 1987:430). This example is one of several taken up in §7.3.4 (see Table 7.16).

waki-ga

H2: 脇臭 the offensive smell of the armpit

Typically written (腋臭) (*Kōjien*, *Daijirin*). The second element in this word is native Japanese (Martin 1987:430). This example is one of several taken up in §7.3.4 (see Table 7.16).

otoko-gi

H2: 男氣 manly, spirited, bold, courageous

utsuri-gi

H2: 遷気 changeable, fickle, inconstant

Typically written (移り気) (*Kōjien*, *Daijirin*). Lyman actually had “utsuri-na” here, and the romanization for the entry in H2 is (utsurigi-na), indicating that word is an adjectival noun (*keiyōdōshi* 形容動詞).

yowa-gi

H2: 弱氣 dispirited, discouraged

? Ei-goku

H2: not listed

NKD does not list any headword of the form /eigoku/. Lyman’s capitalization suggests that this item is an alternative pronunciation of /ei-koku/ 英国 ‘England’, but the *NKD* entry does not mention such an alternative.

? Futsu-goku

H2: not listed

NKD does not list any headword of the form /fucugoku/. Lyman’s capitalization suggests that this item is an alternative pronunciation of /fucu-koku/ 仏国 ‘France’. *NKD* lists only /fuQ·koku/ as a headword with the meaning ‘France’, and the entry gives /fucu-koku/ and /buQ·koku/ (but not /fucu-goku/) as alternatives. *NKD* also lists the headword /buQ·koku/ 仏国 but defines it as ‘land of the

Buddhas' or 'Buddhist country'. *Kōjien* and *Daijirin* list /fucu·koku/ 仏国 'France' as a headword but do not give any alternative pronunciations.

? *ryō-goku*

H2: not listed

There are two possibilities here: /ryoH·goku/ 料国 'exploited country' and /ryoH·goku/ 領国 'possession'. Both are listed as headwords in *NKD*, *Kōjien*, and *Daijirin*. The *NKD* entry for the latter says that the pronunciation /ryoH·koku/ is also attested. It is also possible that Lyman intended the Tōkyō place name *Ryōgoku* 両国.

kuchi-girei

H2: pleasantly spoken, speaking so as to please or gratify others

Typically written 〈口奇麗〉 (*Kōjien*, *Daijirin*).

te-girei

H2: 手奇麗 doing in a neat, clean way

cha-gashi

H2: *cha-guwashi* 茶菓子 fruits, or sweetmeats eaten with tea

The H2 entry actually has just 〈茶菓〉 for the kanji, but this is clearly an error. It was corrected in H3.

hi-gashi

H2: *hi-guwashi* 乾菓子 dried fruit, a kind of confectionary

mizu-gashi

H2: *midzu-guwashi* 水菓子 fruit

Typically written 〈水菓子〉 (*Kōjien*, *Daijirin*).

annai-ja

H2: 案内者 a guide, one acquainted with the roads or natural features of a country or place

chō-ja

H2: 長者 a rich-man, one in good circumstances

mō-ja

H2: 亡者 a deceased person

ninsō-ja

H2: 人相者 a physionomist, one who tells fortunes by examining the face

shugyō-ja

H2: *shu-giyō-ja* 修行者 a religionist, devotee, pilgrim

uranai-ja

H2: 卜者 a diviner, fortune-teller

dō-ji

H2: 童子 a little boy

e-ji

H2: *yeji* 衛士 a servant in the Mikado's palace

hana-ji

H2: 鼻血 bleeding at the nose

The H2 entry actually has 〈血鼻〉 for the kanji, with the two characters in the opposite order. This error was corrected in H3.

hashiri-ji

H2: 血痔 bleeding piles

Typically written 〈走痔〉 (*Kōjien*; not listed in *Daijirin*). This example is one of several taken up in §7.3.4 (see Table 7.15).

hei-ji

H2: ^[1] 瓶子 a pitcher, bottle

NKD lists /hei-ji/, not /hei-ši/, as a headword, but the entry says the modern pronunciation is /hei-ši/.

^[2] 平治 –*suru* to quell, subdue, to tranquilize, to quiet

tō-ji

H2: ^[1] 冬至 the winter solstice

^[2] 湯治 hot-springs

Yanaïke (1991:77) suggests /toHji/ 杜氏 ‘saké brewer’, which also appears as a headword in H2, as another possibility, but the etymology of this word is uncertain according to the *NKD* entry. It certainly is not an ordinary Sino-Japanese binom because the Sino-Japanese morphs associated with the first kanji 〈杜〉 are /to/ (with a short vowel) and (much more rarely) /zu/. Perhaps the etymological second element is the ancestor of native Japanese /ujji/ 氏 ‘clan’. On the other hand, *NKD* lists /toji/, with a short first vowel, as an alternative pronunciation. If we leave aside the vowel-length problem and assume that /ji/ is Sino-Japanese, the voicing looks rendaku-like to a present-day speaker. The list under 〈氏〉 in the reverse-lookup counterpart of *Daijirin* (Sanseidō Henshū-jo 1997) shows that there are *Daijirin* headwords written with 〈氏〉 representing word-initial /ši/ but none with 〈氏〉 representing word-initial /ji/.

In addition, Yanaïke suggests the Sino-Japanese binom /toH-ji/ 当時 ‘that time’, which is another H2 headword. Some kanji dictionaries (e.g., Tōdō et al. 2018) give /ši/ as a Sino-Japanese reading of 〈時〉, but the list under 〈時〉 in the

reverse-lookup counterpart of *Daijirin* (Sanseidō Henshū-jo 1997) shows that there are no ordinary Sino-Japanese words listed as *Daijirin* headwords in which 時 represents /ši/. Thus, a present-day speaker has no reason to think that the /j/ in /toH·ji/ 'that time' is the result of rendaku-like voicing. (See Chapter 7 note 74 in connection with Table 7.15 in §7.3.4 for an explanation of "lexicographical ghost" readings.)

e-jiki

H2: *vejiki* 餌食 the food of birds, fishes, or animals

This example is one of several taken up in §7.3.4 (see Table 7.15).

kotsu-jiki

H2: 乞食 a beggar

This example is one of several taken up in §7.3.4 (see Table 7.15).

moku-jiki

H2: 木食 eating the fruit of trees only, as certain Buddhist priests, who retire to the mountains or secluded places; a hermit, anchorite

This example is one of several taken up in §7.3.4 (see Table 7.15).

ni-jiki

H2: 二食 two meals a day

This example is one of several taken up in §7.3.4 (see Table 7.15).

niku-jiki

H2: 肉食 flesh eater, carnivorous

This example is one of several taken up in §7.3.4 (see Table 7.15).

so-jiki

H2: 粗食 coarse or mean food

This example is one of several taken up in §7.3.4 (see Table 7.15).

bareki-jin

H2: 馬櫪神 the god of horses and stables

This example is one of several taken up in §7.3.4 (see Table 7.14).

sa-dai-jin

H2: 左大臣 the name of the highest office in the supreme council of state and next in rank to the *Daijōdaijin*

This example is one of several taken up in §7.3.4 (see Table 7.14).

sui-jin

H2: 水神 the god of water

This example is one of several taken up in §7.3.4 (see Table 7.14).

u-dai-jin

H2: 右大臣 One of the highest office in the government, next in rank to the *Sadaijin*, and member of the council of state

Lyman actually had “ubai–” here, but this must be an error. No such headword appears in H2 or in *NKD*, and /u+dai-jiN/ is almost certainly what Lyman intended. This example is one of several taken up in §7.3.4 (see Table 7.14).

yō-jin

H2: 用心 caution, heed, care, or prudence in regard to danger; circumspection, watchfulness

? *kawai-jo*

H2: not listed

No headword of the form /kawaijo/ appears in H3 or in *NKD*, so this item is presumably an error, but I have not been able to come up with a plausible candidate for what Lyman intended here. Yanaike (1991:77) suggests /kai-joH/ 回状 ‘circular’, which does not appear as a headword in either H2 or H3. This suggestion implies two errors in romanization, since Lyman should have romanized it as <kuwaijoo> (see §5.1). Some kanji dictionaries (e.g., Tōdō et al. 2018) give /šoH/ as a Sino-Japanese reading of <状>, but the list under <状> in the reverse-lookup counterpart of *Daijirin* (Sanseidō Henshū-jo 1997) shows that there are no ordinary Sino-Japanese words listed as *Daijirin* headwords in which <状> represents /šoH/. Thus, a present-day speaker has no reason to think that the /j/ in /kai-joH/ ‘circular’ is the result of rendaku-like voicing. (See Chapter 7 note 74 in connection with Table 7.15 in §7.3.4 for an explanation of “lexicographical ghost” readings.)

kiroku-jo

H2: 記録所 the council chamber in the Midako’s court

Lyman actually had “niroku–” here, but no headword of the form /nirokujo/ appears in H2 or in *NKD*, so it is presumably an error, and /ki-roku+jo/ is almost certainly what Lyman intended.

gin-zaiku

H2: 銀細工 silver ware

This example belongs in sub-sub-section 2(ab) above, since the voiced obstruent of interest immediately follows /N/ but is not /b/.

mugiwara-zaiku

H2 [s.v. *mugi-wara*]: 麦稈細工 articles made of straw
Typically written (麦藁細工) (*Kōjien*, *Daijirin*).

te-zaiku

H2: 手細工 any small or ingenious work made by oneself, or at home

kake-zan

H2: 掛算 multiplication

ka-zan

H2: not listed

The intended word here is probably /ka·zaN/ 火山 'volcano'. Lyman's romanization was "kuwa –" (cf. the historical kana spelling くわざん). H2 gives only (kuwa-san), with /s/, for 'volcano', but H3 gives only (kwazan), with /z/. The entry in *NKD* says that the pronunciation with /s/ is attested, but the sole citation not written only in kanji is the entry from H2.

menoko-zan

H2: 女子算 the way of reckoning used by those ignorant of the abacus, as counting on the fingers; mental arithmetic

Typically written (目の子算) (*Kōjien*, *Daijirin*).

muna-zan'yō

H2: 臆算用 mental calculation, plan

Typically written (胸算用) (*Kōjien*, *Daijirin*).

nagare-zan

H2: 流産 miscarriage, abortion

? *sa-zan*

H2: (cont. of *san-zan*) three times three

There are no kanji in the H2 entry, but this word would presumably be written (三々). No such headword (pronounced either /sazaN/ or /saNzaN/) is listed in *Kōjien*, *Daijirin*, or *NKD*. In fact, no *NKD* headword has the form /sazaN/.

tatami-zan

H2: 畳算 a way of divining, or settling a doubt, by casting anything on a mat, and counting the square on which it falls

wari-zan

H2: 割算 the rule of division in arithmetic

hei-zei

H2: 平生 common, usual, ordinary, customary, habitual, every-day

fu-zei

H2: 風情 manner, appearance, like; used also when speaking humbly of oneself

ō-zei

H2: 大勢 a multitude, a great company

sei-zei

H2: 精々 again and again, over and over again, repeatedly

atsu-gan

H2: 熱爛 hot sake

chiwa-genka

H2 [s.v. *chi-wa*]: love-quarrel 千話喧嘩

Typically written (痴話喧嘩) (*Kōjien*, *Daijirin*).

dō-zen

H2: 同前 same as before, ditto, alike

This example is one of several taken up in §7.3.4 (see Table 7.14).

gō-batsu

H2: 豪髮 a hair's breadth

Lyman had “gobatsu”, with a short first vowel, but this must be an error. No headword of the form /gobacu/ is listed in *NKD*.

funa-gassen

H2: 船合戦 a naval battle

fū-zetsu

H2: 風説 a report, rumor

gyō-zui

H2: *gyō-dzui* 行水 bathing with warm water

Lyman had “giyodzui,” implying short /o/, but this must be an error. No headword of the form /gyozui/ is listed in *NKD*.

hatsu-gōri

H2 [s.v. *hatsu*]: 初氷 the first ice of the season

haya-bikyaku

H2: *hayabikiyaku* 早飛脚 an express post

kō-gaku

H2: 講学 lesson, recitation, exercise

This example is one of several taken up in §7.3.4 (see Table 7.15).

ka-jichi

H2: 家質 giving a house as security; pawning, pledging, or mortgaging a house

katsu-datsu

H2: 闊達 of quick discernment, prompt and decided in action, straight-forward, frank, shrewd

NKD lists only /kaQ-tacu/ as a headword but says that /kacu-dacu/ is an older pronunciation.

mizu-jaku

H2: *midzu-jaku* 水尺 a rod, or line for measuring the depth of the water, a log

ne-zō

H2: 寝相 the way of sleeping, the position in sleep

o-tama-jakushi

H2: a tadpole

Typically written 〈御玉杓子〉 (*Kōjien*, *Daijirin*).

? *sa-gan*

H2: *saguan* a secretary, clerk, writer in a government office

There are no kanji in the H2 entry. H3 gives 〈sagwan〉 for the same word, also with no kanji. *NKD* lists /sa-kaN/ 佐官 but not /sagaN/ as a word with this meaning; no relevant headword of the form /sagaN/ (with the historical kana spelling 〈さぐわん〉) is listed.

shige-dō

H2: 重籐 a bow wrapped around with rattan

The H2 entry has 〈藤〉 for the second kanji, but this is an error. The H3 entry has the same kanji and gives the romanization as 〈shigetō〉, but the *NKD* entry for this word does not mention /šige+toH/ as a possible alternative pronunciation. This example is one of several taken up in §7.3.4 (see Table 7.14).

sode-gōro

H2: 袖香爐 a small censer used by carrying in the sleeve

Typically written 〈袖香炉〉 (*Kōjien*, *Daijirin*). Lyman had “soodegooro”, with a long first vowel, but this must be an error. No headword of the form /soHde-goHro/ is listed in *NKD*.

tō-ga

H2: *tōguwa* 冬瓜 the “winter melon,” a pumpkin

usu-geshō

H2: 淡粧 powdering the face thinly with white powder
Typically written 〔薄化粧〕 (*Kōjien*, *Daijirin*).

yaki-ban

H2: 焼判 a hot iron used for branding or stamping

NKD lists only /yaki+haN/ as a headword and does not give /yaki+baN/ as an alternative pronunciation, but both forms appear as headwords in the pre-eminent Japanese-English dictionary (Watanabe et al. 2003). This example is one of several taken up in §7.3.4 (see Table 7.14).

yase-jotai

H2: little property or means

Typically written 〔痩せ所帯〕 (*Kōjien*, *Daijirin*).

yu-dōfu

H2: 湯豆腐 boiled *tōfu*

3[a]

These examples are from the first paragraph of Lyman’s section 3. He did not provide a sub-section label, so I have added “[a]” to make references to this set of examples easier. Lyman described the words listed here as “given by Hepburn as compound verbs.” It is clear from the examples that Lyman intended “compound verbs” to mean verbs based on two verb elements (i.e., V+V=V compounds). The great majority of such compound verbs do not have *rendaku*, and Lyman cited only examples that do have it.

Hepburn used the adverbial form (*ren’yōkei* 連用形) of a verb as its citation form. This same form is sometimes called the infinitive (Bloch 1946:6) or the continuative (Kuno 1973:195) in English. In addition to this citation form, the H2 entry for a verb provides the ending for the conclusive form (*shūshikei* 終止形), that is, the plain nonpast affirmative, which modern dictionaries use as the citation form. The H2 entry also provides the ending for the plain past affirmative, katakana for the conclusive form, and a transitivity notation (*i.v.* for an intransitive verb, *t.v.* for a transitive verb). For example, in the case of *ike-doru* (modern *Tōkyō* /ike+dor-u/ 生け捕る ‘to capture alive’), the entry in H2 begins: “IKEDORI, -ru, -tta, イケドル, 生捕, *t.v.*”

Segmentally, the adverbial form (*ren’yōkei*) is also the form that a verb takes when it is used as (or converted into) a noun, although there is a difference in accent in some cases (Martin 1975:883–885). Since Lyman used this

form to cite both verbs and deverbal nouns, many of his examples are ambiguous, as we see especially in his sub-section 4(a) below. Even here in Lyman's sub-section 3[a], the word that matches his example is in some cases listed in H2 only a noun, not as a verb. I have noted these problematic examples individually. Otherwise, I have just substituted the modern citation form (the conclusive form) without comment.

Normally, the form that the first element takes in a V+V=V compound is also segmentally identical to the adverbial form (*ren'yōkei*). For example, the first element in /cure+dac-u/ 連れ立つ 'to go together' is /cure/, which is identical both to the adverbial form of the verb /cure-ru/ 連れる 'to accompany' and to the deverbal noun /cure/ 連れ 'companion'. In some cases, however, including a few of Lyman's examples in this sub-section, the first element appears in a contracted form, as in *fun-baru* (modern Tōkyō /fuN+bar-u/ 踏ん張る 'to stand firmly'). The adverbial form of the verb /fum-u/ 踏む 'to step on' is /fum-i/ 踏み. I mentioned in the Preface that I use a hyphen to mark what is commonly treated as the boundary between a stem and an inflectional ending, but for verbs in one of the two major traditional conjugation classes, there is no inflectional ending for the adverbial.⁴ Using the examples already cited in this paragraph to illustrate, the adverbial form of /fum-u/ is /fum-i/, but the adverbial form of /cure-ru/ is /cure/, which is identical to the root. This problem comes up in §7.4.2, but the important point here is that a verb form that appears as a non-final element in a compound functions for all practical purposes like a single morph, and so does a deverbal noun derived from a simplex verb. For this reason, I do not transcribe deverbal nouns or related compound elements with a hyphen, even when the verb in question takes the adverbial suffix /i/. For example, the verb /hik-u/ 引く 'to pull' has the adverbial form /hik-i/, but there are no hyphens in /hiki+te/ 引き手 'handle' (cf. /te/ 'hand') or in /ami+hiki/ 網引き 'net puller' (cf. /ami/ 'net').

aomi-datsu

H2: 青立 to appear, or turn green

The first element in this example is the derived noun /ao+mi/ 青み 'blueness, greenness' (cf. /ao-i/ 青い 'blue, green'). This example is listed as a headword in *NKD*, but the only citation is from H1.

hōke-datsu

H2: to be frayed, rubbed out, abraded

The entry in *NKD* gives the kanji as in (蓬け立つ).

tsure-datsu

H2: 連立 to go together or in company

? *mamori-dōsu*

H2: not listed

No headword of the form /mamori+doHs-u/ (or /mamori+toHs-u/) is listed in *NKD*.

? *yomi-dōsu*H2: [s.v. *dō-shi*; listed only as a noun] *yomi-dōshi* 読通 constantly reading

NKD lists the verb /yomi+toHs-u/ 読み通す ‘to read through’ and does not give /yomi+doHs-u/ as an alternative pronunciation. It does not list a derived noun (/yomi+toHši/ or /yomi+doHši/).

ike-doru

H2: 生捕 to take alive, take prisoner

? *tsukami-doru*

H2: [listed only as a noun] *tsukami-dori* 扼取 seizing or clutching all one can get, snatching

NKD lists the noun /cukami+dori/, typically written 掴み取り (*Kōjien*, *Daijirin*), as a headword, but it lists the corresponding verb as /cukami+tor-u/ (without *rendaku*) and does not give /cukami+dor-u/ as an alternative pronunciation.

*name-zuru*H2: *name-dzuri* to lick the mouth, as an animal after eating

Typically written 舐めずる (*Daijirin*). This example obviously contains a first element based on the verb /name-ru/ 舐める ‘to lick’, but the second element is obscure. The prescriptively correct kana spelling before the 1946 reforms was なめづる (*na me tsu` ru*), but both H2 and H3 have ナメズル (*na me su` ru*) for the katakana representation of the conclusive form, and a 1923 citation in the *NKD* entry has 舐めずって (*na me su` tsu te*) for the gerund. It would have been reasonable for Lyman to folk-etymologize the second element as connected to /sur-u/ 擦る ‘to rub’.

*sae-zuru*H2: *sayedzuri* 囀 to twitter, chirp as a flock of birds; to chatter, to prate

The corresponding Old Japanese verb was ^{OJ}/sapidur-u/, and Martin (1987:745) tentatively suggests that the etymological elements are mimetic ^{pre-OJ}/sapi/ and verbal ^{pre-OJ}/tur-u/ ‘to suspend; to entice’. The vowel change dates from the early Heian period: ^{EMJ}/sapedur-u/. This example was surely not a synchronic compound for late-19th-century speakers, but Lyman probably analyzed it as /sae+zur-u/, relating the first element to /sae-ru/ 冱る ‘to become cold’, to etymologically identical /sae-ru/ 冱える ‘to become clear; to become skilled’, or to obsolete /sae-ru/ 障る ‘to obstruct’. All three of these verbs correspond to H2

headwords. As for the second element, the two possibilities listed as H2 headwords are /*cur-u*/ 吊る/釣る 'to suspend; to entice; to catch (fish)' (which is probably etymologically correct) and /*cur-u*/ 攣る 'to cramp'. None of the possible combinations seems like a very plausible folk etymology.

karon-jiru

H2: 軽 to make light of, to despise, contemn, to esteem of little value, disregard, slight

The second element in this example is based on the verb corresponding to modern Tōkyō /*su-ru*/ 'to do'. The H2 entry gives the adverbial form (i.e., the H2 citation form) as *karonji* and the conclusive form as *karondzuru*. Modern dictionaries list conclusive /*karoN+zu-ru*/ 軽んずる as a headword but also list the alternative /*karoN+ji-ru*/ 軽んじる, which is more colloquial (Martin 1975:289; see §7.4.6). In contrast to many of the examples in sub-section 3[c] below, Lyman did not give a form ending in *-dzuru* for this example. According to the entries for /*karoN+zu-ru*/ in *Kōjien* and *Daijirin*, the first element is etymologically a contraction of the adverbial form ^{EMJ}/karomi/ of obsolete ^{EMJ}/karom-u/(~^{EMJ}/karum-u/) 軽む 'to become light', which was derived from the root of the ancestor of the modern Tōkyō adjective /*karu-i*/ 軽い 'light'.

sakin-jiru

H2: 先 to regard as the first or the principal thing, to do first

The second element in this example is based on the verb corresponding to modern Tōkyō /*su-ru*/ 'to do' (see the explanation for *karon-jiru* just above). The H2 entry gives the adverbial form as *sakinji* and the conclusive form as *sakindzuru*. Modern dictionaries list conclusive /*sakiN+zu-ru*/ 先んずる but also list the more colloquial alternative /*sakiN+ji-ru*/ 先んじる. According to the *NKD* entry, /*sakiN*/ is etymologically a contraction of a noun+particle combination corresponding to modern Tōkyō /*saki ni*/ 先に 'in advance, first'.

uton-jiru

H2: 疎 to keep a distance from, shun, to dislike; to be cool, distant, or unfriendly; not to be intimate, or familiar with

The second element in this example is based on the verb corresponding to modern Tōkyō /*su-ru*/ 'to do' (see the explanation for *karon-jiru* above). The H2 entry gives the adverbial form as *utonji* and the conclusive form as *utondzuru*. Modern dictionaries list conclusive /*utoN+zu-ru*/ 疎んずる but also list the more colloquial alternative /*utoN+ji-ru*/ 疎んじる. The first element in this example is verbal but contracted (cf. modern Tōkyō /*utom-u*/ 疎む 'to shun'; adverbial /*utom-i*/). See the explanation above in the introduction to this sub-section.

yasun-jiru

H2: 安 to make peaceful, happy, or contented; to tranquilize, govern, to preserve peace

The second element in this example is based on the verb corresponding to modern Tōkyō /su-ru/ ‘to do’ (see the explanation for *karon-jiru* above). The H2 entry gives the adverbial form as *yasunji* and the conclusive form as *yasundzuru*. Modern dictionaries list conclusive /yasuN+zu-ru/ 安んずる but also list the more colloquial alternative /yasuN+jī-ru/ 安んじる. According to the *NKD* entry, /yasuN/ originated as a contraction of /yasu+mi/, that is, a derived noun consisting of /mi/ ‘-ness’ added to an adjective root (cf. modern Tōkyō /yasu-i/ 安い ‘inexpensive’) which also appears in the derived adjectival noun /yasu+raka/ 安らか ‘peaceful’.

shi-baru

H2: 縛 to bind, tie, to fasten by encircling with a cord

Martin (1987:749) relates the stem of /šibar-u/ to the etymological root /šim/ in /šimar-u/ 絞まる/締まる/閉まる ‘to be tied; to become tight; to be shut’ and /šime-ru/ 絞める/締める/閉める ‘to tie up; to tighten; to shut’, followed by a string of two formants (i.e., derivational suffixes). For this example to be relevant here, Lyman must have analyzed it as based on /su-ru/ ‘to do’ (adverbial form /ši/) and /har-u/ 張る ‘to stretch’ or /har-u/ 貼る ‘to affix’. These two possible second elements are etymologically identical but are listed as separate headwords in H2. Ogura (1910:13) explicitly rejected such an analysis (see §6.2), and neither combination is semantically a very plausible folk etymology.

shi-boru

H2: 絞 to press or squeeze out, to express, to wring

Martin (1987:749) says that the stem of /šibor-u/ is etymologically a root of uncertain meaning corresponding to /šibo/ followed by the remnant /r/ of a formant (i.e., derivational suffix). This example was surely not a synchronic compound for late-19th-century speakers, but Lyman probably analyzed it as based on /su-ru/ ‘to do’ (adverbial form /ši/) and either /hor-u/ 掘る/彫る ‘to dig; to carve’ (which appears as a headword in H2) or /hor-u/ (~/hoHr-u/) 放る ‘to fling; to discard’ (which H2 lists only with a long vowel in the first syllable). Ogura (1910:13) explicitly rejected such an analysis (see §6.2), and neither combination seems like a very plausible folk etymology.

shi-buru

H2: 渋 to be constricted, obstructed, or impeded in flowing, not passing easily or freely

Martin (1987:750) tentatively accepts that the stem of /šibur-u/ is etymologically the same root as in the adjective /šibu-i/ 渋い 'astringent' (as the kanji implies) followed by the remnant /r/ of a formant (i.e., derivational suffix). Lyman probably analyzed this example as based on /su-ru/ 'to do' (adverbial form /ši/) and a verb that would have the modern Tōkyō conclusive form /fur-u/. The three H2 headwords that are candidates for the second element are /fur-u/ 降る 'to fall', /fur-u/ 振る 'to wave, brandish', and /fur-u/ 旧る 'to grow old'. None of the possible combinations seems like a very plausible folk etymology.

shi-bomu

H2: 萎 to close, or shut, as a flower

Martin (1987:749) says that the stem of /šibom-u/ is etymologically a root of uncertain meaning corresponding to /šibo/ (see the explanation for *shi-boru* above) followed by the remnant /m/ of a formant (i.e., derivational suffix). This example was surely not a synchronic compound for late-19th-century speakers, but Lyman probably analyzed it as based on /su-ru/ 'to do' (adverbial form /ši/) and a verb that would have the modern Tōkyō conclusive form /hom-u/. Ogura (1910:13) explicitly rejected such an analysis (see §6.2). The only attested verb with the appropriate form for such a second element is an Old Japanese alternative pronunciation for the verb that corresponds to modern Tōkyō /fum-u/ 踏む 'to step on': ^{OJ}/pum-u/~^{OJ}/pom-u/. Not only is the combination a very implausible folk etymology; it is also highly unlikely that Lyman knew anything about the existence of this OJ verb.

shi-dareru

H2: 糸垂 to curve and bend downwards, as the branch of a willow

Typically written (垂れる) (*Kōjien*, *Daijirin*). This example is clearly related to /tare-ru/ 垂れる 'to droop; to drip', and Lyman probably analyzed the first element as based on /su-ru/ 'to do' (adverbial form /ši/), but this seems semantically implausible. Martin (1987:750) reconstructs a first element (in his entry for classical /šidar-u/) with no definition but not related to the verb /su-ru/. Present-day speakers may simply see /ši/ in /ši+dare-ru/ as a semantically opaque prefix, and late-19th-century speakers probably did the same. We see *ateji* for /ši/ in the H2 entry (which implies (糸垂れる); cf. Sino-Japanese /ši/ 糸 'thread') and in the common modern representation (枝垂れる) (cf. Sino-Japanese /ši/ 枝 'branch'), and the second in particular is a reasonable folk etymology.

shi-goku

H2: 扱 to draw anything through the hand

Martin (1987:750) says that this example is etymologically a combination of the ancestor of /su-ru/ ‘to do’ (adverbial form /ši/) and the ancestor of /kok-u/ 扱く ‘to strip, thresh’ (which appears as a headword in H2). Thus, Lyman’s analysis seems to be etymologically appropriate in this case, although this example probably was not a synchronic compound for late-19th-century speakers.

shi-gumu

H2: 仕組 to cut and fit together, to prepare the frame or materials by fitting and joining

NKD lists /ši+kum-u/ as a headword but gives /ši+gum-u/ as an alternative pronunciation. The first element is based on the verb /su-ru/ ‘to do’, despite the kanji (仕).

shi-gureru

H2: to rain in showers, to drizzle, only spoken of rain in the 10th month

Typically written (時雨れる) (*Kōjien*, *Daijirin*), but these kanji are etymologically irrelevant *ateji*. Historically, this example was derived from a noun (cf. modern Tōkyō /šigure/ 時雨 ‘late autumn or early winter rainshower’), for which Martin (1987:523) offers no etymology, rejecting all of the 12 suggestions in NKD. Lyman probably analyzed this example as based on /su-ru/ ‘to do’ (adverbial form /ši/) and a verb that would have the modern Tōkyō conclusive form /kure-ru/. The two H2 headwords that are candidates for the second element are /kure-ru/ 暮れる ‘to get dark; to come to an end’, and /kure-ru/ 呉れる ‘to give’. Ogura (1910:13) explicitly rejected such an analysis (see §6.2), and neither combination seems like a plausible folk etymology.

fun-baru

H2: *fum-bari* 踏張 to spread out the legs, to strut

The first element in this example is verbal but contracted (cf. modern Tōkyō /fum-u/ 踏む ‘to step on’; adverbial /fum-i/). See the explanation above in the introduction to this sub-section.

fun-batakaru

H2: *fum-batakaru* 跋扈 to straddle, to strut, to walk with proud gait, to swagger

Typically written (踏んばたかる) (*Kōjien*; not listed in *Daijirin*). The first element of this example is verbal but contracted (cf. modern Tōkyō /fum-u/ 踏む ‘to step on’; adverbial /fum-i/). See the explanation above in the introduction to this sub-section. The second element is related to modern Tōkyō /hadakar-u/ 開る ‘to spread’, for which NKD and Martin (1987:682) give /hatakar-u/ as an alternative

pronunciation. Both pronunciations appear as headwords in H2 as well, with the definition in the entry for *hadakari* and just a cross-reference in the entry for *hata-kari*. See Chapter 7 note 46 for more details on this example.

? *de-gireru*

H2: [listed only as a noun] *degire* 出切 scraps of cloth left after cutting, a remnant

NKD lists the noun /de+gire/ as a headword but no corresponding verb /de-gire-ru/ or /de+kire-ru/.

? *ire-gomu*

H2: [listed only as a noun] *ire-gomi* 入込 mixed, jumbled together

H2 also lists the compound verb /ire+kom-u/ based on the same two elements (H2: “入籠 to invest, to contribute, as capital in trade; to put into”). This verb is typically written 入込込込 (Kōjiēn, *Daijirin*). *NKD* lists the noun /ire+komi/ as a headword and gives /ire+gomi/ as an alternative pronunciation, but the entry for the verb /ire+kom-u/ does not mention /ire+gom-u/ as a possible alternative.

? *kiki-ganeru*

H2: 聞難 disagreeable or hard to hear; hard to consent to

No headword of the form /kikiganeru/ is listed in *NKD*. The H2 entry is romanized with (g) following the hyphen, but it appears out of alphabetical order and is spelled ッキカ子ル (*ki ki ka ne ru*) in katakana. The headword Hepburn intended is clearly /kiki+kane-ru/ 聞き兼ねる ‘cannot listen; to find it hard to listen’, and it is romanized correctly in both H1 and H3. The verb /kane-ru/ with the meaning ‘cannot; to find it hard to’, is highly productive as the second element in compound verbs of this type, which Martin (1975:449) describes as “semi-literary,” but it never shows rendaku. Thus, this item should not have been on Lyman’s list.

kuri-biku

H2: 繰引 to face about, retire or retreat

NKD lists /kuri+hik-u/ as a headword but gives /kuri+bik-u/ as an alternative pronunciation.

ne-zameru

H2: 寢覚 to awake, to wake from sleep

ni-bamu

H2: to turn yellowish in color, to become old and yellowish

Typically written 〈鈍む〉 (*Kōjien*, *Daijirin*). There is no etymology for this now obsolete example in the *NKD* entry, but there is an obvious etymological connection to the first element of modern Tōkyō /nibi+iro/ 鈍色 ‘dark gray’ (cf. /iro/ ‘color’). Since both ^{EMJ}/nibam-u/ and synonymous ^{EMJ}/nib-u/ are attested, it seems clear that the etymological root is /nib(a)/ and that /nibam-u/ contains the remnant /m/ of a formant (i.e., derivational suffix). The kanji 〈鈍〉 suggests a connection to the adjective /nibu-i/ 鈍い ‘dull’, and ^{EMJ}/nibu+iro/ is attested as an alternative pronunciation for ^{EMJ}/nibi+iro/, but the *NKD* entries for /nibi+iro/ and /nibu-i/ do not propose this connection. For this example to be relevant for Lyman here, he must have analyzed it as containing a first element based on /ni-ru/ 似る ‘to resemble’ or /ni-ru/ 煮る ‘boil’ and a second element based on /ham-u/ 食む ‘to eat’. All three of these verbs are listed as headwords in H2, but neither combination seems semantically plausible as a folk etymology, and this example almost certainly was not a synchronic compound for late-19th-century speakers.

oi-boreru

H2: 耄 to become childish with age, to be in one’s dotage, decrepit
Typically written 〈老い耄れる〉 (*Kōjien*, *Daijirin*).

sashi-gumu

H2: 指汲 the eyes to fill suddenly with tears

Typically written 〈差し含む〉 (*Kōjien*, *Daijirin*). The *NKD* entry does not propose a definite etymology, but this example certainly appears to have originated as a V+V=V compound. Modern Tōkyō /sas-u/ has a wide variety of senses, as did its OJ counterpart, but the one that seems etymologically likely for the first element is /sas-u/ 差す/注す (cf. ^{OJ}/sas-u/) ‘to pour’. The *Daijirin* entry for /saši+gum-u/ identifies the second element as the same “suffix” that appears in /namida+gum-u/ 涙ぐむ ‘to become filled with tears’ (cf. /namida/ ‘tear’). The *NKD* entry for /gum-u/ says it attaches to a noun base and derives a verb meaning ‘to show signs of NOUN’. Martin (1987:732) tentatively identifies the /gum-u/ in /namida+gum-u/ with the ancestor of modern Tōkyō /kum-u/ 汲む ‘to dip, scoop up’. In any case, for a late-19th-century speaker, /saši+gum-u/ was probably easy to divide into elements but semantically opaque.

sae-giru

H2: *sayegiri* 遮 to fill up, block up, obstruct, intercept, to hinder, prevent, to be constrained

According to Martin (1987:745) and to the *NKD* entry for this example, it developed from an older form that would be pronounced /saigiru/ if it had survived into modern Tōkyō Japanese. The *NKD* entry for /sai+gir-u/, which appears as a

separare headword, says that /sai/ is etymologically a contraction of the ancestor of /saki/ 先 ‘ahead’ (cf. ^{OJ}/saki/), and Martin (1987:745) agrees. Thus, /sae+gir-u/ is etymologically inappropriate for this sub-section of Lyman's article. The second element is obviously related to /kir-u/ 切る ‘to cut’, and Lyman probably thought, reasonably enough, that /sae/ was based on /sae-ru/ 障える ‘to obstruct’, which is listed as a headword in H2. This mistaken etymology is so seductive that the *NKD* entry for /sae+gir-u/ explains why it cannot be correct. Nonetheless, it is semantically a highly plausible folk etymology, although the single kanji (遮) obscures it for ordinary speakers.

tsui-bamu

H2: 啄 to pick up and eat, as a bird

Martin (1987:772) and the *NKD* entry for this example agree that it is etymologically a V+V=V compound. The first element was based on the ancestor of modern Tōkyō /cuk-u/ 突く ‘to thrust, spear’ (adverbial /cuk-i/) and was contracted. The second element was based on the ancestor of modern Tōkyō /ham-u/ 食む ‘to eat’, and the compound used to be pronounced without *rendaku*. The single kanji (啄) and the contraction of the first element make it unlikely that a late-19th-century speaker would have seen this example as a synchronic compound.

uke-gau

H2: 肯 to assent to, receive as true, to believe, avow

Kōjien and *Daijirin* both give archaic (肯ふ) for this item, implying that it is thoroughly obsolete. The *NKD* entry gives the etymological elements as the ancestors of /uke-ru/ 受ける ‘to receive’ and obsolete /ka-u/ 支う ‘to support’, both of which are listed as headwords in H2. The single kanji (肯) obscures the compound etymology, of course, and late-19th-century speakers would have been unlikely to see this example as a synchronic compound.

yase-gareru

H2: 瘠枯 to be emaciated and withered, to be extremely thin and emaciated

Typically written (瘦せ枯れる) (*Kōjien*, *Daijirin*).

3[b]

These examples are from the second paragraph of Lyman's section 3, and I have added “[b]” to make later references to them easier. Lyman described the words listed here as “given by Hepburn as nouns, of which both parts are verbal” (i.e., V+V=N compounds), and by Lyman's count, about half of the words that fit this

description have *rendaku*. Lyman listed only examples with *rendaku*. As noted above in sub-section 3[a], Lyman used the adverbial form (*ren'yōkei* 連用形) of a verb as the citation form both for verbs and for deverbal nouns, and in a few cases, the word that matches Lyman's example is actually listed in H2 only as a verb, not as a noun. I have noted these problematic examples individually.

Aside from these items listed as verbs, there are also a few items in this section that are labeled as adverbs in H2. For example, the part-of-speech label "adv." appears in the H2 entry for *sashi-zume* (H2 romanization ⟨sashi-dzume⟩). Modern Tōkyō /saši+zume/ 差し詰め is usually used as an adverb meaning 'for the time being', although comprehensive dictionaries also give a separate noun definition: 'final stage'. In any case, there is extensive overlap between nouns and the adverbs in Japanese, with many individual lexical items capable of functioning as either (Martin 1975:782–817), and I have not made any attempt to distinguish the two here. Other items in this section, such as *wasure-gachi* (modern Tōkyō /wasure+gači/ 忘れがち 'forgetful'), are adjectival nouns (*keiyō-dōshi* 形容動詞; see Martin 1975:179–183), but the H2 entries for these items have the same part-of-speech label ("n.") as ordinary nouns, and I do not comment on this distinction below.

otoshi-banashi

H2: 落話 a story in which a pun, quibble or play upon words is intended

tatoe-banashi

H2: *tatoe-banashi* 譬話 an illustration, a parable

yari-banashi

H2: same as *yarippanashi*; 遣放 leaving one's work in disorder, without putting things in their proper places; slovely, careless, negligent

NKD lists /yari+banaši/ as a headword, although it gives /yari+hanaši/ as an alterantive pronunciation. It also lists the corresponding verb /yari+banas-u/ as a headword, with /yari+hanas-u/ as an alternative pronunciation. This example is now obsolete, having been ousted by /yari+Qpanaši/, which appears as a separate headword in H2. Adding /Qpanaši/ to a verb base (i.e., an adverbial form) is a productive pattern in modern Tōkyō Japanese (Martin 1975:422–423), and ordinary speakers may not connect this second element to the etymological source verb /hanas-u/ 放す 'to release'.

ai-bore

H2: [listed only as a verb] 相惚 to be in love with each other

Despite the H2 entry, Lyman seems to have treated this example correctly. *NKD* lists only the noun /ai+bore/ and no corresponding verb /ai+bore-ru/ or /ai+hore-ru/. The first element is etymologically related to the modern Tōkyō verb /a-u/ 合う 'to match, agree', but the kanji (相), with no *okurigana*, obscures the connection, and speakers today do not see the relationship. Modern dictionaries list this /ai/ as a headword and define it as a prefix meaning 'mutually, together', and H2 treats it the same way. This prefix-like use was already established in OJ (see the entry for ^{OJ}/api/ in *Jōdai*). In short, this example is etymologically appropriate for this sub-section, but /ai/ is not synchronically verbal.

? ne-bore

H2: [listed only as a verb] 寝惚 to be stupid or bewildered, as when suddenly roused from sleep; to walk in sleep

No headword of the form /nebore/ is listed in *NKD*. The headword for the H2 entry is actually /ne+boke/, Hepburn's citation form for /ne+boke-ru/ 寝惚ける (cf. modern Tōkyō /boke-ru/ 惚ける 'to become senile'), with /ne+bore/ (Hepburn's citation form for /ne+bore-ru/) cited as a synonym. *NKD* lists the verb /ne+hore-ru/ as a headword but gives /ne+bore-ru/ as an alternative pronunciation.

sukashi-bori

H2: 透彫 ornamental carved open-work

uki-bori

H2: embossed carving

Typically written (浮き彫り) (*Kōjien*, *Daijirin*).

(aomi-dachi)

Lyman gave this item in parentheses. H2 does not list a noun headword with this romanization, and there is no headword of the form /aomidači/ in *NKD*. Lyman did not count this item as one of his 99 V+V=N examples, so it is not clear why it appears here. Lyman had "Aomi-DACHI" on the list of verbs in his sub-section 3[a], but this is just his citation form for what is listed above as *aomi-datsu*.

? are-dachi

H2: [listed only as a verb] same as *aradachi*; 荒立 to become enraged, exasperated, irritated, to be stormy, boisterous, rough

NKD lists only the verb /are+tac-u/ as a headword but gives /are+dac-u/ as an alternative pronunciation.

saki-dachi

H2: 先立 the officers who go in the front of a Daimiyo's train

Lyman actually had “suki – ” here, but there is no headword of the form /sukidači/, /sukitači/, /sukidaču/, or /sukidaču/ in *NKD* or in H2. It seems virtually certain that /saki+dači/ is what Lyman intended. *NKD* also lists the corresponding verb /saki+dac-u/ as a headword. Martin (1987:746) and *NKD* agree that the first element of this semantically transparent compound verb is the noun /saki/ 先, so /saki+dači/ clearly does not belong in this sub-section of Lyman's article. (There are verbs with the adverbial form /saki/, but there is no point in considering them here.)

ki-dōshi

H2: 著通 always wearing the same clothes

Typically written (着通し) (*Kōjien*, *Daijirin*). *NKD* also lists the corresponding verb /ki+toHs-u/ as a headword.

kiri-dōshi

H2: 切通 a deep road cut through a mountain

NKD lists /kiri+doHši/ as a headword but gives /kiri+toHši/ as an alternative pronunciation. It also lists the corresponding verb /kiri+toHs-u/ as a headword.

kiri-dori

H2: 切捕 killing and robbing

Typically written (切り取り) or (斬り取り) (*Kōjien*, *Daijirin*). *NKD* lists /kiri+tori/ as a headword, and the entry says that /kiri+dori/ is an old pronunciation. It also lists the corresponding verb /kiri+tor-u/ as a headword (but no alternative pronunciation).

? *kogiri-dori ni*

H2: 小切取 diminishing little by little; taking constantly, little by little

No headword of the form /kogiridori/ or /kogiritori/ is listed in *NKD*.

oshi-dori

H2: 推取 taking by violence or force

Typically written (押し取り) (*Kōjien*; not listed in *Daijirin*). *NKD* lists /oši+tori/ as a headword but gives /oši+dori/ as an alternative pronunciation. It also lists the corresponding verb /oši+tor-u/ as a headword (but no alternative pronunciation).

tsukuri-dori

H2: 作取 keeping all that one produces

uri-dori

H2: 売取 selling something belonging to another and keeping the money

NKD also lists the corresponding verb /uri+tor-u/ as a headword (but no alternative pronunciation).

sashi-zume

H2: *sashi-dzume* 差詰 after all, in the end, must be

tachi-zume

H2: not listed

NKD lists /tači+zume/ 立ち詰め 'standing for a long time' as a headword, and it is exactly the kind of example that belongs in this section, so it may well be the word that Lyman intended.

baitori-gachi

H2: 奪取勝 scrambling for anything, to get all one can

The initial element /bai/ is a reduced form of /ubai/, from the verb /uba-u/ 奪う 'to take by force'. *NKD* lists /bai+dori+gači/ as an alternative pronunciation. The point of this example is the *rendaku* in the final element (cf. /kac-u/ 勝つ 'to win').

? *kane-gachi*

H2: not listed

No headword of the form /kanegači/ or /kanekači/ appears in H3 or in *NKD*, so this item is presumably an error, but I have not been able to come up with a candidate for what Lyman intended here.

itsuwari-gachi

H2 [s.v. *gachi*]: 偽勝 given to lying

Combining a verb with /gači/ is a highly productive morphological pattern in modern Tōkyō Japanese, and the resulting word is usually treated as an adjectival noun (Martin 1975:418). This pattern is typically covered in textbooks for intermediate learners of Japanese as a foreign language (e.g., Miura and McGloin 2008:230), and /gači/, labeled a suffix, appears as a headword in most dictionaries (including H2). Since /gači/ is ordinarily written entirely in *hiragana* today, /icuwari+gači/ would most likely be written 偽りがち. Etymologically, /gači/ is related to the modern Tōkyō verb /kac-u/ 勝つ 'to win' (Martin 1975:419), and it seems to have been common in earlier periods to represent /gači/ as 勝ち. Despite this etymological connection, ordinary speakers today do not see /gači/ as related to this verb, and late-19th-century speakers probably

did not see it either. Thus, V+/gači/ combinations are etymologically but not synchronically appropriate for this sub-section.

okotari-gachi

H2 [s.v. *gachi*]: 怠勝 given to idleness

Typically written 〈怠りがち〉 (*Kōjien* s.v. /okotar-u/ 怠る ‘to neglect’). Lyman actually had “okitari-” here, but this is clearly an error. This example is another instance of the V+/gači/ pattern (see the explanation for *itsuwari-gachi* just above).

wasure-gachi

H2: 忘勝 inclined to forget, a poor memory, forgetful

Typically written 〈忘れがち〉, since this example is another instance of the V+/gači/ pattern (see the explanation for *itsuwari-gachi* above).

kake-gae

H2: *kake-gae* 闕替 any thing which if lost or injured cannot be replaced

Typically written 〈掛け替え〉 (*Kōjien*, *Daijirin*). The H2 definition is actually for the phrase /kake+gae no na-i/ 掛け替えのない ‘irreplaceable’ rather than for /kake+gae/ alone. *NKD* lists /kake+gae/ as a headword but gives /kake+kae/ as an alternative pronunciation. It also lists the corresponding verb /kake+kae-ru/ as a headword (but no alternative pronunciation).

nori-gae

H2: *nori-gae* 乗替 a relay of horses

Modern dictionaries (*Kōjien*, *Daijirin*, *NKD*) list only /nori+kae/ (typically written 〈乗り換え〉 or 〈乗り替え〉) as a headword but note that /nori+gae/ used to be an alternative pronunciation. *NKD* also lists the corresponding verb /nori+kae-ru/ as a headword (but no alternative pronunciation).

ate-gai

H2: 当合 the portion, or share allotted; allowance, allotment

Typically written 〈宛行〉 or 〈充行〉 (*Kōjien*, *Daijirin*). *NKD* also lists the corresponding verb /ate+ga-u/ as a headword (with no alternative pronunciation). H2 also has a separate entry for the verb (with /ate+ga-i/ as its citation form), and Lyman should have included this verb above in his sub-section 3[a]. The first element of this example is obviously related to the verb /ate-ru/ 当てる ‘to allot’. As for the second element, Martin (1975:678) tentatively suggests a connection to modern Tōkyō /ka-u/ 買う ‘to buy’, the ancestor of which also had the meaning ‘to intersect’ and could be used as the second element in $V_1+V_2=V$ compounds meaning ‘to V_1 together, mutually’ (as explained in the *Jōdai* entry for ^{0j}/kap-u/). Given the second kanji 〈合〉 in the H2 entry and 〈行〉 in some

modern dictionaries, it seems likely that late-19th-century speakers could have analyzed /ate+ga-u/ as a V+V=V compound without being able to identify the second element with any existing verb. Some modern dictionaries use hiragana for the second element (e.g., 〈充てがう〉).

oshi-gai

H2: 押買 violently pressing the sale of any thing by one who wishes to purchase

kaeri-gake

H2: *kayeri-gake-ni* 帰次 on returning, on the way back
Typically written 〈帰り掛け〉 (*Kōjien*, *Daijirin*).

kai-gake

H2: 皆掛 the gross weight, including the box or wrappings in which an article is contained

The first element in this word is Sino-Japanese /kai/ 皆 'all'. Since it is not based on a verb, it does not belong in this sub-section.

ki-gake

H2 [s.v. *gake*]: while coming

Typically written 〈来掛け〉 (*Kōjien*, *Daijirin*). Combining a verb with /gake/ seems to have been a productive morphological pattern in the past, and the resulting word is normally combined with the particle /ni/ and used adverbially. This pattern is not productive in modern Tōkyō Japanese, in contrast to the V+/gači/ pattern (see the explanation for *itsuwari-gachi* above), but /gake/, labeled a suffix, appears as a headword in most dictionaries (including H2). It is typical to write /gake/ with a kanji (〈掛け〉), which invites a literate speaker to connect it with the verb /kake-ru/ 掛ける. This connection is etymologically correct, but ordinary modern Tōkyō speakers do not see it. This verb /kake-ru/ has such a wide range of meanings that it is not entirely clear which was the basis for the V+/gake/, but a likely candidate is the meaning 'to begin' for /kake-ru/ used productively as the second element in V+V=V compounds.

nuke-gake

H2: 抜掛 stealing a march on, forestalling others in the market

Typically written 〈抜け駆け〉 (*Kōjien*, *Daijirin*). *NKD* lists the corresponding verb /nuke+gake-ru/ as a headword, but it seems to be a back formation (earliest citation 1957).

omoi-gake-nai

H2: 無掛念 unexpected, unthought of, unlooked for, incidental, chance

Typically written (思い掛けない) (*Kōjien* and *Daijirin* give (思い掛け無い)). Lyman had “*omoi-ni*” here, but this must be an error, since the only item listed in H2 that begins *omoi-gake* is *omoi-gake-nai*.

tasshi-gaki

H2: 達書 a government circular or proclamation

Lyman had “*tasshi-*” here, implying *tasshi-gake*, but this must be an error. No headword of the form /taQšigake/ appears in H2 or in *NKD*. The first element is based on a verb that is itself a compound (cf. modern Tōkyō /taQ+ su-ru/ 達する ‘to notify’, which consists of a Sino-Japanese morpheme followed by /su-ru/ ‘to do’; see the introduction to sub-section 3[c] below for an explanation of such compounds).

tomari-gake

H2: 泊掛 – *ni yuku* to go to any place with the intention of stopping a night or two

This is another example of the V+/gake/ pattern (see the explanation for *ki-gake* above).

tōri-gake

H2 [s.v. *gake*]: while passing

Typically written (通り掛け) (*Kōjien*, *Daijirin*). This is another example of the V+/gake/ pattern (see the explanation for *ki-gake* above).

yuki-gake

H2: 行掛 while going

This is another example of the V+/gake/ pattern (see the explanation for *ki-gake* above). *NKD* also lists /iki+gake/, with a first element based on modern /ik-u/ ‘to go’ rather than archaic /yuk-u/ ‘to go’, as a synonymous headword.

fure-gaki

H2: 触書 a proclamation, a public notice

Lyman actually had “*furi-GAKI*” here, but this must be an error. No such headword appears in H2 or in *NKD*, and *fure-gaki* is almost certainly what Lyman intended.

hashiri-gaki

H2: 走書 fast writing, a running hand

NKD also lists the corresponding verb /haširi+kak-u/ as a headword (but no alternative pronunciation).

hikae-gaki

H2: *hikaye-gaki* 控書 a memorandum, a note, minute, voucher, a duplicate

kiki-gaki

H2: 聞書 a memorandum, or note of what one hears

? *misebi-gaki*

H2: not listed

No headword of the form /misebigaki/ or /misebikaki/ is listed in *NKD*. As Yanaike (1991:76) suggests, it is tempting to see this item as an error for the H2 headword /mise+biraki/ 店開き 'shop opening', but Hepburn did not identify /mise/ as verbal and a late-19th-century speaker would not have seen it as such. Etymologically, however, it is based on the ancestor of the verb /mise-ru/ 見せる 'to show', as noted in the entries for /mise/ in *NKD* and Martin (1987:481).

nijiri-gaki

H2: a slanting mode of hand-writing

Typically written (躡り書き) (*Kōjien, Daijirin*).

nuki-gaki

H2: 抄書 extracts from books, an epitome, abridgment, or abstract of a book or writing

Typically written (抜書き) (*Kōjien, Daijirin*).

soe-gaki

H2: *soye-gaki* 添書 a postscript

tsumori-gaki

H2: 計書 a written estimate

Typically written (積り書き) (*Kōjien, Daijirin*).

wari-gaki

H2: 割書 the small letters in double column, in which notes on the text are written

(ire-gomi)

H2: 入込 mixed, jumbled together

Lyman had this item in parentheses and did not include it in his count of V+V=N examples ending in *-gomi*. As noted above in sub-section 3[a], H2 lists only the noun *ire-gomi* and the verb *ire-komu*. *NKD* lists the noun /ire+komi/ as a headword and gives /ire+gomi/ as an alternative pronunciation, but the entry for the verb /ire+kom-u/ does not mention /ire+gom-u/ as a possible alternative. Lyman should have listed *ire-gomi* here (and only here), without parentheses.

ki-gomi

H2: 着込 a kind of padded garment worn in winter under armor

NKD lists /ki+gomi/ as a headword but gives /ki+komi/ as an alternative pronunciation. It also lists the corresponding verb /ki+kom-u/ as a headword (but no alternative pronunciation).

ue-gomi

H2: *uye-gomi* 植込 a flower garden, nursery

NKD lists only /ue+komi/ as a headword but gives /ue+gomi/ as an alternative pronunciation. It also lists the corresponding verb /ue+kom-u/ as a headword (but no alternative pronunciation).

? *hanare-jini*

H2: not listed

No headword of the form /hanarejini/ appears in H3 or in *NKD*, so this item is presumably an error. It is possible that Lyman noted down *hanare-jima* (cf. modern Tōkyō /hanare+jima/ 離れ島 ‘solitary island’) at some point and later misread it as *hanare-jini*. The word /hanare+jima/ would belong in Lyman’s “other” category in his sub-section 4(e), but he listed only examples without *rendaku* there.

kubire-jini

H2: 縊死 suicide by hanging

NKD also lists the corresponding verb /kubire+jin-u/ as a headword.

obore-jini

H2: 溺死 drowned

NKD also lists the corresponding verb /obore+šin-u/ as a headword (but no alternative pronunciation).

tachi-jini

H2: not listed

NKD lists /tači+jini/ 立ち死に ‘dying standing up’ as a headword, and this is probably what Lyman intended here. *NKD* also lists the corresponding verb /tači+šin-u/ as a headword (but no alternative pronunciation).

ue-jini

H2: *uye-jini* 飢死 death by starvation

NKD also lists the corresponding verb /ue+šin-u/ as a headword, and the entry gives /ue+jin-u/ as an alternative pronunciation.

yake-jini

H2: 焼死 burned to death

NKD also lists the corresponding verb /yake+šin-u/ as a headword (but no alternative pronunciation).

mi-zame

H2: 見冷 losing one's ardor, or any thing by seeing it, to become stale, to lose its novelty or power to please

Typically written (見醒め) (*Kōjien, Daijirin*).

ne-zame

H2: 寢覚 awake

The corresponding verb /ne+zame-ru/ is listed as a headword *NKD* and appears above in Lyman's sub-section 3[a].

maki-zoe

H2: *maki-zoye* 連累 implicated, or involved in trouble through the offence of another

Typically written (巻き添え) (*Kōjien, Daijirin*).

sashi-zoe

H2: *sashi-zoye* 差添 the small sword

NKD also lists the corresponding verb /saši+soe-ru/ 差し添える 'to add between' as a headword (with no alternative pronunciation). This verb is obsolete and does not appear in H2.

de-zome

H2: not listed

NKD lists /de+zome/ 出初め 'going out for the first time' as a headword, and this is probably what Lyman intended here.

kaki-zome

H2: 書初 the first writing of the new year

nori-zome

H2: 納初 the first ride of the new year

Typically written (乗り初め) (*Kōjien, Daijirin*).

hanare-banare

H2: 離離 separated, apart, scattered

This item involves reduplication (cf. the modern Tōkyō verb /hanare-ru/ 離れる 'to become separated'), but Lyman listed his reduplicated V+V=N examples here in sub-section 3[b] rather than below in sub-section 4(b) because he listed only reduplicated examples without *rendaku* in 4(b). There is a brief discussion of this and the following five items in §7.5.3.

hare-bare

H2: 晴晴 clear, bright, open, unclouded, easy in mind

This item involves reduplication (cf. the modern Tōkyō verb /hare-ru/ 晴れる ‘to clear up’; see the explanation for *hanare-banare* above).

kare-gare

H2: 枯枯 withered, dried, empty

This item involves reduplication (cf. the modern Tōkyō verb /kare-ru/ 枯れる ‘to wither’; see the explanation for *hanare-banare* above).

kire-gire

H2: 断続 pieces

Typically written 〈切れ切れ〉 (*Kōjien*, *Daijirin*). This item involves reduplication (cf. the modern Tōkyō verb /kire-ru/ 切れる ‘to be cut’; see the explanation for *hanare-banare* above).

shimi-jimi to

H2: in a penetratingly, or deeply affecting manner

Typically written 〈染み染みと〉 (*Kōjien*) or 〈しみじみと〉 (*Daijirin*). Historically, this item involves reduplication (cf. the modern Tōkyō verb /šimi-ru/ 染みる ‘to soak into’; see the explanation for *hanare-banare* above), although most present-day speakers do not relate it to the verb stem (see §7.5.2).

tae-dae ni

H2: *taye-daye-ni* 絶 hardly, barely, scarcely; almost exhausted or finished

Typically written 〈絶え絶えに〉 (*Kōjien*, *Daijirin*). This item involves reduplication (cf. the modern Tōkyō verb /tae-ru/ 絶える ‘to cease’; see the explanation for *hanare-banare* above).

ake-gure

H2: 昧爽 the darkness just before the day begins to break

Typically written 〈明け暗れ〉 (*Kōjien*, *Daijirin*).

ai-biki

H2: 相引 a mutual retreat or withdrawal

This example is etymologically appropriate for this sub-section, but /ai/ is not synchronically verbal (see the explanation for *ai-bore* above in this sub-section).

? *hanare-zakari*

H2: not listed

No headword of the form /hanarezakari/ appears in H3 or in *NKD*, so this item is presumably an error, but I have not been able to come up with a candidate for what Lyman intended here. It is possible that Lyman mistakenly noted down *hanare-zakari* instead of *hana-zakari*, but /hana+zakari/ 花盛り ‘flowers

in full bloom' does not belong in this sub-section. It appears as a headword in H2, and the second element is based on a verb (cf. /sakar-u/ 'to flourish'), but the first element /hana/ 'flower' is an underived noun.

kake-beri

H2: 量減 deficiency in weight

Typically written (掛減り) (*Kōjien*, *Daijirin*).

kake-zukuri

H2: *kake-dzukuri* 懸作 a house built on piles on a slope

This item appears as a headword both in *Kōjien* and in *Daijirin*. *NKD* does not list /kake+zukuri/ or /kake+cukuri/, although it does list the corresponding verb /kake+cukur-u/ as a headword (but no alternative pronunciation).

kai-gakari

H2: 買掛 buying on credit

NKD also lists the corresponding verb /kai+gakar-u/ as a headword.

kai-gui

H2: 買食 buying something to eat

kashi-zuki

H2: *kashidzuki* a nurse, waiting maid, attendant, a servant

Typically written (傅き) (*Kōjien*, *Daijirin*). *NKD* also lists the corresponding verb /kašizuk-u/ 傅く 'to attend, wait on' as a headword, and the pre-1946 kana spelling (かしづく) is consistent with an etymology involving the ancestor of /cuk-u/ 付く 'to become attached' as the second element. Martin (1987:705) tentatively relates the first element to the ancestor of /kashiko-i/ 賢い 'clever', with the stem truncated and presumably carrying the now obsolete meaning 'awesome'. If this hypothesis is correct, this example is not a V+V=N compound etymologically. The single kanji used to write it obscures its compound origin, and the fact that the modern kana spelling is (かしずく), with (ず) (*su*^h) rather than (づ) (*tsu*^h), means that the reformers did not see it as a synchronic compound (see §1.1).

kiri-bari

H2: 切張 cutting the torn paper from a screen and repairing by pasting new paper over

NKD lists /kiri+bari/ as a headword but gives /kiri+hari/ as an alternative pronunciation.

machi-buse

H2: 待伏 lying in wait, or in ambush

NKD also lists the corresponding verb /mači+buse-ru/ as a headword.

maki-gari

H2: 卷狩 hunting by surrounding a large district, and gradually driving the animals into the centre

mi-date

H2: 見立 appearance calculated to strike the eye, or arrest attention; show, display, looks

NKD lists /mi+date/ as a headword but gives /mi+tate/ as an alternative pronunciation. *NKD* also lists the corresponding verb /mi+tate-ru/ as a headword (with no alternative pronunciation), but none of the attested meanings of the verb match the noun.

mikake-daoshi

H2: 見掛倒 any thing different from what it appears, false or deceptive appearance

name-ge

H2: 無礼 rudeness, impoliteness

Typically written (無礼げ) (*Kōjien*) or (無礼気) (*Daijirin*). The kanji (無礼) representing /name/ are etymologically and morphologically misleading, but the first element in this word can certainly be construed as verbal. According to the *NKD* entry for /name-ru/ 舐める ‘to lick’, present-day speakers feel that /name-ru/ ‘to regard with contempt’ is just a figurative use of this same verb, despite the fact that the two meanings are etymologically different (Martin 1987:386). There is, however, no plausible verbal etymology for the second element; it presumably goes back to (etymologically Sino-Japanese) /ke/~ge/ 気 ‘feeling’ (Martin 1987:447). It is not clear why Lyman listed this example.

ne-bie

H2: *ne-biye* 寝冷 being cold while asleep, or lying down

ne-boke

H2: [listed only as a verb] 寝惚 to be stupid or bewildered, as when suddenly roused from sleep; to walk in sleep

NKD lists both the noun /ne+boke/ and the corresponding verb /ne+boke-ru/ as headwords. According to the *NKD* entry for /boke-ru/ 惚ける ‘to become mentally slow’, the ancestor of this verb began with a voiceless obstruent, but only the form /boke-ru/ remains in use today. Consequently, the /b/ in /ne+boke/ is not an instance of *rendaku*. There is, however, a synonym /hoHke-ru/ 惚ける ‘to become mentally slow; to become engrossed’, which is typically written with the same kanji as /boke-ru/, and it appears as a headword in H2,

although Hepburn's definition reflects a sense ('to become frayed') that is now obsolete. According to the *NKD* entry for /hoHke-ru/, its etymological relationship to /boke-ru/ is not entirely clear, but it could be that Lyman connected the second element of /ne+boke/ with /hoHke-ru/ by overlooking the macron in the the H2 romanization (hōkeru).

ne-zumai

H2: *nedzumai* manner or posture in sleeping

Typically written (寝住ゝ) (*Kōjien*; not listed in *Daijirin*).

ne-gaeri

H2: *ne-gaeri* 寝反 changing one's position in sleep

Typically written (寝返り) (*Kōjien*, *Daijirin*). *NKD* also lists the corresponding verb /ne+gae-ru/ as a headword and gives /ne+kae-ru/ as an alternative pronunciation.

nuri-gome

H2: 塗籠 a fireproof store-house

NKD also lists the corresponding verb /nuri+kome-ru/ as a headword (but no alternative pronunciation).

okure-base

H2: 後走 being late or behind-hand to run or hurry; an afterthought

Typically written (後れ馳せ) (*Kōjien*, *Daijirin*). Lyman had "okurebuse" here, but this must be an error. No such headword appears in H2 or *NKD*.

oki-zari

H2: 置去 leaving and going away, desertion of one's family, forsaking

NKD lists /oki+zari/ as a headword, but the entry gives /oki+sari/ as an alternative pronunciation. *NKD* also lists the corresponding verb /oki+sar-u/ as a headword but gives /oki+zar-u/ as an alternative pronunciation.

soi-bushi

H2: 添臥 sleeping together

NKD also lists the corresponding verb /soi+fus-u/ as a headword (but no alternative pronunciation).

tachi-gare

H2: 立枯 a withered tree, still standing

NKD also lists the corresponding verb /tači+gare-ru/ as a headword.

tachi-giki

H2: 立聞 standing to listen, listening stealthily

NKD also lists the corresponding verb /tači+gik-u/ as a headword, and the entry gives /tači+kik-u/ as an older pronunciation.

tachi-gie

H2: *tachi-giye* 立消 quickly extinguished

NKD also lists the corresponding verb /tači+gie-ru/ as a headword.

tachi-gurami

H2: 眩暈 sudden vertigo or dizziness on rising up

Typically written 〈立ち暗み〉 (*Kōjien*, *Daijirin*). Only /tači+kurami/ is listed as a headword in *NKD*, but the entry gives /tači+gurami/ as an alternative pronunciation. *NKD* also lists the corresponding verb /tači+kuram-u/ as a headword but gives /tači+guram-u/ as an alternative pronunciation.

? *tachi-giri*

H2: not listed

No noun of the form /tačigiri/ or verb of the form /tačigiru/ is listed as a headword in *NKD*. *NKD* does list the obscure noun /tači+kiri/ 裁ち切り ‘cut-off printing’ as a headword but gives no alternative pronunciation. It also lists two verbs of the form /tačikiru/ as headwords but gives no alternative pronunciation for either: /tači+kir-u/ 断ち切る ‘to cut off’ and /tači+kir-u/ 立ち切る ‘to remain standing’.

tataki-barai

H2: flogging – as a punishment

Typically written 〈敲き払い〉 (*Kōjien*, *Daijirin*).

utte-gawashi ni

H2: alternately

This item is listed as a headword (with no kanji) in *NKD*, but the only citation is from H2. *Daijirin* lists /uQte+gaeši/ 打って返し but directs the user to synonymous /uQte+gae/ 打って替え ‘replacement’. The latter also appears as a headword in *NKD* and in *Kōjien*. The first element in all these words is etymologically the gerund /uQ-te/ of /uc-u/ 打つ ‘to hit’, so none of these examples is an ordinary V+V=N compound.

wai-dame

H2: 差別 difference, distinction

Typically written 〈弁別〉 (*Kōjien*, *Daijirin*). *NKD* lists only /wai+tame/ as a headword, but the entry gives /wai+dame/ as alternative pronunciation. According to the *NKD* entry for this example, it was derived from a V+V=V compound verb that is obsolete (cf. ^{OJ}/waki+tam-u/ ‘to distinguish’). The *NKD* entry for this verb says that the first element was based on an obsolete verb

related to modern Tōkyō /wake-ru/ 分ける ‘to divide’ (cf. ^{OJ}/wak-u/ ‘to divide’), but the /k/ in the derived noun (cf. ^{OJ}/waki+tame/) was later lost. The second element was the ancestor of modern Tōkyō /tame-ru/ 矯める ‘to straighten, correct’ (cf. ^{OJ}/tam-u/). Given the etymologically misleading kanji used to write /wai+tame/~ /wai+dame/, it is highly unlikely that a late-19th-century speaker would have seen either /wai/ or /dame/ as verbal.

yoi-guru

H2: 酔狂 drunk and crazy

yuki-domari

H2: 行止 the end of a road, or end of one's journey

NKD also lists the corresponding verb /yuki+domar-u/ as a headword and gives /yuki+tomar-u/ as an alternative pronunciation.

3[c]

The 31 examples in this sub-section (the third paragraph of Lyman's section 3) are mostly compounds that combine a single Sino-Japanese morpheme with /su-ru/ する ‘to do’ and have rendaku. I have added “[c]” to make references to this sub-section easier.

The rendaku partner of /s/ is /z/, and since the hiragana spelling of /zuru/ in an example like /šiN+zu-ru/ 信ずる ‘to believe’ had ⟨ず⟩ (the letter for /su/ plus the *dakuten* voicing diacritic) even before the 1946 spelling reform, we might expect the romanization ⟨zuru⟩ in H2. But H2 consistently romanizes /zu/ as ⟨dzu⟩, regardless of kana spelling, so the examples in this section end with ⟨dzuru⟩ in H2, as in ⟨shindzuru⟩. As explained in §1.1, there is no phonemic distinction between [z] and [dz] in present-day Tōkyō, and according to Lyman's 1878 article, there was no such distinction in late-19th-century Tōkyō either, as we saw in §4.6. As noted in §4.6 and again in §5.1, H3 consistently has ⟨zu⟩ for /zu/, so the examples below all appear in H3 with with ⟨zuru⟩ instead of ⟨dzuru⟩, but Lyman retained ⟨dzu⟩ in 1894.

The examples that Lyman listed in this sub-section have an alternative, more colloquial conclusive form (*shūshikei* 終止形), ending in /jiru/ (e.g., /šiN+jī-ru/ 信じる ‘to believe’) rather than /zuru/, and the forms with /jiru/ are normally used in the modern spoken language (Martin 1975:289). As already explained above, modern dictionaries use the conclusive as the citation form for a verb, but as noted earlier in connection with the examples in sub-section 3[a], Hepburn used the adverbial form (*ren'yōkei* 連用形). Regardless of whether the conclusive is the colloquial form or the written-style form, the adverbial form is the

same (e.g., /šiN+ji/ 信じ for /šiN+ji-ru/ or /šiN+zu-ru/). Because of these complications, the H2 entries for the words in this sub-section are rather messy. For example, the H2 entry for /šiN+ji-ru/ begins: “SHINJI, -dzuru, or -ru, -ta, シンズル”. All of this explains why Lyman listed these words as he did, with ⟨dzuru⟩ in parentheses, as in “shinji (dzuru).” In some cases, Lyman also included the conclusive-form ending for the colloquial form, as in “shooji (ru, dzuru)” for /šoH+ji-ru/ 生じる ‘to produce’. I have no explanation for why he did this in some cases but not in others. In just one case (“henji”), Lyman did not include the written-style conclusive form in parentheses, presumably because it does not appear in the H2 entry. But /heN+zu-ru/ 変ずる ‘to change’ is an attested form, so ⟨hen-zuru⟩ is given in parentheses on the list below.

I do not cite the H2 romanization of the second element ((ji) or ⟨dzuru⟩) for any of the examples in this sub-section. I give the H2 romanization of the first element only when it differs from the romanization I use. For example, the H2 entry for /eN+ji-ru/ 怨じる (defined as ‘to hate, to be displeased or offended with’) begins “YENJI”, and I cite ⟨yen-⟩ as the H2 romanization because my romanization is ⟨en-jiru⟩.

ben-jiru (ben-zuru)

H2: ^[1] 弁 (辨) to discriminate, distinguish

^[2] 弁 (辯) to explain, to expound, to do, transact

The modern character form ⟨弁⟩ has replaced both ⟨辨⟩ and ⟨辯⟩, as well as ⟨辯⟩.

dan-jiru (dan-zuru)

H2: 談 to speak, talk, say

The H2 entry does not give the expected romanization ⟨dan-dzuru⟩, but this was just an oversight, since it gives the katakana ⟨ダンズル⟩.

en-jiru (en-zuru)

H2: yen- 怨 to hate, to be displeased or offended with

gaen-jiru (gaen-zuru)

H2: gayen- 肯 to consent, assent, be willing

A single Sino-Japanese morpheme cannot have the form /gaen/, and the *NKD* entry for this example describes it as a contraction of phrasal ^{EMJ}/kape-ni s-u/, which is also attested and appears as a separate headword in *NKD*, defined as ‘to disagree’. According to the *NKD* entry for /gaen+zu-ru/, the initial /g/ is due to the fact that its ancestor could directly follow the adverbial form of a verb and underwent *rendaku* in that position. Both the *NKD* entry and Martin (1987:71) discuss the reversal of the originally negative meaning. Lyman may

have thought that /gaeN/ was composed of two Sino-Japanese morphemes, since /ga/ and /eN/ are both possible Sino-Japanese morph shapes, but there are no attested examples of the form SJ+SJ+/zu-ru/ (Vance and Asai 2016:127).

gen-jiru (*gen-zuru*)

H2: ^[1] 現 to be seen, to appear, to be visible, manifested

^[2] 減 to lessen, diminish, retrench, curtail, abbreviate, to wane

han-jiru (*han-zuru*)

H2: 判 to judge, criticise, to solve, interpret

hen-jiru (*hen-zuru*)

H2: 變 to change, alter, transform, to metamorphose

As noted above, the H2 entry does not give /heN+zu-ru/, but it is an attested form, listed as a headword in *Kōjien*, *Daijirin*, and *NKD*.

jun-jiru (*jun-zuru*)

H2: 準 to be alike or resemble, adjust, equalize, proportion; adapt, suit

ken-jiru (*ken-zuru*)

H2: 獻 to present, offer or give to a superior

kun-jiru (*kun-zuru*)

H2: ^[1] 薰 to send forth a perfume

^[2] 訓 to give the Japanese equivalent of a Chinese character

men-jiru (*men-zuru*)

H2: 免 to allow, excuse, forgive, exempt; to remit, dispense with; abate, as punishment; remove from office

nen-jiru (*nen-zuru*)

H2: 念 to repeat or recite prayers, to pray

nin-jiru (*nin-zuru*)

H2: 任 to appoint to, or invest with an office; to commit or leave to the will of another, to confide to

ron-jiru (*ron-zuru*)

H2: 論 to discuss, to discourse on, debate, argue, dispute

san-jiru (*san-zuru*)

H2: ^[1] 散 to scatter; to be dispersed, dissipated

^[2] 參 to come, to go

sen-jiru (*sen-zuru*)

H2: 煎 to boil, to make a decoction

shin-jiru (shin-zuru)

H2: 信 to believe, to regard as true, to believe in, to confide in, trust in

son-jiru (son-zuru)

H2: 損 to injure, hurt, damage, spoil; to mistake, to do erroneously

soran-jiru (soran-zuru)

H2: 誦 to recite from memory, to commit to memory

The *NKD* entry says E1 originated as a contraction of ^{LMJ}/sora ni/, with ^{LMJ}/sora/ ‘sky’ used figuratively, as in the modern Tōkyō idiom /sora de oboe-ru/ ‘learn by rote’.

tan-jiru (tan-zuru)

H2: ^[1] 歎 to sigh, to lament, mourn

^[2] 彈 to play on a stringed instrument, as the harp

NKD lists only /daN+jī-ru/ as a headword for this second item, but the entry gives /taN+jī-ru/ as an alternative pronunciation. The kanji (彈) is used to write both /taN/ and synonymous /daN/ (i.e., two morphemes that constitute a Sino-Japanese doublet; see §7.3.3).

ten-jiru (ten-zuru)

H2: 転 to change, to vary, alter

zon-jiru (zon-zuru)

H2: 存 to think, to know, a polite word

chō-jiru (chō-zuru)

H2: 長 to grow long or large, grow up, to increase, to excel, become great, surpass, to be more and more addicted to

dōji-ru (dō-zuru)

H2: 動 to move, affect, influence

hō-jiru (hō-zuru)

H2: ^[1] 報 to repay, requite, to recompense, to avenge; to answer; to report, tell, proclaim, publish

^[2] 崩 to die (used only of the *Mikado*)

^[3] 焙 to roast, to parch, or fire, as tea

jō-jiru (jō-zuru)

H2: 乘 to ride

kō-jiru (kō-zuru)

H2: to increase, grow more severe, to be more confirmed, to be more addicted to

Typically written 高じる (Kōjien, Daijirin).

ō-jiru (ō-zuru)

H2: 応 to accord with, agree, suit, correspond; to be proper, meet, appropriate, becoming; to respond to, comply with, to obey

shō-jiru (shō-zuru)

H2: 生 to produce, beget, bring-forth, bear; to create, make, to cause to exist or arise, develop, be manifested

tō-jiru (tō-zuru)

H2: 投 to throw, cast, toss

ei-jiru (ei-zuru)

H2: ^[1] yei- 詠 to sing

^[2] yei- 映 to reflect, as a mirror; to shine

3[d]

The examples in this sub-section (the fourth paragraph of Lyman's section 3), like those in sub-section 3[c] just above, are mostly compounds that combine a single Sino-Japanese morpheme with /su-ru/ する 'to do', but these examples do not have rendaku. I have added "[d]" to make references to this sub-section easier. In the first 11 of these examples, the Sino-Japanese morpheme is realized with a final moraic obstruent /Q/, and since /Q/ is spelled in kana with the letter for /cu/ (〈つ〉 or 〈ツ〉), reduced in size in modern spelling but not in pre-1946 spelling), Lyman described these examples as "words compounded with Chinese ones ending in *tsu* and the verbal ending *shi* (*suru*)." As explained in §7.4.7, these examples are beside the point, since rendaku is impossible immediately following /Q/. The last two examples in this sub-section do not have /Q/, and it is not clear why Lyman chose to list them here.

bes-shite

H2: 別而 especially, particularly

Typically written 別して (Kōjien, Daijirin). This word is used as an adverb. It seems safe to say that the second element is etymologically the gerund of the verb /su-ru/ 'to do', but the hypothetical corresponding verb /beQ+su-ru/ is not listed as a headword in *NKD*.

es-suru

H2: *yes-suru* 謁 to visit a superior

kes-suru

H2: 決 to settle, decide, determine

Lyman had “shite” in parentheses following this item on his list, presumably referring to the adverb /keQ+ši-te/ 決して ‘by no means’, which H2 lists as a separate headword. Consequently, we can assume that Lyman did not intend the other verb listed in H2 with the same citation form (H2: “*kesshi* 結 to be constipated”).

kus-suru

H2: 屈 to yield, submit, to succumb, to give up

res-suru

H2: 列 to arrange in order, to rank with, to have a certain grade or order

ses-suru

H2: ^[1] 撰 to manage, direct, control

^[2] 接 to join, connect, to continue, abut upon

sos-suru

H2: 率 to lead, command, or head an army

tas-suru

H2: 達 to be thoroughly versed, expert or proficient in; to reach, attain to; to inform, communicate

tes-suru

H2: 徹 to penetrate, pierce through, to affect deeply

us-suru

H2: 鬱 to oppress, make gloomy, make dull

zes-suru

H2: 絶 to be cut off, destroyed, exterminated, to come to an end

ge-seru

H2: 解 to understand, comprehend, know

This is etymologically a potential form, although it appears as a headword in *NKD*. The basic verb is the example just below. Martin (1975:301) explains how potential forms are derived from compounds that combine a single Sino-Japanese morpheme with /su-ru/.

ge-su

H2: 解 to unloose, to dissipate, disperse, dispel, to stop, to explain, to comment on

Lyman had “geshi” here, and the entry in H2 begins “GESHI, *-suru*, *-ta*,” implying that the modern citation form (the conclusive form) should be /ge+

su-ru/. *NKD* does not list this obsolete verb as a headword but mentions it as the base verb in the entry for /geseru/ (the example just above on Lyman's list). However, this *NKD* entry gives only the classical conclusive form /ge+s-u/, not the form /ge+su-ru/ that would be its modern counterpart.

3[e]

Lyman described the examples in this sub-section (the fifth paragraph of his section 3) as “cases which, though given by Hepburn as compounds, are really words in grammatical connection without ellipsis or contraction.” We do not expect *rendaku* in such phrasal vocabulary items, but Lyman cited the examples here as “six apparent exceptions.” I have added “[e]” to make references to these examples easier. The comments following each example are based on the discussion in some previous work (Vance 2007a:164–166).

ama-no-gawa

H2: 天漢 the milky way

Typically written 〈天の川〉 or 〈天の河〉 (*Kōjien*, *Daijirin*). Lyman (1894:165) suggests that /no/ in /ama+no+gawa/ might be etymologically identical to /no/ 野 ‘prairie’, but they correspond to different OJ syllables: *otsu-rui* 乙類^{OJ}/no/ vs. *kō-nui* 甲類^{OJ}/nwo/. Among the many accounts of the OJ *kō-otsu* distinctions are Hashimoto (1949), Lange (1973), Miyake (2003), and Frellesvig (2010:26–34).

michi-no-be

H2: 道辺 side of the road, the vicinity of a road

Typically written 〈道の辺〉 (*Kōjien*, *Daijirin*). The corresponding Old Japanese phrase lacked *rendaku*, as expected (^{OJ}/miti+no+pye/), and the oldest *NKD* citation with /b/ is the headword in the 1603–04 Japanese-Portuguese dictionary (Doi et al. 1980). The modern Tōkyō form of the second noun would be /he/, and *NKD* lists /he/ ‘vicinity, side’ as a headword, but it does not exist as an independent word. In fact, according to the Jōdai entry for ^{OJ}/pye/, it was already “suffix-like” in OJ. We see one modern Tōkyō descendant of this obsolete noun in words like /umi+be/ 海辺 ‘seashore’ (cf. /umi/ ‘sea’) and another in words like /širi+e/ 後方 ‘rearward’ (cf. /širi/ ‘rear’). The /e/ in the second example is the result of the initial consonant of the second element in a compound (cf. ^{OJ}/siri+pye/) being treated as if it were morph-medial and undergoing a well-known series of changes that lead to its complete loss: [pje]>[pe]>[βe]>[we]>[e] (Frellesvig 2010: 201–205; see also the brief discussion in the introduction to sub-section 4(c) below). Ogura (1910:44–45) also discussed examples like /širi+e/ (see §6.2 and Chapter 6 note 169), of which there are very few. Present-day speakers do not see

any connection between the /be/ in /umi+be/ and the /e/ in /širi+e/. To sum up, there are no examples of modern Tōkyō /he/ ‘vicinity, side’ or its EMJ ancestor either as an independent word or as the second element of any compound, and as a result, there has long been no basis for construing the /b/ in examples like /umi+be/ as an instance of *rendaku* (Vance and Asai 2016:135–136). A natural response to this situation was to take /be/ as the basic form of the morpheme in question and extend it to phrasal examples like the ancestor of /miči+no+be/. The same kind of thing has happened in the case of modern Tōkyō /gawa/ 側 ‘side’ (see the comments on *kata-kawa* in sub-section 4(e) below).

nani-gana

H2: 何ガナ something

Although H2 lists *nani-gana* as a headword, the entry provides only a cross-reference to *gana*. The entry for *gana* contains an example sentence in which *nani-gana* is translated as ‘something’. The H2 entry for /gana/ (which is now obsolete) explains it as the result of *rendaku* having applied to the combination of the interrogative particle /ka/ and the desiderative (more accurately, exclamatory) particle /na/, and the *NKD* entry for /gana/ essentially agrees. Despite the etymology, however, it seems very unlikely that late-19th-century speakers would have seen a connection between the first syllable of /gana/ and interrogative /ka/.

osoi-ba

H2: 齶 the wisdom teeth

This example is obsolete, but it is listed as a headword in *NKD*, and the kanji representations provided are 齶 (齶齒) and 齶齒 (齶齒). The *NKD* definition is ‘a tooth that grows in behind or beside an existing tooth and ends up overlapping with it’ (not ‘wisdom tooth’), and it gives /ya+e+ba/ 八重齒 ‘crooked tooth’ as a synonym. For this word to be relevant here, Lyman must have taken it to be a combination of the adjective /oso-i/ 遅い ‘late’ and the *rendaku* allomorph of the noun /ha/ 齒 ‘tooth’, but the pre-1946 kana spelling (おそひば) is inconsistent with this analysis, since the pre-1946 spelling of the adjective was (おそい). The kanji representation (齶齒) suggests that the first element is etymologically connected with the verb /oso-u/ 襲う ‘to assail, strike’, the adverbial form of which had the pre-1946 kana spelling (おそひ). Incidentally, *NKD* also lists synonymous /oso+ba/ 齶齒, and H3 gives it as an alternative pronunciation in the entry headed by *osoi-ba*. H3 also has an improved definition (“irregular tooth, wisdom tooth”). The first element of /oso+ba/ matches the root of the adjective /oso-i/, but /oso+ba/ cannot be construed as “words in grammatical connection without ellipsis or contraction.” In any case, it is not impossible that late-19th-century speakers folk-etymologized /osoi+ba/ as consisting of an adjective followed by a noun, despite the anomaly of *rendaku* in such a combination.

? *sai-no-gawara*

H2: 塞河原 the place in Hades to which to souls of children go

According to the entry in *NKD*, only /sai no kawara/, without *rendaku*, is attested.

una-bara

H2: 海原 the wide sea

Martin (1987:562) tentatively accepts the connection with /umi/ 海 'ocean' and /hara/ 原 'field' implied by the kanji, but Unger (2009:112) proposes that /una/ is etymologically the same as /une/ 畝 'ridge between furrows' (see the discussion of covered-form and exposed-form vowels in §7.2.3), hypothesizing an earlier meaning 'wave', and that /bara/ is a borrowing from Old Korean. The OJ counterpart of /una+bara/ is attested, but without *rendaku* (^{OJ}/una+para/), and *Jōdai* lists ^{OJ}/una/ as a headword, describing it as a combining form that occurs instead of ^{OJ}/umi/ as a first element in some compounds. Not surprisingly, the other compounds that begin with ^{OJ}/una/ are semantically consistent with a first element that means 'waves' instead of 'ocean'. In any case, it is not clear why Lyman thought that /una+bara/ was a phrase. Hepburn gave *umi no hara* in parentheses preceding his definition, and if this were taken as an etymology, /una+bara/ would have to be some kind of contraction. (H2 actually has *umi ni hara*, but this is clearly a misprint, since both H1 and H3 have *umi no hara*.) Perhaps Lyman took /na/ as a copula, but this is just a guess. Whatever Lyman may have had in mind, it seems very unlikely that late-19th-century speakers thought of /una/ as more than a single morph.

4(a)

Lyman listed several groups of compounds in his section 4. He gave a total count of 1,000 with *rendaku* and 2,220 without, but he listed only those without *rendaku*. The first group, here in sub-section 4(a), contains items that Lyman described as having "verbal endings," and most of these are two-element compounds with a noun as first element. Most of these compounds are themselves nouns (N+V=N), as in the case of /ame+furi/ 雨降り 'rainy weather' (cf. the noun /ame/ 'rain' and the verb /fur-u/ 'to fall'). A few are verbs (N+V=V), as in the case of /koto+kire-ru/ 事切れる 'to end' (cf. the noun /koto/ 'matter' and the verb /kire-ru/ 'to be cut'). As noted above, Lyman used the adverbial form (*ren'yōkei* 連用形) to cite verbs, so we cannot tell just by looking at an example here in sub-section 4(a) whether he intended it as a noun or as a verb. When the example is listed in H2 only as a verb, I have supplied the modern citation

form, that is, the conclusive form (*shūshikei* 終止形), instead. In a few cases, H2 lists both a verb and a noun corresponding to Lyman's example. I have noted these cases individually.

charumera-fuki

H2 [s.v. *charumera*]: 喇叭吹 a trumpeter

The initial element in this example is a loan from Portuguese/Spanish (*NKD*) and means 'vendor's flute' in modern Tōkyō. It is typically written in katakana: 〈チャルメラ〉 (*Kōjien*, *Daijirin*). The *NKD* entry gives 〈哨呐〉 and 〈南蛮笛〉 as attested kanji spellings. The kanji 〈喇叭〉 in the H2 entry are used to write /raQpa/ 'bugle', a word of uncertain etymology (*NKD*, *Daijirin*). The second element in this example is derived from the verb /fuk-u/ 吹く 'to blow', which is the ordinary verb for denoting the playing of a wind instrument. This example does not appear in *NKD*, either as a headword or under the entry for *charumera*, but the word-formation pattern involved is productive, and there is no doubt about what Lyman intended.

furo-fuki

H2: 風呂吹 a kind of food made of boiled radishes

This example is semantically opaque but easily analyzable. According to the *NKD* entry, the more literal meaning 'scraping dirt off someone in a bath' (cf. /furo/ 'bath') is older, so the current meaning presumably originated as a figurative use. Despite the usual third kanji 〈吹〉, /fuk-u/ 拭く 'to wipe' seems more plausible than /fuk-u/ 吹く 'to blow' as the source of the second element.

hai-fuki

H2: 灰吹 a section of bamboo used for blowing the tobacco ashes into

hora-fuki

H2: 法螺吹 one who exaggerates; a blower

kane-fuki

H2: 金吹 a metallurgist

mizu-fuki

H2: *midzu-fuki* 噴壺 a utensil for watering plants, a watering pot

Typically written 〈水吹〉 (*NKD*).

sora-uso-fuku

H2 [s.v. *sora*]: whistling in affected ignorance

Typically written 〈空嘯〉 (*Kōjien*, *Daijirin*). Despite the nominal definition, the form cited in the H2 entry ("–usofuku") implies that the word is a verb. Only /sora+uso+buk-u/, with /b/, appears as a headword in *NKD*, but the entry

gives /sora+uso+fuk-u/, with /f/, as an older pronunciation. No corresponding noun is listed in *NKD*. What is relevant here, of course, is that the last two elements of this three-element example form a constituent with the structure N+V=V. (The other constituent, /sora/ 'sky', is used figuratively to mean 'false; unaccountable; ineffective'.) The form /uso+buk-u/ 嘯く 'to talk big; to brazenly claim ignorance' appears as a headword in H2 and has *rendaku*, although the *NKD* entry says that an older form without *rendaku* is also attested. Martin (1987:780) accepts the obvious connection with /uso/ 嘘 'falsehood' for the first element of /uso+buk-u/, and he concedes that one possibility for the second element is a connection with /fuk-u/ 吹く 'to blow', which is what the *NKD* entry says. The situation is complicated by the fact that the obsolete N+N=N compound /sora+uso/ 'whistling; casual lying' is also attested. The *NKD* entry for /sora+uso+buk-u/ suggests that a reanalysis of the constituent structure may have been concomitant with the appearance of /b/. That is, the form without *rendaku* had the constituent structure {{N+N}+V}, but the existing N+V=V compound /uso+buk-u/ prompted a shift to {N+{N+V}}. Of course, the single kanji used to write /uso+buk-u/ obscures its etymology and reduces the likelihood that ordinary speakers will analyze it as a synchronic compound.

ame-furi

H2: 雨降 rainy weather

hire-furu

H2: to beckon by waving the wide sleeve

The *NKD* entry writes this word (ひれ振る) (cf. the verb /fur-u/ 振る 'to wave'), but the entry for the noun /hire/ says that it is written (領巾) or (肩巾). The kanji representation (領布) for /hire/ appears in other dictionaries, and this noun denotes a decorative piece of cloth hanging over the shoulders, worn by women in ancient times.

ei-fusu

H2: *yei-fushi* 酔臥 to be drunk and lying down

The Modern Tōkyō form corresponding to this example is /yoi+fus-u/ 酔い臥す, with the first element based on the verb /yo-u/ 酔う 'to get drunk'. The corresponding OJ verb had the conclusive form ^{OJ}/wep-u/ and the adverbial form ^{OJ}/wep-i/, and modern Tōkyō /ei/ is the expected historical development of the latter: [wepi]>[wewi]>[yei]>[ei]. The same changes would have yielded modern /eu/ for the conclusive, but the first vowel seems to have assimilated to the second (Martin 1987:787): [wepu]>[we(w)u]>[yeu]>[you]. The modern Tōkyō adverbial form /yo-i/ is the result of analogy. Using the verb /to-u/ 問う 'to inquire' to illustrate: /to-u/:/to-i/:/yo-u/:/yo-i/. H2 lists *yoi* (Hepburn's citation

form) for the verb but both *yoi* and *yei* as nouns, the latter cross-referenced to the former. Thus, the first element of this example is arguably a deverbal noun. Given how Lyman treated other words of this type, this example would belong with the V+V=V compounds that Lyman listed in sub-section 3[a] above, but he cited only examples with *rendaku* there.

hire-fusu

H2: 平伏 to bow low with the face to the earth, to prostrate oneself

As the kanji (平) suggests, the first element is probably related etymologically to /hira/ 平 ‘flat’. It is also etymologically the same as the /hire/ in *hire-furu* above. This example is easily analyzable as containing a second element based on the verb /fus-u/ 伏す ‘to bow down’, regardless of whether the first element is obscure to an ordinary speaker.

chiri-harai

H2: 塵掃 a dusting brush

Typically written (塵払い) (*Kōjien*, *Daijirin*).

kushi-harai

H2: 刷子 a brush for cleaning a comb

Typically written (櫛払い) (*Kōjien*, *Daijirin*).

tsuchi-harai

H2: not listed

This example (modern Tōkyō /cuči+harai/ 土払い ‘oxcart mudguard’) appears as a headword in H3 and in *NKD*. It must be what Lyman intended here.

yaku-harai

H2: 厄払 driving away evil, or misfortune; persons who go through the streets on the last evening of the year, and by repeating a charm or incantation, drive away evil from those who apply to them

Kōjien and *Daijirin* give /yaku+barai/ as an alternative pronunciation, although *NKD* does not.

kasa-hari

H2: 傘張 an umbrella maker

jō-hari no kagami

H2: 浄波梨鏡 a mirror in Hades, which reflects the good or evil deeds, which those that look into it have done while in this world

Typically written (浄玻璃の鏡) (*Kōjien*, *Daijirin*), although *NKD* gives (じょうはりの鏡). Lyman had “joo-nokami” here, but this is clearly an error. There is no headword of the form /jōHhari no kami/ in H2 or *NKD*. For this item to be

relevant here, the /hari/ in /joHhari/ would have to be related to a verb with the modern citation form /har-u/, but it is actually a borrowing from Sanskrit via Chinese meaning something like 'crystal'. As with many Buddhist terms borrowed into Chinese, the characters were assigned to render the pronunciation, not for the meanings of the morphemes that those characters ordinarily represented. On the other hand, the verb /har-u/ 張る/貼る 'to stretch; to affix' has a wide range of senses, several of which are given in the H2 entry, and some of these would make plausible folk etymologies for /hari/.

? *taiko-hari*

H2: 鞆工 a drum maker

NKD lists only /taiko+bari/ 太鼓張り as a headword, but not with the meaning given in H2. The *NKD* entry does not give /taiko+hari/ as an alternative pronunciation. The first H2 kanji (Unicode 9794) is not included in most Japanese fonts.

ami-hiki

H2: 綱引 a fisher-man

ezu-hiki

H2: *yedzu-hiki* 絵図引 a maker of maps, charts, or plans of houses; an architect

fune-hiki-michi

H2: 牽路 a path on which men walk in towing boats up a river, tow-path

This example is listed as a headword in *NKD*, but the only citation is the entry in H2. The portion of interest is *fune-hiki*, but *NKD* lists only /funa+hiki/ 船引き 'boat towing' as a headword, and the entry does not give /fune+hiki/ as an alternative pronunciation. Nonetheless, /funa+hiki/ is a compound of the appropriate type for this sub-section (N+V=N).

? *ha-hiki*

H2: not listed

No noun of the form /ha+hiki/ or verb of the form /ha+hik-u/ is listed in *NKD*, so this item is presumably an error, but I have not been able to come up with a candidate for what Lyman intended here.

mizu-hiki

H2: *midzu-hiki* 水引 a fine cord of red and white colour, made of paper, and used for tying up presents; a curtain before the stage of a theatre; letting out water from a channel for irrigation, by opening up an embankment

momo-hiki

H2: 股引 trousers, pantaloons, drawers

mosa-hiki

H2: 案内者 acting as a guide, a guide

Typically written 〈もさ引〉 (*Kōjien*; not listed in *Daijirin*), this example is obsolete. The first element is also obsolete, and according to the *NKD* entry for /mosa/, it was an exclamatory interjection that was stereotypically associated with Kantō dialects in the Edo period. It came to be used as a pejorative noun denoting a person from the Kantō and then developed the broader meaning ‘country bumpkin’.

yado-hiki

H2: persons at inns who help watch for travellers and invite them to stop, hotel-runner

Typically written 〈宿引き〉 (*Kōjien*, *Daijirin*).

ido-hori

H2: 井堀 a well digger

Typically written 〈井戸掘り〉 (*Kōjien*, *Daijirin*).

kane-hori

H2: 礦夫 a miner

Typically written 〈金掘り〉 (*Kōjien*, *Daijirin*).

mizu-kai or *mizu-kau*

H2: [listed only as a verb] *midzu-kau* 水飼 to water animals

NKD lists both the verb /mizu+ka-u/ and the corresponding noun /mizu+kai/ as headwords. *Kōjien* and *Daijirin* list the noun with its final letter in modern kana spelling 〈水飼い〉, but they list the verb only with its pre-reform spelling 〈水飼ふ〉, suggesting that the verb is obsolete.

tsuchi-kai or *tsuchi-kau*

H2: [listed only as a verb] 培 to hoe and draw the earth around the stems of grain, &c.

NKD lists both the verb /cuči+ka-u/ 培う and the corresponding noun /cuči+kai/ 培い as headwords. Martin (1987:776) and *NKD* agree that the compound verb is etymologically a combination of the noun /cuči/ 土 ‘soil’ and the verb /ka-u/ 養う ‘to cultivate’ (N+V=V), which makes it appropriate for this sub-section. In modern Tōkyō, the verb /ka-u/ normally takes animals, not plants, as direct objects and is typically written 〈飼う〉 (*Kōjien*, *Daijirin*). The single kanji 〈培〉 further obscures the etymology, and it is unlikely that late-19th-century speakers saw /cuči+ka-u/ and /cuči+kai/ as compounds.

ushi-kai

H2: 牛飼 a cowherd

yak-kai

H2: 厄介 assistance, support, or help rendered to persons in need

According to the *NKD* entry for this word, the etymology is uncertain. If the apparent second element /kai/ is Sino-Japanese, as the kanji suggests, it is not verbal. In any case, this example is beside the point because the /Q/ in /yaQkai/ makes rendaku impossible (see §7.4.7).

fude-kake

H2: 筆架 a pen-rest

Typically written (筆懸) (*Kōjien*, *Daijirin*).

hara-kake

H2: 腹掛 a cloth covering tied over the chest and abdomen

hashi-kake

H2: 橋掛 a mediator, go-between

katana-kake

H2: 刀架 a rack for holding a sword, a sword-rack

Typically written (刀掛け) (*Kōjien*, *Daijirin*).

koshi-kake

H2: 腰掛 a raised seat, a chair; anything raised to sit on

mae-kake

H2: *mae-kake* 蔽膝 an apron

Typically written (前掛け) (*Kōjien*, *Daijirin*).

me-kake

H2: 妾 a concubine, mistress

According to the *NKD* entry, this example is etymologically a combination of /me/ 目 ‘eye’ and a deverbal noun based on /kake-ru/ 掛ける ‘to hang, put’. It was motivated by the idiomatic phrase /me o kake-ru/ 目を掛ける ‘to look after’. The single kanji (妾) obscures the etymology, of course, and late-19th-century speakers may very well not have analyzed this example as a compound.

mizu-kake-ron

H2: *midzu-kake-ron* 堅白論 a quarrel or dispute in which each recklessly incriminates the other

Typically written (水掛け論) (*Kōjien*, *Daijirin*). Lyman had “midzu-” and “ron-” as separate items, but this is clearly an error. H2 lists *midzu-kake-ron*

but not *midzu-kake* or *ron-kake*. Consequently, the count that Lyman provided for items ending in /kake/ is off; there are 12 such items, not 13.

te-kake

H2: 妾 a concubine

According to the *NKD* entry, this obsolete word is etymologically a combination of /te/ 手 ‘hand’ and a deverbal noun based on /kake-ru/ 掛ける ‘to hang, put’. It was motivated by the idiomatic phrase /te ni kake-ru/ 手に掛ける ‘to look after’. The single kanji (妾) obscures the etymology, of course, and late-19th-century speakers probably did not analyze this example as a compound.

suzu-kake

H2: *sudzu-kake* the coat worn by *Yamabushi*

Typically written (篠懸) (*Kōjien*, *Daijirin*). The H2 meaning is obsolete, but the garment it denoted protected against dew from /suzu+take/ 簫/篠竹, an obscure word denoting a kind of thin bamboo (*Sasamorpha borealis*) found deep in the mountains where monks known as /yama+buši/ 山伏 practiced asceticism. According to the *NKD* entry for the tree name /suzu+kake/ 鈴掛け/篠懸け, which is still in use today, it may have originated as a metaphorical use of the H2 example. In any case, this example belongs in this sub-section, and it should have been easy for late-19th-century speakers to analyze it, even if the first element was obscure.

yari-kake

H2: 槍掛 a spear rack

yodare-kake

H2: 涎掛 a small apron worn under the chin over armor, or under the chin of infants to catch the saliva

e-kaki

H2: *ye-kaki* 絵師 a painter, sketcher, or drawer of pictures

Typically written (絵描き) (*Kōjien*, *Daijirin*).

hanshita-kaki

H2: 版下書 the person who writes the copy by which blocks are cut

The entry in H2 actually has (片) as the first kanji, but this is clearly an error. The immediately preceding headword is *han-shita* (“the copy used in cutting blocks,” written (版下).) This error was corrected in H3.

hi-kaki

H2: 火斗 a fire-poker

Typically written (火掻き) (*Kōjien*, *Daijirin*).

kago-kaki

H2: 昇夫 chair-bearers

Typically written 〈駕籠昇き〉 (*Kōjien*, *Daijirin*). The second element is based on the infrequently used verb /kak-u/ 昇く 'to carry on the shoulders', which is etymologically related to /kake-ru/ 掛ける 'to hang, put' (Martin 1987:702).

kai-kaki

H2: 貝搔 a rake or drag used in taking oysters or clams

kasa-kaki

H2: 患瘡人 a person who has the syphilis

Typically written 〈瘡搔き〉 (*Kōjien*, *Daijirin*).

koshi-kaki

H2: 輿昇 the bearers of the *Koshi*

The second element is based on the infrequently used verb /kak-u/ 昇く 'to carry on the shoulders' (see the explanation for *kago-kaki* above).

? mae-kaki

H2: *maye-kaki* 耨 a kind of hoe

NKD lists only /mae+gaki/ 前搔 'chisel with a curved tip' as a headword and does not give /mae+kaki/ as an alternative pronunciation.

masu-kaki

H2: 斗格 a stick used in leveling the top of a measure

Typically written 〈枘搔き〉 or 〈升搔き〉 (*Kōjien*, *Daijirin*).

meso-kaku

H2: to prepare to cry, to be on the point of crying, as a child

NKD lists this example as a headword, but the only citation is the entry in H1. The H2 entry notes, "... also, *meso wo kaku*." It is not clear why *NKD* recognizes /meso+kak-u/ as a true N+V=V compound but treats /beso kak-u/ (see *beso-kaku* below) as an elliptical phrase. Etymologically, /meso/ is a mimetic root (cf. /meso+meso nak-u/ めそめそ泣く 'to cry in sobs').

mimi-kaki

H2: an ear-pick

Typically written 〈耳搔き〉 (*Kōjien*, *Daijirin*).

mono-kaki

H2: 物書 secretary, clerk, writer

sumi-kaki

H2: 炭鉤 a scraper used for cleaning out a furnace
Typically written 〈炭搔き〉 (*Kōjien*, *Daijirin*).

te-kaki

H2: 手書 a good penman

to-kaki

H2: 斗格 a stick used for leveling a measure of grain, etc. a strike
Typically written 〈斗搔き〉 (*Kōjien*, *Daijirin*).

? beso-kaku

H2: the appearance of the face when about to cry

This example is not listed as a headword in *Kōjien*, *Daijirin*, or *NKD*, but these three dictionaries all list the set phrase /beso o kak-u/ ベソをかく ‘to be about to cry’ with the accusative particle between the noun and the verb, and the H2 entry notes, “. . . also, *beso wo kaku*.” This suggests that *beso-kaku* was just the phrase with the particle omitted rather than a true N+V=V compound (see the explanation for *meso-kaku* above). Etymologically, /beso/ is a mimetic root, but it seems to have dropped out of use except in this phrase.

kugi-kakushi

H2: 釘隠 an ornamental covering for concealing the head of a nail

me-kakushi

H2: 目隠 blindmen’s buff, a board-screen, the blinds of a bridle

hana-kamu

H2: 擤 to blow the nose with the fingers, in paper, or in a handkerchief

This compound is obsolete, but the phrase /hana o kam-u/ 洩を擤む ‘to blow one’s nose’ remains in common use. Despite the single kanji, this example is obviously a compound of /hana/ 洩 ‘mucus’ (etymologically identical to /hana/ 鼻 ‘nose’) and /kam-u/ 擤む ‘to blow out and wipe’.

ō-kami

H2: 狼 a wolf

Etymologically, this example is based on the ancestors of bound /oH/ 大 ‘big’ and the noun /kami/ 神 ‘god’ (Martin 1987:508). The corresponding OJ word ^{OJ}/opo+kamwi/ is attested both in the literal meaning ‘great god’ and in the figurative meaning ‘wolf’. The single kanji obscures the etymology, and it is highly unlikely that late-19th-century speakers analyzed this example as a compound. In any case, it does not belong in this sub-section, since the second element is not verbal.

Lyman may have mistakenly related this element to the verb /kam-u/ 噛む 'to bite'.

yak-kamu

H2: to be jealous, envious, to have heart burnings, or secret enmity

Typically written <やつかむ> (*Kōjien*, *Daijirin*). The entry in *NKD* suggests that the stem of this verb is monomorphemic: /yaQkam-u/. In any case, this example is beside the point because the /Q/ makes *rendaku* impossible (see §7.4.7).

me-kari

H2: 和布刈 a gatherer of sea-weed

Lyman had “me-KARI” here, but as noted above in the introductory paragraph for this sub-section, he could have intended either a noun or the citation form of a verb. H2 lists not only the noun given here but also an unrelated verb with a matching citation form (*me-kari*), but this citation form is an error. The verb in question is obsolete, but the modern Tōkyō conclusive form would be /me+kare-ru/ 目離れる ‘to take one’s eyes off of’. The classical adverbial form was the same as the modern adverbial form (/me+kare/), so the H2 citation form should have been *me-kare*. Hepburn was presumably led astray by the classical conclusive form, which would have the modern Tōkyō pronunciation /mekaru/. The compound /me+kari/ is obsolete, and so is its first element /me/ ‘seaweed’ (cf. ^{OJ}/me/), but it still appears in words that denote particular kinds of seaweed, including /wakame/ (*Undaria pinnatifida*), in which the etymological first element is the root of the adjective /waka-i/ 若い ‘young’ (Martin 1987:567). On the other hand, since the relationship of /kari/ to the verb /kar-u/ 刈る ‘to cut, reap’ is easy to see, it is plausible to think that late-19th-century speakers analyzed /me+kari/ as a compound, regardless of whether they were able to connect /me/ to anything else.

? *mizu-kari* or *mizu-karu*

H2: not listed

Kōjien and *Daijirin* both list the frozen phrase /mizu karu/ 水涸る ‘to dry up’, with the verb in its classical conclusive form. The modern conclusive form is /kare-ru/ 涸れる ‘to dry up’, and the adverbial form (Lyman’s citation form), whether classical or modern, would be /kare/. The corresponding N+V=N compound noun /mizu+gare/ 水涸れ ‘drying up’, with *rendaku*, is listed as a headword in *NKD*, but no alternative pronunciation is given. It may be that this /mizu karu/ is what Lyman intended here, since it would not be unreasonable to interpret it as a compound (N+V=V). Yanaike (1991:75) suggests that Lyman may have intended /muzukar-u/ 憤る ‘to be peevish’ here, and this suggestion

might well be correct, since this verb appears as a headword in H2. On the other hand, the *NKD* entry identifies /muzuka/ in this verb as etymologically identical to /muzuka/ in the adjective /muzuka+si-i/ 難しい ‘difficult’.

cha-kasu

H2: 嘲弄 to hoax, to befool, to trick, to impose on

Typically written 〈ちゃかす〉 (*Kōjien*, *Daijirin*), although *Kōjien* also notes the *ateji* 〈茶化す〉. The *NKD* entry offers no etymology, but this example might have been synchronically relevant if the *ateji* reflect a folk etymology, although it would be semantically opaque. Sino-Japanese /čā/ 茶 ‘tea’ is a noun, and /ka+su/ is the classical conclusive form of the verb /ka+su-ru/ 化する ‘to change, be transformed’ (a single Sino-Japanese morpheme combined with /su-ru/ ‘to do’; see the explanations in the introductions to sub-sections 3[c] and 3[d] above). This verb is not listed as a headword in H2, however, and Lyman may have had some other folk etymology in mind.

gura-kasu

H2: to cheat, defraud, swindle by petty trick or artifice, or making out a false account; to fail in one’s engagements and disappoint by continued delay (as a workman)

NKD lists this verb as a headword, written 〈ぐらかす〉, and it seems to have originated as a reduced form of /hagurakas-u/ はぐらかす ‘to dodge’, which *NKD* also lists as a headword. Both *NKD* entries describe /kas-u/ as a “suffix” (*setsubi-go* 接尾語), but Martin (1987:683) treats /hagurakas-u/ etymologically as a root (of uncertain meaning) corresponding to /hagura/ followed by two formants (i.e., derivational suffixes) /ka+s/, and he also treats intransitive /hagure-ru/ ‘to go astray’ as based etymologically on the same root. For /gurakas-u/ to be relevant here, Lyman must have analyzed /kas-u/ as related to a verb, but it is not clear whether he thought this verb was in use as an independent word. H2 gives *gurakashi* (Hepburn’s citation form for /gurakas-u/) as an alternative in the entry headed by *gurashi*, which was Hepburn’s citation form (the adverbial form) of /guras-u/. Lyman treated /guras-u/ separately, and it appears below in this sub-section. H2 also lists *hagurakashi* (Hepburn’s citation form for /hagurakas-u/) as a headword, but Lyman somehow missed this longer verb.

kane-kashi

H2: 金貸 a money-lender, a bank

me-kasu

H2: to make a foppish or dandyish appearance; to put on the appearance of, make a show of

Typically written 〈めかす〉 (*Kōjien*) or 〈粧す〉 (*Daijirin*). This verb is etymologically the transitive counterpart of /mek-u/, which no longer occurs as an independent verb but can be added to a range of bases to form compounds meaning 'to become BASE-like' (as in /aki+mek-u/ 秋めく 'to become autumn-like'). Morphologically, /mek+as-u/ follows the pattern for productively formed "short" causatives (Martin 1975:287–288), and it can be added productively to a range of bases to form compounds meaning 'to make seem BASE-like' (as in /gaku.ša+mek+as-u/ 学者めかす 'to pose as a scholar'). To be relevant for Lyman here, this example would have to be a compound of a noun (e.g., /me/ 目 'eye', /me/ 芽 'bud') and a verb (e.g., /kas-u/ 貸す 'to lend'), and perhaps he folk-etymologized it in some appropriate way.

hi-keshi

H2: 火消 a fire extinguisher; a fire-man

sumi-keshi

H2: 墨消 blotting out, erasing with ink

This word is presumably obsolete, since it does not appear in *Kōjien* or *Daijirin*, but it is listed as a headword in *NKD*.

kuchi-kiki

H2: 口利 clever at talking or persuading, eloquent

me-kiki

H2: 目利 expert in judging of the qualities of any work of art, as a sword, painting, &c.; or of the qualities of silk, tea, &c.

te-kiki

H2: 手利 smart, adroit, active, or expert in doing anything

chō-kiri

H2: 帳切 erasing the name from the town-register

en-kiri

H2: *yen-kiri* 縁切 breaking off of the conjugal relation, divorce

ishi-kiri

H2: 石工 a stonecutter

Typically written 〈石切り〉 (*Kōjien*, *Daijirin*).

kama-kiri

H2: 螳螂 a mantis

According to the entry in *NKD*, the etymology of this item is uncertain, although it almost certainly originated as some kind of compound. Lyman must have folk-etymologized it in some way for it to be relevant here.

kinchak-kiri

H2: 巾著切 a cut-purse, a pickpocket

Typically written 〈巾着切り〉 (*Kōjien*, *Daijirin*). *NKD* lists /kiN·čaku+kiri/ as a headword but gives /kiN·čaQ+kiri/ as an alternative pronunciation. Lyman had “kichak-” here, but there is no headword of the form /kičaQkiri/ or /kičaQkiru/ in H3 or in *NKD*, so this item is clearly an error. Yanaïke (1991:74) is surely correct that /kiN·čaQ+kiri/ is the word that Lyman intended to cite. In any case, this example is beside the point because the /Q/ makes rendaku impossible (see §7.4.7), but the alternative form /kiN·čaku+kiri/ (which does not appear in H2) would be relevant.

kubi-kiru

H2: 斬首 to cut off the head, to behead, decapitate

H2 lists only the verb, but *Kōjien* and *Daijirin* list only the corresponding noun /kubi+kiri/, written 〈首切り〉 or 〈首斬り〉. The verb does appear as a headword in *NKD*, although it is presumably obsolete, since the entry specifies a classical conjugation class but no modern conjugation class.

soba-kiri

H2: 蕎麦麵 a kind of food made of buckwheat

Typically written 〈蕎麦切り〉 (*Kōjien*, *Daijirin*).

shin-kiri

H2: 燭剪 snuffers

Typically written 〈心切り〉 or 〈芯切り〉 (*Kōjien*, *Daijirin*).

yajiri-kiri

H2: 穿偷 a house breaker, thief

Typically written 〈家尻切り〉 (*Kōjien*, *Daijirin*). H2 also lists the corresponding verb as a separate headword, but no such headword is listed in *NKD*.

cha-koshi

H2: 茶漉 a tea strainer

mizu-koshi

H2: *midzu-koshi* 水漉 a water strainer, a filter

toshi-koshi

H2: 年越 the crossing from the old to the new year . . .

miru-kui

H2: 西施舌 a large kind of clam

Typically written 〈海松食〉 or 〈水松食〉 (*Kōjien*, *Daijirin*). H2 gives this item as an alternative in the entry headed by the synonym *mirugai* (modern Tōkyō /miru+gai/ 海松貝; cf. /kai/ 'shellfish'). *NKD* lists /miru+kui/ as a headword, and the entry notes that the first element /miru/ denotes a kind of seaweed (*Codium fragile*).

mono-kui

H2: 物食 eating, feeding

mushi-kui

H2: 蟲蝕 worm eaten

Typically written 〈虫食い〉 or 〈虫喰い〉 (*Kōjien*, *Daijirin*).

ki-kui-mushi

H2: 木蠹 a kind of insect that bores in wood, a borer

Typically written 〈木食い虫〉 (*Kōjien*, *Daijirin*). The relevant part of this example is N+V=N /ki+kui/ 'wood eating' (cf. /ki/ 木 'wood', /ku-u/ 食う 'eat'), which is not listed in dictionaries as a word on its own.

ara-kureru

H2: 荒 to be rough, coarse and strong, brawny, burly

H2 lists this item only as a verb, but *NKD* lists both the verb and the corresponding noun as headwords and marks the verb as literary. The *NKD* entries do not offer any etymology for the verb root /kure/ in these words, but /ara/ is transparently the root of the adjective /ara-i/ 荒い 'violent, rough', so this item was probably synchronically analyzable for late-19th-century speakers.

chobo-kure

H2: a kind of song sung by a beggar who goes about beating a wooden bell

Typically written 〈ちょぼくれ〉 (*Kōjien*, *Daijirin*). The *NKD* entry is not hyphenated and does not propose an etymology, but it says that this noun is a clipping of /čobokure+čōNgare/ ちょぼくれちょんがれ 'street performance involving popular songs with meaningless words', and the entry for this longer word gives the alternative pronunciation /čobokuri+čōNgare/. The form /čobokuri/ suggests a connection to the obsolete verb /čobo+kur-u/ ちょぼくる 'to speak deceptively; to taunt'. In any case, it is not impossible that a late-19th-century speaker could have analyzed the /kure/ in /čobokure/ as a verbal element.

kai-kure

H2: wholly, altogether, entirely

Typically written 〈掻い暮れ〉 (*Kōjien*, *Daijirin*).

nani-kure

H2: 何是 any and every thing

Typically written 〈何くれ〉 (*Kōjien*, *Daijirin*). According to the *NKD* entry for this item, /kure/ is an indefinite pronoun (sometimes written 〈某〉), not based on a verb.

o-kure

H2: Imp. of *kure*, -ru, to give, with *o* polite

The base verb /kure-ru/ is typically written 〈くれる〉, although both *Kōjien* and *Daijirin* give 〈呉れる〉. There are no kanji in the H2 entry headed by *o-kure*, but the H2 entry for /kure-ru/ (headword *kure*) has 〈与〉, and so does the H3 entry for this verb. This kanji is normally used today for /atae-ru/ 与える ‘to give’, and H2 has it in the entry for this verb (headword *ataye*).

Words of the form /o/+base are normally considered derivatives, not compounds, and it is well known that *rendaku* never occurs immediately following this polite prefix. The one apparent exception to this generalization is honorific /o+guši/ 御髪 ‘hair’, but this word originated as a combination of the ancestors of /o/ 小 ‘small’ and /kuši/~guši/ 櫛 ‘comb’. The /o/ meaning ‘small’ does not block *rendaku* (Vance 1987:142). The earliest *NKD* attestation for the modern meaning is from the 15th century. The shift from ‘comb’ to ‘hair’ is an obvious case of metonymy, but the ancestor of /kuši/ as a word on its own does not seem to have undergone this shift. The kanji 〈御髪〉 suggest that the /o/ has been folk-etymologized as the polite prefix but also that /guši/ is not identified with /kuši/ ‘comb’. Thus, since there is no independent word /kuši/ or /guši/ meaning ‘hair’, /o+guši/ is arguably not a synchronic instance of *rendaku*.

saka-kure

H2: 逆臚 a hang-nail

This item is listed as a headword in *NKD*, with the kanji 〈逆剥〉, although the only citation is from H1. The common word for ‘hangnail’ in modern Tōkyō is /sasakure/ ささくれ, and *NKD* lists both this noun and the corresponding verb /sasakure-ru/ ささくれる ‘to split finely’. There is no etymology in *NKD*, but it is plausible that speakers see /kure/ in both words for ‘hangnail’ as verbal.

shiraba-kureru

H2: to appear not to know, to pretend, or feign ignorance; to dissemble, to connive at

Typically written 〈しらばくれる〉 (*Kōjien*, *Daijirin*). The hyphen in the *NKD* entry for this item implies the analysis /šira+bakure-ru/, and the explanation suggests that /bakure-ru/ may be related etymologically to /bake-ru/ 化ける

‘to disguise oneself’. If so, this example is irrelevant here, although it could perhaps be folk-etymologized in a relevant way. No verb of the form /hakure-ru/ or /bakure-ru/ is listed as a headword in *NKD*.

ta-kureru

H2: to be rumpled, wrinkled, kinked, corrugated

Typically written (たくれる) (*Kōjien*, *Daijirin*). The *NKD* entry does not separate /ta/ with a hyphen and does not offer an etymology, so this item is presumably not a compound etymologically or synchronically.

ito-kuri

H2: 絡梃 a reel

Typically written (糸繰り) (*Kōjien*, *Daijirin*). The second H2 kanji (Unicode 67C5) is not included in most Japanese fonts.

kara-kuri or *kara-kuru*

H2: ^[1] [noun] 関振 a show-box in which views or scenery are shown; machinery

Typically written (絡繰り) (*Kōjien*, *Daijirin*).

^[2] [verb] 関振 to set in motion as a machine, – especially by pulling strings or wires

Typically written (絡繰る) (*Kōjien*, *Daijirin*).

ta-kuru

H2: 手繰 to haul in hand over hand, as a rope, to snatch; to embezzle, defraud

The H2 entry says that this word is “the same as *Taguri*,” which also appears as a headword in H2. This note presumably means that Hepburn saw /ta+kur-u/ and /ta+gur-u/ as just alternative pronunciations of the same lexical item, although the H2 entry for the latter does not have a cross-reference to the former. According to the *NKD* entry for /ta+kur-u/, however, it is not clear whether the two items are etymologically the same. While /ta+gur-u/ is typically written (手繰る) (*Kōjien*, *Daijirin*), /ta+kur-u/, is often written entirely in hiragana (たくる) (*Kōjien*).

wata-kuri

H2: 綿操 a machine for cleaning cotton of its seeds, a cotton-gin

Typically written (綿繰り) (*Kōjien*, *Daijirin*).

ei-same

H2: [listed only as a verb] *yei-sameru* 酔醒 to recover from intoxication, become sober

It is not certain what Lyman intended here, but *NKD* gives the noun form /ei+same/, without *rendaku*, as an alternative pronunciation for the headword /ei+zame/ 酔い醒め ‘getting sober’, and the pronunciation without *rendaku* would have been a relevant example for Lyman here. *NKD* also lists the modern Tōkyō form /yoi+zame/ but does not give an alternative pronunciation without *rendaku* for it. None of the corresponding verb forms (/ei+same-ru/, /ei+zame-ru/, /yoi+same-ru/, /yoi+zame-ru/) is listed in *NKD*. H2 does not list any corresponding noun, and H3 lists only /yoi+zame/, with *rendaku*. For an explanation of the modern Tōkyō verb /yo-u/ 酔う ‘get drunk’, see *ei-fusu* above in this sub-section. H2 lists *yoi* (Hepburn’s citation form) for the verb but both *yoi* and *yei* as nouns, the latter cross-referenced to the former, so the first element of this example is arguably a deverbal noun. But given how Lyman treated other examples of the same type, he presumably would have treated this example (assuming he really intended the noun /ei+same/) as a V+V=N compound, like *yoi-gurui* in sub-section 3[b] above. In any case, since Lyman listed only examples with *rendaku* in sub-section 3[b], /ei+same/ would not have appeared there.

haru-same

H2: 春雨 spring rains

Whatever the explanation for the /s/ in /same/ (~/ame/) ‘rain’ may be, this /same/ is certainly not verbal (Martin 1987:35–36). Lyman should not have included this example here.

me-sameru

H2: 目覚 to awake from sleep, to come to one’s self, to have one’s eyes opened

NKD lists /me+zame-ru/ as a headword, but the entry says /mesameru/ is an older pronunciation. H2 lists only the verb, but H3 lists both the verb (without *rendaku*) and the corresponding noun *mezame* as headwords. *NKD* also lists the noun /me+zame/ 目覚め ‘awakening’ and does not give an alternative pronunciation without *rendaku*.

mura-same

H2: 村雨 rain falling in showers here and there

This /same/ certainly is not verbal (see the explanation for *haru-same* above). Lyman should not have included this example here.

abura-sashi

H2: 注子 an oil-can

Typically written 〈油差し〉 or 〈油注し〉 (*Kōjien*, *Daijirin*).

bin-sashi

H2: 鬢挿 a hair-pin

e-sashi

H2: *yesashi* 餌指 a person who catches small birds with a pole armed with bird-lime, to feed the falcons of a nobleman

The H2 entry actually has 〈餅〉 as the first kanji, but this is clearly a misprint. It was corrected in H3.

fuda-sashi

H2: 札差 a licensed merchant who exchanges the rice rations of government officials for money

hata-sashi

H2: 旗手 a standard bearer, color-sergeant

Typically written 〈旗指〉 or 〈旗差〉 (*Kōjien*, *Daijirin*).

mizu-sashi

H2: *midzu-sashi* 水注 a pitcher or pot for pouring water

Typically written 〈水差〉 (*Kōjien*, *Daijirin*).

mono-sashi

H2: 裁尺 any instrument for measuring length, a foot measure

Typically written 〈物差し〉 or 〈物指し〉 (*Kōjien*, *Daijirin*).

sumi-sashi

H2: 墨刺 the inked stick used by carpenters for drawing lines

tatami-sashi

H2: 畳刺 a maker of floor-mats

tori-sashi

H2: 鳥刺 a person who catches birds with a pole armed with bird-lime

zeni-sashi

H2: 錢貫 the string on which cash are strung

Typically written 〈錢差〉 (*Kōjien*, *Daijirin*).

tazu-sawaru

H2: *tadzu-sawari* 黨 to join with, club, or league with, to take part in, to participate in

Typically written 〈携わる〉 (*Kōjien*, *Daijirin*). Lyman probably identified the portion following the hyphen with /sawar-u/ 触る 'to touch', which is semantically plausible, but *NKD* and Martin (1987:766) offer no etymology for /tazusawar-u/. It is presumably not a synchronic compound.

yu-sawari

H2: 鞆 a swing

According to the *NKD* entry, the two elements in this item are /yusa+wari/. Martin (1987:580) divides it the same way and says that /yusa/ is etymologically mimetic, while /wari/ is etymologically related to the verb /har-u/ 張る ‘to stretch’.

abumi-shi

H2: 鋳工 a stirrup-maker

This item is listed as a headword in *NKD*, with the kanji (鋳師), although the only citation is from H1. See *e-shi* just below regarding /ši/.

*e-shi*H2: *ye-shi* 画師 a painter or drawer of pictures

The *NKD* entry for this word says that the second element /ši/ is etymologically the adverbial form of the verb /su-ru/ する ‘to do’, and this is presumably how Lyman analyzed it. Clearly, adding /ši/ to mean ‘specialist, maker’ was a productive pattern in the late 19th century. *NKD* lists this /ši/ as a headword on its own and describes it as a suffix, noting that (師) is *ateji*. The Sino-Japanese morpheme /ši/ 師 ‘teacher, mentor’ is, of course, a reasonable folk etymology.

fude-shi

H2: 筆師 a pen maker

See *e-shi* just above regarding /ši/.*gura-su*

H2: to cheat, defraud, swindle by petty trick or artifice, or making out a false account; to fail in one’s engagements and disappoint by continued delay (as a workman)

NKD lists this verb as a headword, written (ぐらす), and it seems to have originated as a reduced form of /haguras-u/ はぐらす ‘to dodge’, which *NKD* also lists as a headword. As noted above in this sub-section in connection with Lyman’s *gura-kasu*, H2 has a single entry headed by *gurashi* (Hepburn’s citation form for /guras-u/), with *gurakashi* (Hepburn’s citation form for /gurakas-u/) as an alternative, but Lyman treated the two forms separately. H2 does not list /haguras-u/, and the *NKD* entry just says that /haguras-u/ is the same as /hagurakas-u/. For /guras-u/ to be relevant here, Lyman must have identified the putative second element with classical /su/ (cf. modern Tōkyō /su-ru/ ‘to do’), but the stem-final /s/ in verbs like /guras-u/ is usually analyzed as the remnant of a prehistoric transitive suffix (Martin 1987:671–672; Frellesvig 2010:52), although there could be an etymological connection to /su-ru/.

hata-shi

H2: 旗匠 a maker of flags or ensigns

Typically written 〈旗師〉 (*Kōjien*; not listed in *Daijirin*). See *e-shi* above regarding /ši/.

ikada-shi

H2: 筏師 a raftsmen

See *e-shi* above regarding /ši/.

ikake-shi

H2: not listed

This item is listed as a headword in *NKD*, and it means ‘person who mends pots and pans’. Typically written 〈鑄掛師〉 (*Kōjien*, *Daijirin*). See *e-shi* above regarding /ši/. As Yanaike (1991:74) notes, H2 does list the synonym /i+kake+ya/ 鑄掛屋 (“鉦屋 . . . a tinker, a repairer of utensils made of cast metal”), but this word was irrelevant for Lyman, since /ya/ is not susceptible to *rendaku*.

imono-shi

H2: 鑄物師 a founder, caster of metal utensils

NKD lists /i+mono+ši/ as a headword but gives /i+mono+ji/ as an alternative pronunciation. See *e-shi* above regarding /ši/.

ireba-shi

H2: 入齒師 a dentist

See *e-shi* above regarding /ši/.

kagami-shi

H2: 鏡師 a maker of mirrors

See *e-shi* above regarding /ši/.

kawara-shi

H2: 瓦師 a maker, or manufacturer of tiles

See *e-shi* above regarding /ši/.

kazari-shi

H2: 鏘師 a jeweler

Also written 〈飾り師〉 (*Kōjien*, *Daijirin*). See *e-shi* above regarding /ši/.

kōshaku-shi

H2: 講釈師 a public story-teller, or lecturer on ancient history

The entry in H2 has 〈訳〉 as the second kanji, but this is an error, and it was corrected in H3. Lyman had “koshaku–” here, with a short first vowel, but this is clearly an error. There is no headword of the form /košakuši/ in *NKD* or in H2. See *e-shi* above regarding /ši/.

koto-shi

H2: 琴工 harp or lyre maker

Typically written 〔琴師〕 (*Kōjien*, *Daijirin*). See *e-shi* above regarding /ši/.

kusu-shi

H2: 医生 a physician, doctor

Typically written 〔薬師〕 (*Kōjien*, *Daijirin*). There is no definite etymology in the *NKD* entry for this word. Martin (1987:467) suggests that /ši/ is a truncation of /širi/ (the adverbial form of the verb /šir-u/ 知る ‘to know’). In any case, the transparent synonym /kusuri+ši/ 薬師 is also listed as a headword in *NKD*, and it would be relevant here, but neither /kusuri+ši/ nor /kusu+ši/ is in use today.

kuji-shi

H2: 公事師 one who buys out the interest of a party in a law-suit and appeals before the court to advocate it, a lawyer

See *e-shi* above regarding /ši/.

makie-shi

H2 [s.v. *maki-ye*]: a person who paints gold lacquer

Typically written 〔蒔絵師〕 (*Kōjien*; not listed in *Daijirin*). The headword in H2 is hyphenated as *ma-kiye*, but this is clearly a misprint. See *e-shi* above regarding /ši/.

megane-shi

H2: an optician

This item is listed as a headword in *NKD*, with the kanji 〔眼鏡師〕. See *e-shi* above regarding /ši/.

nage-shi

H2: 長押 a horizontal piece of timber in the frame of a house

The *NKD* entry for this word has no hyphen and provides no etymology. It is presumably not a synchronic compound, although it may have originated as a compound.

nani-shi-ni

H2: for doing what, why, for what reason

Typically written 〔何為に〕 (*Kōjien*, *Daijirin*). This item appears in *NKD* as a headword, but it is clearly a frozen phrase meaning ‘in order to do what’. It was irrelevant for Lyman, since the verb form in the phrase would not be subject to *rendaku*.

nani-shi-ka

H2: [s.v. *nani-shi-ni*]: for doing what, why, for what reason

Typically written 〈何しか〉 (*Kōjien*, *Daijirin*). This item appears in *NKD* as a headword, but it is clearly a frozen classical phrase. The *NKD* entry describes /ši/ as an adverbial particle. Ikeda (1975:244) says, “It emphasizes the preceding word.” The *NKD* entry describes /ka/ as an emotive particle. Ikeda (1975:230) says it “expresses doubt.” Since the particle /ši/ is not verbal and would not be subject to *rendaku*, this example was irrelevant for Lyman.

na-ni-shi-ō

H2: 名負 the celebrated, famous; corresponding to its reputation

Typically written 〈名にし負う〉 (*Kōjien*, *Daijirin*). Although this item is not commonly used in modern Tōkyō, it is listed as a headword in *NKD*, marked as a set phrase, so it is clearly what Di Sciullo and Williams (1987:1) would call a *listeme*. The four words in the phrase are a noun (cf. modern Tōkyō /na/ ‘name’), a dative particle (cf. modern Tōkyō /ni/ ‘to, for’), an obsolete emphatic particle (which would be pronounced /ši/ in modern Tōkyō), and the conclusive form of a verb (cf. modern Tōkyō /o-u/ 負う ‘to bear’), which had the now obsolete meaning ‘to be appropriate’ when the phrase was coined. The two widely used pronunciation dictionaries for modern Tōkyō Japanese give different pronunciations: *Meikai* has /nanišioH/, matching H2, but *NHK* has /nanišiou/. The long vowel in the former is a strong indication that the verb in the phrase has lost its independent status. The H2 entry for *na-ni-shi-ō* actually provides just a cross reference to *na-ni-ō* (the same phrase without the emphatic particle), where the definition appears. Since /ši/ is not verbal and is not subject to *rendaku*, this item is was irrelevant for Lyman.

nurimono-shi

H2: 塗物師 a lacquerer, varnisher

The entry in H2 has 〈籠〉 as the second kanji, but this is probably an error, although it remains the same in H3. The H2 entry for *nuri-mono* ‘lacquered ware’ has the expected kanji 〈塗物〉. See *e-shi* above regarding /ši/.

sashimono-shi

H2: 拵物師 a cabinet-maker, joiner

Typically written 〈指物師〉 (*Kōjien*, *Daijirin*). See *e-shi* above regarding /ši/.

sato-su

H2: 諭 to make to know, to instruct, teach, to enlighten

Lyman had “sato-(se)” here, which would seem to imply *sato-shi(se)*, but Yanaïke (1991:74) interprets it to mean *sato-shi/sato-se*, and perhaps this is correct. The verb with the conclusive form /satos-u/ has the adverbial form /satoš-i/ (the citation form for Lyman and Hepburn), and this is the only headword romanized 〈satoshi〉 in H2 except for the classical conclusive form of the adjective

/sato-i/ 聡い ‘clever’, which would not have been relevant here. This verb has the imperative form /satos-e/, but there is no reason for Lyman to have cited this form here. In any case, for this verb to be relevant here, Lyman must have analyzed it as containing a verbal second element, presumably the verb meaning ‘to do’ (which has the classical conclusive form /su/). However, the second /s/ in the stem is usually analyzed as the remnant of a prehistoric transitivizing suffix (Martin 1987:671–672; Frellesvig 2010:52), although there could be an etymological connection to the verb /su-ru/ する ‘to do’.

shiru-shi or *shiru-su*

H2: ^[1] [noun] 標 or 驗 a mark or sign by which any thing is known, a token, symptom, emblem, a badge, crest; signal, proof, evidence

Typically written 𠄎 or 𠄎 (Kōjien, Daijirin).

^[2] [verb] 誌 to write down, to enter in a book, to record, to note, to mark

Typically written 𠄎 (Kōjien, Daijirin). This verb stem seems to be monomorphemic even etymologically. *NKD* and Martin (1987:753) offer no etymology, not even treating the /s/ in /širus-u/ as a remnant of an earlier suffix (see the explanation for *sato-su* just above). Despite the different kanji, both *NKD* and Martin (1987:527) say that the noun is etymologically related to the verb.

sora-shi or *sora-su*

H2: ^[1] [noun] 虚術 a shamming, pretending, feigning; a shammer, pretender

This item is listed as a headword in *NKD*, but the only citation is from H2.

^[2] [verb] to cause to glance or fly off; to turn off; to offend

Typically written 𠄎 (Kōjien, Daijirin). For this verb to be relevant, Lyman must have analyzed it as containing a verbal second element, but the second /s/ in /soras-u/ is usually analyzed as the remnant of a prehistoric transitivizing suffix (see the explanation for *sato-su* above).

sugo-su

H2: 過 to pass by, to exceed or do anything in excess, transgress, to pass the time, to live

For this verb to be relevant, Lyman must have analyzed it as containing a verbal second element, but the second /s/ in /sugos-u/ is usually analyzed as the remnant of a prehistoric transitivizing suffix (see the explanation for *sato-su* above).

yatsu-su

H2: to put on mean clothes in order to alter one’s appearance, to disguise one’s self and go incognito

Typically written 𠄎 or 𠄎 (Kōjien, Daijirin). For this verb to be relevant, Lyman must have analyzed it as containing a verbal second element, but

the /s/ in /yacus-u/ is usually analyzed as the remnant of a prehistoric transi-
tizing suffix (see the explanation for *sato-su* above).

makoto-shi-yaka ni

H2: making a show of truth, having the appearance of being true, plausibly,
speciously

Typically written 〈実しやか〉 (*Kōjien*) or 〈真しやか〉 (*Daijirin*). This item is the adjectival noun (*keiyōdōshi* 形容動詞) /makoto+shi+yaka/ followed by the adverbial form of a copula. The noun root /makoto/ 'truth' is followed by the adjective-deriving suffix /ši/ (see the introduction to sub-section 4(c) below), which in turn is followed by the adjectival-noun-deriving suffix /yaka/ 'like'. It is not clear how Lyman analyzed this item, but certainly does not belong here.

tai-shi-ta

H2: 大 great, important, serious, severe

Dictionaries classify this item as an adnominal modifier (*rentai-shi* 連体詞). The corresponding verb citation form /tai+su-ru/ is not listed in *NKD*, but Lyman was surely correct to treat it as containing a form of the verb /su-ru/ する 'to do' etymologically. He did not, however, list the many other examples of a single Sino-Japanese morpheme followed by /su-ru/ with no *rendaku* (e.g., /tai+su-ru/ 対する 'to oppose') in this sub-section. Most of the examples in sub-section 3[d] have /Q/ immediately preceding /su-ru/, as noted there.

nami-suru

H2: 無 to set at naught, to despise, to make light of, to treat with disrespect,
disregard or dishonor

Typically written 〈蔑する〉 (*Kōjien*, *Daijirin*). According to the *NKD* entry for this item, /nami/ is etymologically related to /na-i/ 'to be non-existent' (sometimes written 〈無い〉), although it is a semantically opaque bound element for present-day speakers. Nonetheless, /su-ru/ is clearly the verb meaning 'to do' here.

ato-shiki

H2: 迹式 a successor, an heir

Typically written 〈迹式〉 or 〈迹職〉 (*Kōjien*, *Daijirin*). According to the *NKD* entry for this item, it originally denoted the family fortune, not the person who inherits. Consequently, deverbal /šiki/ 敷き 'foundation' is not implausible as the etymological second element (cf. the verb /šik-u/ 敷く 'to lay (as a foundation)'), but the kanji now in use suggest that the synchronic connection is tenuous at best.

kana-shiki

H2: 鑢 an anvil

Typically written 鉄敷 or 金敷 (*Kōjien*, *Daijirin*).*kata-shiki*

H2: 片敷 spread out on one side – as of a garment or sleeve

kore-shiki

H2: 此敷 this kind – used only of trifling or mean things

Typically written 是式 (*Kōjien*, *Daijirin*). This word also appears in H2 s.v. *shiki* 式 (cf. modern Tōkyō /šiki/ 式 ‘style’). The *NKD* entry for Sino-Japanese /šiki/ 式 explains that it developed a pejorative suffix-like use in Japanese. Thus, /šiki/ in this word is not verbal etymologically and presumably not synchronically either, since a folk etymology analyzing /šiki/ as derived from the verb /šik-u/ 敷く ‘to lay (as a foundation)’ is far-fetched. Lyman was probably misled by the ateji 敷 in H2.

kura-shiki

H2: 倉敷 money paid for the storage of goods, storage

? *naga-shiki* or *naga-shiku*

H2: not listed

No noun of the form /naga+šiki/ or verb of the form /naga+šik-u/ is listed in *NKD*, so this item is presumably an error, but I have not been able to come up with a plausible candidate for what Lyman intended here. Although /naka+šiki/ 中敷 ‘spreading inside’ has a verbal second element and is listed as a headword in *NKD*, the entry does not give an alternative pronunciation without *rendaku*, and it does not appear in H2 or H3.

? *utto-shiki*

H2: not listed

H2 does list the adjective /uQ.toH+ši-i/ 鬱陶しい ‘dismal’ (romanized <ut-tōshii>) as a headword, and the entry includes the inflectional endings “-ki” for the classical adnominal form (*rentai-kei* 連体形) and “-ku” for the classical adverbial form. Lyman could have noted down the romanization <uttōshiki> and then later misinterpreted it as the adverbial form (his citation form) of a compound verb containing /šik-i/ (cf. /šik-u/ 敷く ‘to spread’) as its second element. *NKD* lists the alternative pronunciation /uQ.to+ši-i/, with short /o/, as a separate headword. Morphologically, the adjective contains the Sino-Japanese binom /uQ.toH/ as its base, followed by the adjective-deriving suffix /ši/. For a brief discussion of this /ši/, see the introduction to sub-section 4(c) below.

ya-shiki

H2: 屋敷 the lot of ground on which a house stands; the house of a noble, or honorable person

za-shiki

H2: 座敷 a room, or apartment

abura-shime

H2: 油窄 an oil-press

NKD lists /abura+šime/ as a headword, but the entry gives /abura+jšime/ as an alternative pronunciation.

haji-shimeru

H2: 辱 to make another feel ashamed, to disgrace

NKD lists only the classical conclusive form /haji+šim-u/ 恥しむ as a headword, implying that this item is obsolete, although /haji+šime-ru/ does appear as a headword in *Daijirin*. *NKD* also lists the corresponding noun /haji+šime/ 恥しめ 'humiliation' as a separate headword. The second element is etymologically derivational, added to the irrealis form (*mizen-kei* 未然形) of a verb or adjective to derive a causative verb (Ikeda 1975:120–121), but it went out of use in the Early Middle Japanese period (800–1200; Frellesvig 2010:236). The first element is related to the modern Tōkyō verb /haji-ru/ 恥じる 'to feel shame', and the deverbal noun /haji/ 恥 'shame' is a separate headword in *NKD* and in H2. Lyman probably thought that /haji+šime-ru/ was a compound of this noun and an ordinary verb with the conclusive form /šime-ru/. H2 lists /šime-ru/ 締める 'to tighten' as a headword, and the entry also includes examples of /šime-ru/ 閉める 'to shut', /šime-ru/ 締める 'to total' (for which H2 gives the kanji (計)), and /šime-ru/ 占める 'to occupy', implying that they are all the same lexeme, and they are probably etymologically identical.

karo-shimeru

H2: 軽 to make light of, despise, contemn, disregard, slight

The *NKD* entry offers no etymology for this item, but the second element is presumably the same causative as in *haji-shimeru* just above, and Lyman probably thought it was an ordinary verb. The first element is the adjective stem /karo/, which has not survived in modern Tōkyō Japanese but is an attested alternative form of the stem in /karu-i/ 軽い 'light'.

mizu-shime

H2: *midzu-shime* 下婢 a female servant

Typically written 水仕女 (*Kōjien*, *Daijirin*). This is the only headword of the form /mizušime/ that appears in H2 (and in H3). Lyman probably thought

that the second element was derived from a verb with the modern citation form /šime-ru/ (see the explanation for *haji-shimeru* above). According to the *NKD* entry, the hyphen in H2 is misleading because this word is a compound of /mizuši/ 水仕 ‘kitchen work’ and /me/ 女 ‘woman’. The first element is etymologically a combination of the honorific prefix /mi/ 御 and the Sino-Japanese binom /zu-ši/ 厨子 ‘cupboard’, but this /mi+zu-ši/ has been folk-etymologized as /mizu+ši/ (i.e., ‘water’+‘doing’). The kanji (仕) is a common *ateji* for the adverbial form of /su-ru/ する ‘to do’, as in /ši+goto/ 仕事 ‘work’. The word /mizu+šime/ 水締め ‘sprinkling water on the ground to harden it’, which is listed as a headword in *NKD*, would be a straightforwardly relevant example in this sub-section, but it does not appear in H2 or H3, so it is an unlikely candidate for what Lyman intended.

obi-shime

H2: 帯締 a narrow belt

sō-shime

H2: 総計 the sum total, whole amount

Typically written (総締め) (*Kōjien*, *Daijirin*). *NKD* lists /soH+šime/, with *rendaku*, as a headword, but the entry gives /soH+šime/ as an alternative pronunciation.

? *yama-shimeru*

H2: 疾 to cause pain or sickness

No headword of the form /yamašimeru/ or /yamašimu/ (the corresponding classical conclusive form) is listed in *NKD*, but the H2 headword (which also appears in H3) has the appropriate form for a classical causative based on the ancestor of modern Tōkyō /yam-u/ 病む ‘to become ill’. Yanaike (1991:74) correctly labels it a causative, although the derivational pattern involved was no longer productive in Hepburn’s day (see the explanation for *haji-shimeru* above).

mono-shiri

H2: 識者 a philosopher, a learned man

Typically written (物知り) or (物識り) (*Kōjien*, *Daijirin*).

[[*us-suru*]]

This item is a duplication. The same example appears above in sub-section 3[d], which is where it belongs.

so-shiranu-kao

H2: not appearing to know

This example is a two-word set phrase, consisting of /so+šir-anu/ 所知らぬ ‘pretending not to know’ and /kao/ 顔 ‘face’. The first word is relevant here, since its second element is obviously based on a verb (cf. modern Tōkyō /šir-u/

知る ‘to know’). Lyman had “soo-shiranukao” here, with a long first vowel, but this is clearly an error. The *Kōjien* entry for /so+šir-anu/ says that the etymological source for /so/ might be the mesial demonstrative root /so/ or a truncation of /sora/ 空 ‘sky’ (used figuratively to mean ‘false’; see the explanation for *sora-uso-fuku* above). The *NKD* entry for /so+šir-anu/ mentions the latter possibility but does not offer a definite etymology.

dara-suke

H2: same as *darani-suke*

Typically written 陀羅助 (*Kōjien*, *Daijirin*). The *darani-suke* cited in H2 is the next item on Lyman's list.

darani-suke

H2: 蛇羅尼介 a kind of bitter medicine

Typically written 陀羅尼助 (*Kōjien*, *Daijirin*). H2 lists this example and the previous one (*dara-suke*) together in the same entry. The first element is from Sanskrit *dhāraṇī* ‘mystic Buddhist formula’. The *NKD* entry says that monks would hold the paper in their mouths while reciting and that the bitter taste would keep them awake. Thus, /suke/ (derived from /suke-ru/ 助ける ‘to help’) makes sense etymologically, and the figurative use for a kind of medicine is reasonable.

fuku-suke

H2: 福助 a person of short stature and large head, a dwarf

The second element /suke/ is etymologically verbal (cf. modern Tōkyō /suke-ru/ 助ける ‘to help’), but the suffix-like use here converts a base into a (usually masculine) given name or a nickname. Many such nicknames have become lexicalized, and the connection to the verb is synchronically tenuous at best.

kumo-suke

H2: 雲助 a low kind of chairbearer, who frequents the great highways

On the use of /suke/ here, see the explanation for *fuku-suke* just above.

san-suke

H2: not listed

Although this item is not listed in H2 (or in H3), it appears as a headword in *NKD* and is almost certainly what Lyman intended here. It also appears as a headword in *Kōjien* and *Daijirin*: /saN+suke/ 三助 ‘bathhouse attendant’. Although this word is semantically opaque, this use of /suke/ is probably the same as that explained in connection with *fuku-suke* above.

goma-suri

H2: one who, from personal motives, speaks well or evil of others; a sycophant, talebearer

Typically written 〈胡麻播り〉 (*Kōjien*, *Daijirin*). This example is based on the phrase /goma o sur-u/ 胡麻を播る ‘to grind sesame seeds’, which is commonly used idiomatically to mean ‘to play the sycophant’.

han-suri

H2: 版摺 a printer, or one who takes the impression from the blocks, a press-man

ko-suru

H2: 擦 to rub, to use friction to anything

Martin (1987:713) suggests tentatively that this item originated as a compound of a noun plus the ancestor of modern Tōkyō /sur-u/ 擦る ‘to rub’. The entry in *NKD* also notes this possibility but says that the etymology is uncertain. H2 also lists this /sur-u/ as a headword, and since /kosur-u/ and /sur-u/ are both still in use in modern Tōkyō, it seems at least possible that speakers segment /kosur-u/ into /ko/ and /sur-u/ even if the meaning of /ko/ is obscure.

mimi-kosuri

H2: 耳話 whispering in the ear

Lyman had “mimi-” here, implying *mimi-suri*, but no headword of the form /mimisuri/ or /mimisuru/ appears in H2 or in *NKD*. Yanaike (1991:74) is almost certainly correct that what Lyman intended was /mimi+ko(+suri)/, which is typically written 〈耳擦り〉 (*Kōjien*, *Daijirin*).

te-suri

H2: 手摺 a rail extending from post to post, or over balusters for the hand to rest on

kara-tachi

H2: 枳 a kind of thorny bush

Typically written 〈枸橘〉 or 〈枳殼〉 (*Kōjien*, *Daijirin*). The *NKD* entry says this word is a clipping of /kara+tachibana/ 唐橘, which is also listed as a headword in *NKD*. The absence of *rendaku* is thus arguably due to Lyman’s Law. The ancestor of /tačibana/ (a kind of citrus fruit) is attested in Old Japanese as ^{OJ}/tatibana/, and ^{OJ}/tati/ seems not to have been verbal. Martin (1987:543) proposes pre-OJ /ta/ ‘paddy’, /ti/ ‘path’, and /pana/~/bana/ ‘flower’ as the etymological elements, and if this analysis is correct, ^{OJ}/tati/ was probably already opaque to OJ speakers. Even though /tači/ in modern Tōkyō /tačibana/ is not verbal etymologically, it could easily be folk-etymologized as derived from the verb /tac-u/ 立つ ‘to stand’. The surname /tačibana/ is often written 〈立花〉.

kit-tatsu

H2: 屹立 to be precipitous, steep, abrupt

Typically written 〈切っ立つ〉 (*Kōjien*, *Daijirin*). This example is not really relevant here because the /Q/ in /kiQ+tac-u/ makes *rendaku* impossible (see §7.4.7). The change from C/i/ to /Q/ just before the primary boundary in V+V=V compounds (/kiri/>/kiQ/ in this case) is a well-known historical change that has happened sporadically but has affected more than a few items (Martin 1975:400; Vance 2002c).

? *kunitoko-tachi* or *kunitoko-tatsu*

H2: not listed

Lyman had “*kunitoko-*” here, but no headword /*kunitoko*/ or headword beginning /*kunitoko*/ appears in H3 or in *NKD*, and no example beginning *kunitoko* appears in H2 or H3 in the entries for any verb with the modern citation form /tac-u/. This item is presumably an error, but I have not been able to come up with a candidate for what Lyman intended.

mono-tachi

H2: 物断 one who binds himself by an oath to abstain from certain kinds of food, or certain things to which he is addicted

shiro-tae

H2: *shiro-taye* 白妙 (poet.) white

According to the *NKD* entry, the second element is etymologically modern Tōkyō /tae/ 袴 (cf. ^{0j}/tape/), an obsolete noun denoting cloth made from mulberry bark, so this example does not belong here. Lyman presumably took the second element to be based on /tae-ru/ 耐える ‘to withstand’ or /tae-ru/ 絶える ‘to cease to exist’ (both listed as headwords in H2), although the second kanji in 〈白妙〉 suggests a classical adjectival noun (also listed in H2) that in modern Tōkyō Japanese combines with a copula form to function as an adnominal modifier: /tae+naru/ 妙なる ‘superb’ (modern Tōkyō /tae/, ^{0j}/tape/). *Jōdai* treats ^{0j}/tape/ as two different etyma, but Martin (1987:537) suggests that they are connected.

uro-taeru

H2: *urotaye* 狼狽 to be confused, bewildered, agitated, perplexed, flurried; to be giddy, thoughtless, inconstant

Since the *NKD* entry for this item gives no etymology and does not hyphenate the headword (modern Tōkyō /urotae-ru/) between /o/ and /t/, this example is clearly not a synchronic compound, and Lyman should not have included it here, but he may have folk-etymologized it in some relevant way.

ut-tae or *ut-taeru*

H2: ^[1] [noun] *uttaye* 訟 a complaint or appeal to a civil officer or judge; an accusation, petition

Typically written 〈訴え〉 (*Kōjien*, *Daijirin*).

^[2] [verb] *uttaye* 訟 to refer, or appeal to a civil officer, or court; to inform against, to enter a complaint, or bring accusation or suit against any one; to confess

Typically written 〈訴える〉 (*Kōjien*, *Daijirin*). The corresponding Old Japanese verb is ^{OJ}/urutapu/, and Martin (1987:780–781) suggests that it might be etymologically a combination of the noun ^{OJ}/ura/ ‘heart, mind’ and the verb ^{OJ}/tapu-u/ ‘to withstand’ (cf. modern Tōkyō /tae-ru/ 耐える). The modern form is not relevant here because /Q/ makes rendaku impossible (see §7.4.7) and because it clearly is not a synchronic compound.

yoko-taeru

H2: *yokotaye* 横 to place across, athwart, or horizontally

Martin (1987:786) gives the etymology as the ancestor of /yoko/ 横 ‘horizontal’ plus the ancestor of the verb /tae-ru/ 耐える ‘to withstand’, and this example was presumably a compound of the right type for late-19th-century speakers. The first element is obviously this /yoko/, and the second element is obviously verbal, although not semantically transparent.

hi-taki

H2: 火焼 a fireman, stoker

Both *Kōjien* and *Daijirin* give 〈火焼き〉 as an alternative way of writing this item. The verb /tak-u/ ‘to burn’ is much more likely to be written 〈焚く〉 rather than 〈焼く〉. Yanaike (1991:74) notes that /hitaki/ 鶺鴒 ‘crested flycatcher’ also appears as a headword in H2, and it is certainly possible that Lyman intended *hi-taki* to cover this item as well. The *NKD* entry for this bird name says that it is etymologically a compound of the same two elements that appear in /hi+taki/ 火焼き ‘fire making; stoker’, although it is unlikely that a modern speaker would see the connection. There is a hyphen in the H2 romanization for the semantically transparent compound but not in the romanization for the bird name.

meshi-taki

H2: 飯焚 a cook

Typically written 〈飯炊き〉 (*Kōjien*, *Daijirin*).

hana-tare

H2: 鼻垂 a snotty nose

Typically written 〈洩垂れ〉 (*Kōjien, Daijirin*).

shio-tareru

H2: 塩垂 to be dirty and greasy

Etymologically, this example originated as a combination of the ancestors of /šio/ 'sea water' and /tare-ru/ 'to drip'. Both the literal meaning 'to become wet and dripping with sea water' and the figurative meaning 'to shed copious tears' are attested in EMJ, and the latter is still current in modern Tōkyō. The H2 meaning, first attested in LMJ, is obsolete. The nouns /šio/ 潮 'tide; sea water' and /šio/ 塩 'salt' are etymologically identical (Martin 1987:525), although modern Tōkyō speakers do not connect them.

hita-tare

H2: 直垂 a kind of robe worn by nobles

Lyman had “shita – ” here, but there is no headword of the form /šitatare/ in *NKD* that matches the H2 kanji and definition. In both H2 and H3, we find *shitatare* and *hitatare* listed as separate headwords, but written with the same kanji and defined similarly. I agree with Yanaike (1991:74) that Hepburn mistakenly took a Shitamachi pronunciation (with initial [ɕ] rather than [ç]; see §4.3) to be a separate word. Since the attested word with initial /h/ is clearly relevant in this sub-section, I have substituted it for what Lyman had.

hachi-tataki

H2: 鉢叩 a begging priest who goes about beating an iron bowl

Typically written 〈鉢叩き〉 (*Kōjien, Daijirin*).

ishi-tataki

H2: 鶺鴒 a kind of bird, the wagtail

Typically written 〈石叩き〉 or 〈石敲き〉 (*Kōjien, Daijirin*).

ma-tataku

H2: 瞬 to wink, to flicker, as a candle, to twinkle

NKD lists /ma+tatak-u/ as a headword, but the entry says that /ma+datak-u/ used to be a possible alternative pronunciation. Etymologically, this item originated as a combination of the ancestors of /me/~ma/ 目 'eye' and /tatak-u/ 叩く 'to tap' (Martin 1987:718). But since the covered form-vowel (see §7.2.3) in /ma/ and the single kanji in 〈瞬く〉 obscure the etymology, late-19th-century speakers probably did not see this example as a compound.

niwa-tataki

H2: 鶺鴒 the wagtail

Typically written 〈庭叩き〉 (*Kōjien, Daijirin*).

shiba-tataku

H2: to wink frequently

Typically written 〈屡叩く〉 or 〈瞬く〉 (*Kōjien*, *Daijirin*). *NKD* lists /šiba+tatak-u/ as a headword but gives /šiba+datak-u/ as an alternative pronunciation. This example is semantically transparent. *NKD* lists /šiba/ 屡 ‘frequently’ as a headword and describes it as a morphological element (*goso* 語素); it occurs reduplicated in the common word /šiba+šiba/ しばしば ‘frequently’, which appears as a headword in H2.

fude-tate

H2: 筆立 a box of bamboo, or porcelain for holding pencils or pens

me-tate

H2: 目立 a saw-sharpener, a repairer of the teeth of a grater, or of millstones

ya-tate

H2: 墨斗 a portable inkstand, such as is carried suspended from the belt

Typically written 〈矢立て〉 (*Kōjien*, *Daijirin*).

shito-tome

H2: a hasp or clasp, for fastening a wallet

Kōjien and *Daijirin* list only /šitodome/, with /d/ in the third syllable, as a headword, written 〈鷗目〉. *NKD* also lists only /šitodome/, but the entry gives /šitotome/ as an older pronunciation. Etymologically, this word is obviously a compound of two nouns: /šitodo/ 鷗 ‘bunting’ and /me/ 目 ‘eye’. The entry in *NKD* explains that it was motivated by the fact that the kind of clasp in question was shaped like a bird’s eye. But /šitodo/ is an obsolete word for this type of bird, and unless a speaker knows the kanji (which do not appear in the H2 entry), it is perfectly natural to folk-etymologize it (as Hepburn and Lyman apparently did) with a second element derived from the verb /tome-ru/ 留める ‘to fasten’. Yanaïke (1991:74) suggests that Lyman’s example might be a misprint for /ši+tome-ru/ 仕留める ‘to finish by killing’ or /šitatame-ru/ 認める ‘to write’, both of which are H2 headwords that would be appropriate for this sub-section of Lyman’s article, but the latter actually appears later on Lyman’s list in this sub-section (see below) and presumably cannot be what he intended here.

sode-tome

H2: 袖止 the sewing up of part of the opening of the sleeve when a child becomes about five years old, so as to make a pocket

akari-tori

H2: 明取 a window, or any place letting in light

aka-tori

H2: 湊取 a vessel for bailing a boat

anma-tori

H2: *anma-tori* 按摩師 a shampooer

Typically written 〈按摩取〉 (*Kōjien*; not listed in *Daijirin*).

ase-tori

H2: 汗衫 an undershirt worn to protect the other garments from sweat, also a handkerchief

Typically written 〈汗取り〉 (*Kōjien*, *Daijirin*).

ato-tori

H2: 跡取 an heir, successor

chiri-tori

H2: 塵取 a dust pan

hiyō-tori

H2: 日雇取 a day-laborer

Typically written 〈日傭取り〉 (*Kōjien*, *Daijirin*). This example is now obsolete.

kaji-tori

H2: 搦取 a helmsman, steersman

koi-tori

H2: 肥取 a person who collects manure

The modern Tōkyō form is /koe+tori/ (cf. /koe/ 肥 ‘manure’), but the form in H2 is attested, and *NKD* lists it as a headword.

kuchi-tori

H2: ^[1] a horse-boy, hostler

Typically written 〈口取り〉 (*Kōjien*, *Daijirin*).

^[2] 点心 a dessert or confectionary taken after meals

Typically written 〈口取り〉 (*Kōjien*, *Daijirin*). *NKD* lists this item under the same headword as the item just above and explains it as a clipping of /kuči +tori+ga-ši/ (cf. /ka-ši/ 菓子 ‘sweets’).

me-toru

H2: 娶 to marry a wife

The *NKD* entry for this verb gives the etymology as /me/ 女 ‘woman’ plus the verb /tor-u/ 取る ‘to take’, but the single kanji obscures the internal structure, and /me/ is obsolete as an independent noun.

nomi-tori

H2: 蚤捕 a flea-trap

o-toru or *o-tori*

H2: ^[1] [verb] 劣 to be inferior or less in size, degree, excellence, or quality; to be worse than, not so good as

There is no hyphen in the H2 headword for this verb or in the headword for the derived noun just below. The etymological root in /otor-u/ is /oto/, the same as in /otos-u/ 落とす ‘to let fall’ (Martin 1987:743). Thus, /otor-u/ is not a compound either etymologically or synchronically and should not have been on Lyman’s list.

^[2] [noun] 劣 inferiority, worse

Yanaïke (1991:74) suggests the noun /o+tori/ 囀~媒鳥 ‘decoy bird’ as another possibility, but this item appears below in sub-section 4(e), so it is unlikely that Lyman intended it here.

ondo-tori

H2: 音頭取 the person who raises the tune, or leads in singing, a chorister

sai-tori

H2: 經紀人 a middle-man between seller and buyer, a broker

Typically written 〈才取り〉 (*Kōjien*, *Daijirin*). According to the *NKD* entry for this example, /sai/ is etymologically a contraction of obsolete /suai/ ‘brokering’ (a word of unknown origin).

sao-tori

H2: 竿取 a boatman who pushes with a pole

Typically written 〈棹取り〉 (*Kōjien*, *Daijirin*).

seki-tori

H2: 関取 the champion or best of wrestlers

shaku-tori-mushi

H2: 尺蠖 a caterpillar

Typically written 〈尺取虫〉 (*Kōjien*, *Daijirin*). *NKD* also lists the clipped form /šaku+tori/ as a headword.

shi-toru

H2: 湿る to be damp, moist

For this example to be relevant here, Lyman must have interpreted it as ending with a verbal element of the form /tor-u/, but this analysis is unlikely both synchronically and etymologically. The *NKD* entry suggests no etymology.

sumi-tori

H2: 炭斗 a coal-scuttle

Typically written 炭取 or 炭斗 (*Kōjien*, *Daijirin*).

sumō-tori

H2: 相撲取 a wrestler

The H2 entry has only the kanji for /sumoH/ ((相撲)), but this is obviously an error. It was corrected in H3.

tema-tori

H2: 手間取 an assistant to a workman, an under workman

yu-toru

H2: to linger, to loiter, to delay

For this item to be relevant here, Lyman must have interpreted it as ending with a verbal element of the form /tor-u/, but this analysis is unlikely both synchronically and etymologically. The *NKD* entry suggests no etymology. *NKD* also lists /yu+tori/ 湯取 (an obsolete word denoting a kind of ladle) as a headword, and it would be relevant in this sub-section, but since it does not appear in H2, it seems very unlikely that it is what Lyman intended.

zōri-tori

H2: 草履取 the servant who carries his master's sandals

Lyman actually had “zoo-” here, but this is presumably a misprint. There is no headword of the form /zoHtori/ in H2 or in *NKD*.

mizu-toru-tama

H2: *midzu-toru-tama* 水精 crystal, quartz

Typically written 水取玉 (*Kōjien*, *Daijirin*). This example must be a frozen phrase meaning ‘jewel that catches water’, but *NKD* simply lists it as a headword and provides no explanation.

toshi-totta

H2: not listed

What Lyman intended here is almost certainly /toši+toQ-ta/ 年取った, the past-tense form of the N+V=V compound verb /toši+tor-u/ ‘to grow old’.

bō-tsukai

H2: 棍手 a peddler of quack medicines, who, to attract buyers, exhibits his skill in the use of the club

Typically written 𠵼遣い (Kōjien; not listed in *Daijirin*).

hebi-tsukai

H2: 弄蛇者 a serpent-charmer, one that plays with snakes

Typically written 𧈧遣い (Kōjien, *Daijirin*).

izuna-tsukai

H2: *izuna-tsukai* 役鬼者 a sorcerer, a magician

Typically written 飯綱使い (Kōjien, *Daijirin*).

? sora-tsukau

H2: to feign, sham, pretend, make-believe, dissemble

This example is not listed as a headword in *Kōjien*, *Daijirin*, or *NKD*, but these three dictionaries all list the idiomatic phrase /sora o cuka-u/ 空を使う, with the accusative particle between the noun and the verb. The H3 entry for *sora-tsukau* labels it colloquial, and this suggests that it was just the phrase with the particle omitted rather than a true N+V=V compound.

bin-tsuke

H2: 髮油 pomatum, or ointment for the hair

Typically written 鬢付け (Kōjien, *Daijirin*).

hada-tsuke

H2: 褌 the pad beneath the saddle, also a shirt or garment worn next to the skin

Typically written 肌付け (Kōjien, *Daijirin*).

hi-tsuke

H2: 火付 setting on fire, an incendiary

kado-tsuke

H2: a person who goes about from house to house playing on the guitar and singing; a minstrel

NKD lists only /kado+zuke/ as a headword but gives /kado+cuke/ as an alternative pronunciation. *Kōjien* and *Daijirin* list only /kado+zuke/, written 門付け.

kako-tsuke or *kako-tsukeru*

H2: ^[1] [noun] 託 pretext, pretence, excuse

^[2] [verb] 託 to make as a pretext, pretence, excuse; make believe

There is no proposed etymology in the *NKD* entry. Martin (1987:702) lists /kakoc-u/ 託つ ‘to bemoan’, which is typically written with the same kanji,

and notes the semantic resemblance, but he offers no etymological suggestion. This shorter verb also appears as a headword in H2 (but with no kanji). In any case, it is plausible that a late-19th-century speaker would have seen /kakocuke-ru/ as ending with the verbal element /cuke-ru/.

kane-tsuke-ishi

H2: 試金石 a touch-stone

Typically written 〔金付け石〕 (*Kōjien*, *Daijirin*). Lyman had “kane-, ishi-” here, but this is clearly an error, as the deviation from alphabetical order suggests. Lyman’s count of examples ending *-tsuke* should be 13 rather than 14.

jīn-suke

H2: jealousy

Typically written 〔甚助〕 (*Kōjien*, *Daijirin*). Lyman had “jīn-” in his group of items ending with “TSUKE,” and the headword in H2 is romanized (jintsuke), but this is an error in H2. It was corrected to (jinsuke) in H3. No headword of the form /jīNcuke/ is listed in *NKD*. The *NKD* entry says /jīN/ comes from /jīN+bari/ 腎張り ‘lasciviousness; greed’, using the element /suke/ to create a nickname-like noun denoting a person who has such desires (see the explanation for *fuku-suke* above). Modern dictionaries give ‘jealous guy’ as one meaning of /jīNsuke/.

ki-tsuke

H2: 氣付 anything which cheers or enlivens the spirits, cordial

me-tsuke

H2: 目附 the name of a class of government officers of different ranks in the government of the *shōguns*, whose duty it was to keep an eye on other officials and report to the government; a public censor, or spy

Typically written 〔目付け〕 (*Kōjien*, *Daijirin*).

muku-tsuke

H2: hairy and coarse, low, vulgar, and dirty

The H2 entry gives this item as an adjective with classical forms only (adnominal *mukutsuke-ki*, adverbial *mukutsuke-ku*, conclusive *mukutsuke-shi*). *NKD* lists both this obsolete adjective (using the classical conclusive form /mukucuke-ši/ むくつけし as the citation form) and its stem /mukucuke/ (attested as an adjectival noun) as headwords. Small modern dictionaries sometimes list the classical adnominal form as a headword and classify it as an adnominal modifier (*rentai-shi* 連体詞), illustrating with examples like /mukucukeki otoko/ むくつけき男 ‘coarse and uncultured man’ (Kondō and Takano 1986). *NKD* offers no etymology for the stem /mukucuke/, but Lyman must have assumed that /cuke/ was verbal. The definitions in modern dictionaries do not include the notion of hairiness,

and the H2 definition suggests that Hepburn's consultants may have folk-etymologized the first two syllables as /muku/ 兪 'shaggy hair', which does not occur as an independent noun but appears as the first element in modern Tōkyō /muku+inu/ 兪犬 'shaggy dog'.

ne-tsuke

H2: 根付 a kind of carved button, used for suspending the tobacco pouch to the belt

shimo-tsuke

H2: 下野花 a species of *Spiraea*

Typically written (下野) (*Kōjien*, *Daijirin*). *Shimotsuke* is an old province name, and according to *Daijirin*, the flower (*Spiraea japonica*) is so called because it is native to that area. Since the /cuke/ at the end of this word is not verbal etymologically (see *Shimo-tsuke* in the Etymological Suggestions section at the end of this appendix), it would have to be folk-etymologized for it to be relevant here.

te-tsuke

H2: 手付 money paid in advance to confirm a bargain, earnest money

aka-tsuki

H2: 曉 the dawn of day, day-break

The first element of this word is etymologically related to /akaru-i/ 明るい 'bright' (Martin 1987:379). Both the *NKD* entry and Martin say that the second element is etymologically the same as the modern noun /toki/ 時 time. Lyman must have assumed that /cuki/ was related to a verb (probably /cuk-u/ 着く 'to arrive'), and this is a reasonable folk etymology.

basa-tsuku

H2: dry to the feel, not soft, moist, or oily

Typically written (ばさつく) (*Kōjien*, *Daijirin*). Despite the absence of the English infinitive marker *to* in the definition, H2 lists this item as a verb. Initial /basa/ is mimetic. *NKD* lists the verbal second element /cuk-u/ as a headword, and labels it a suffix, noting that it typically attaches to a mimetic item to yield a verb. *Daijirin* says it is etymologically the same as /cuk-u/ 付く 'to become attached'. The mimetic+/cuk-u/ pattern seems to have been more productive in the late 19th century than it is today. Of the 27 items on Lyman's list that exemplify the mimetic+/cuk-u/ pattern, for 16 a related mimetic (or quasi-mimetic) adverb is listed in a dictionary for elementary-school students (Saeki and Mabuchi 1987), but for only for 7 of these 16 is the corresponding mimetic

+/cuk-u/ verb listed as a headword in this dictionary. Hamano (1998:56–57) says this /cuk-u/ attached only to CVCV mimetic roots.

beta-tsuku

H2: to be sticky, glutinous, adhesive, to stick

Typically written ⟨べたつく⟩ (*Kōjien*) or ⟨べたつく⟩ (*Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* just above).

biku-tsuku

H2: to start, jerk or wince involuntarily

Typically written ⟨びくつく⟩ (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

bira-tsuku

H2: to wave and flutter, as a flag in the wind

Typically written ⟨びらつく⟩ (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

biri-tsuku

H2: to smart, prick, gripe; to be tangled as a thread

Typically written ⟨びりつく⟩ (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

bura-tsuku

H2: to be idly passing the time, to be without object or employment

Typically written ⟨ぶらつく⟩ (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

chira-tsuku

H2: 閃 to flicker, to twinkle, to be dazzled, flutter

Typically written ⟨ちらつく⟩ (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

fu-tsuki-ai

H2: 不付合 no friendship, no intercourse, no intimacy, distant or cool to each other

The second element in this example, /cuki+ai/ 付き合い ‘acquaintance; socializing’, is a V+V=N compound based on /cuk-u/ ‘to become attached’ and /a-u/ ‘to come together’. The V+/a-u/ pattern is a productive way of producing compound verbs with reciprocal meaning (Martin 1975:441–442). Rendaku in this example would not violate Lyman’s Law, but it would violate the Right-Branch Condition (see §7.2.3, especially Table 7.6).

fuda-tsuki

H2 [s.v. *fuda*]: 札付 labeled, ticketed

fura-tsuku

H2: to be shaky, trembling, unsteady, loose, tottering

Typically written 〈ふらつく〉 (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

giro-tsuku

H2: to be bright, shining, glittering

Typically written 〈ぎろつく〉 (*Kōjien*; not listed in *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

gota-tsuku

H2: to be jumbled, confused, mixed together

Typically written 〈ごたつく〉 (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

gura-tsuku

H2: to be fickle, vacillating, unsteady, shaky, unsettled, wavering

Typically written 〈ぐらつく〉 (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

gudo-tsuku

H2: to loiter, to dilly-dally, to be slow and dilatory

This item is not listed in *Kōjien* or *Daijirin* and is presumably obsolete, but it does appear as a headword in *NKD*, written 〈ぐどつく〉. It is probably another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

guzu-tsuku

H2: *gudzu-tsuki* to grumble, complain

Typically written 〈ぐずつく〉 (*Kōjien*) or 〈愚図つく〉 (*Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

guta-tsuku

H2: to be limber

Typically written 〈ぐたつく〉 (*Daijirin*; not listed in *Kōjien*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

hyoro-tsuku

H2: *hiyoro-tsuki* to limp, stagger

Typically written 〈ひよろつく〉 (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

? *iki-tsuki*

H2: 休息 *breathing time, time of resting from work, recess*

NKD lists the verb /iki+zuk-u/ 息衝く ‘to breathe’ and the corresponding noun /iki+zuki/ 息衝き ‘breathing’ as headwords, both with *rendaku* and with no mention of alternative pronunciations. The phrase /iki o cuk-u/ 息を吐く ‘to let out a breath’ appears in the *NKD* entry for /iki/ ‘breath’, and the same phrase appears in the *Daijirin* entry for /iki/ with the accusative particle /o/ in parentheses, indicating that it can be left out, but there is no corresponding noun /iki+cuki/ in either dictionary. *NKD* also lists the V+V=V compound verb /iki+cuk-u/ 行き着く ‘to arrive’, but it seems very unlikely that this is what Lyman intended, since it does not appear in H2.

ira-tsuku

H2: 苛着 to be excited, impatient, peevish

Typically written 〈苛つく〉 (*Kōjien*, *Daijirin*), although initial /ira/ is mimetic. This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

jara-tsuku

H2: to be playful, sportive, romping, frolicsome

Typically written 〈戯つく〉 (*Kōjien*) or 〈じゃら付く〉 (*Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

ji-tsuki

H2: [verb] 地著 to be a permanent resident, or be fixed to a place by owning house or land

Although H2 lists the headword *ji-tsuki* only as a verb, *NKD* lists only the corresponding noun, so I have given the noun here. Typically written 〈地付き〉 or 〈地着き〉 (*Kōjien*, *Daijirin*).

? *kabi-tsuki* or *kabi-tsuku*

H2: 黴著 to become mouldy, or mildewed

No headword of the form /kabicuki/ or /kabicuku/ appears in *NKD*. The headword in H2 is presumably the phrase /kabi ga cuk-u/ 黴がつく ‘mold attaches’ with the nominative particle /ga/ omitted. The first H2 kanji (Unicode 24FA7) is not included in most Japanese fonts.

kizu-tsuku

H2: *kidzu-tsuki* 傷 to wound, hurt, to inflict injury

H2 mistakenly defines this verb as transitive. This error could be due to the fact that the classical conclusive form of the transitive counterpart /*kizu+cuke-ru*/ is /*kizu+cuk-u*/.

kira-tsuku

H2: glittering, shining, sparkling, brilliant

Typically written (きらつく) (*Kōjien*, *Daijirin*). Despite the adjectives in the definition, H2 lists this item as a verb. This is another example of the mimetic +/*cuk-u*/ pattern (see the explanation for *basa-tsuku* above).

kitsu-tsuki

H2: woodpecker

Typically written (啄木鳥) (*Kōjien*, *Daijirin*), but the kanji are etymologically and morphologically misleading. There is no hyphen in the H2 headword, but Lyman had “*kitsu-*”, implying that the second element is /*cuki*/ . In fact, this word is a combination of noun /*ki*/ 木 ‘tree; wood’ and the nominal form based on the verb /*cucuk-u*/ 突く ‘to peck’. Despite Lyman’s mistaken analysis, /*ki+tsutsuki*/ does belong here; it is a compound of the right type (N+V=N), and it does not show *rendaku*.

kyoro-tsuku

H2: *kiyoro-tsuki* to stare, gape about, to peer, or gaze around indecently

Typically written (きよろつく) (*Kōjien*, *Daijirin*). This is another example of the mimetic+/*cuk-u*/ pattern (see the explanation for *basa-tsuku* above).

kome-tsuki

H2: 米搗 a person who cleans rice by pounding it in a mortar

kose-tsuku

H2: to be fond of little, trifling or petty matters

Typically written (こせつく) (*Kōjien*, *Daijirin*). This is another example of the mimetic+/*cuk-u*/ pattern (see the explanation for *basa-tsuku* above).

mago-tsuki

H2: to move about in a confused, uncertain, or perplexed manner; not knowing what to do

Lyman had “*maga-*” here, but this is clearly an error. No headword of the form /*magacuki*/ or /*magacuku*/ appears in H3 or in *NKD*, and Yanaike (1991:73) is surely correct that /*mago+cuk-u*/ (listed as a headword in H2) is what Lyman intended. This is another example of the mimetic+/*cuk-u*/ pattern (see the explanation for *basa-tsuku* above).

me-tsuki

H2: 目貌 the expression of the eye

Typically written 〈目付き〉 (*Kōjien*, *Daijirin*).

na-tsuku

H2: 懐 to be friendly, familiar or intimate; social, to be tame, domesticated

NKD lists /nacuk-u/ as a headword but gives /nazuk-u/ as an alternative pronunciation. Martin (1987:733) suggests tentatively that the first element is etymologically a reduced form of the stem of (the ancestor of) the verb /nare-ru/ 慣れる 'to become accustomed'. If so, this item is etymologically appropriate for this sub-section, but it presumably was not a synchronic compound for late-19th-century speakers.

nawa-tsuki

H2: 縄付 a person in bonds, a criminal

nicha-tsuku

H2: to be sticky, adhesive, clammy

Typically written 〈こちゃつく〉 (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

nura-tsuku

H2: 滑著 to be slippery, smooth, oily, glabrous, lubricated

Typically written 〈ぬらつく〉 (*Kōjien*) or 〈滑つく〉 (*Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

otoko-tsuki

H2: 男付 manly bearing or appearance

seka-tsuku

H2: to be impetuous, driving, or always in a hurry

Typically written 〈せかつく〉 (*Daijirin*; not listed in *Kōjien*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

? sen-tsuki

H2: a machine for cutting tobacco fine for smoking

This item appears unchanged in H3, but no headword of the form /seNcuki/ is listed in *NKD*.

set-tsuku

H2: to dun, to hasten, urge or hurry one in doing anything

Typically written (責っ付く) (*Kōjien*) or (責付く) (*Daijirin*), although some dictionaries give just hiragana (せつつく). The *NKD* entry for this example says that it developed from /se+cuk-u/ 責付く, which many dictionaries list as an alternative pronunciation. The /Q/ in /seQ+cuk-u/ is presumably just mildly emphatic, but this form is irrelevant here because /Q/ makes rendaku impossible (see §7.4.7). The form without /Q/ would be synchronically relevant, assuming that speakers see it as ending in /cuk-u/, although the first element /se/ is opaque. Perhaps it is a truncation of /sek-u/ 急く ‘to hurry’.

soko-tsuki

H2: 底付 sticking to the bottom, as any thing cooking in a pan or pot; burnt, charred

sowa-tsuku

H2: to be restless, inattentive, easily diverted from any object

Typically written (そわつく) (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

ta-tsuki

H2: 手著 (from *Te*, hand, and *tsuki*, to hold) something for the hand to lay hold of, a hold, support, expedient, way

NKD lists both /ta+cuki/ and /ta+zuki/ as headwords, with the entry for the former giving just a cross-reference to the latter. Neither form is in common use in Tōkyō today. Typically written with the *ateji* (方便) (*Kōjien*, *Daijirin*). Hepburn’s etymology is uncontroversial (Martin 1987:544).

teratsu-tsuki

H2: a wood-pecker

Typically written (寺啄) (*Kōjien*, *Daijirin*). Although Lyman had “teratsu-”, implying that the second element is /cuki/, this word is a combination of /tera/ 寺 ‘temple’ and the nominal form based on the verb /cucuk-u/ 突く ‘to peck’ (see the explanation for *kitsu-tuki* above). Despite Lyman’s mistaken analysis, /tera+tsutsuki/ does belong here; it is a compound of the right type (N+V=N), and it does not show rendaku.

uka-tsuku

H2: 浮 to be heedless, giddy, volatile, whimsical, fitful, capricious, erratic

Typically written (浮かつく) (*Daijirin*; not listed in *Kōjien*), but this kanji is *ateji*. Initial /uka/ is mimetic, and this word is another example of the mimetic +/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

uro-tsuku

H2: to be bewildered, perplexed, confused

Typically written 〈うろつく〉 (*Kōjien*, *Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

uwa-tsuku

H2: to be fickle, light and flighty

Typically written 〈うわつく〉 (*Kōjien*) or 〈浮つく〉 (*Daijirin*). This is another example of the mimetic+/cuk-u/ pattern (see the explanation for *basa-tsuku* above).

ken-tsuku

H2: scolding, reprimand, rating

Typically written 〈剣突〉 (*Kōjien*) or 〈けんつく〉 (*Daijirin*).

shā-tsuku

H2: *shaa-tsuku* an impudent fellow, shameless person

This item is listed as a headword in *NKD*, written 〈洒つく〉 and classified as an adjectival noun, although the entry suggests that it could also be used as an ordinary noun. Initial /šah/ is mimetic. It is not clear why this item has the superficial form of a verb, but Lyman should not have included it in this subsection.

hana-tsukuri

H2: 花匠 a maker of artificial flowers; a flower gardener

Typically written 〈花作り〉 (*Kōjien*, *Daijirin*).

niwa-tsukuri

H2: 庭作 a gardener

yumi-tsukuri

H2: 弓作 a bow maker

Typically written 〈弓造り〉 (*Kōjien*, *Daijirin*).

cha-tsumi

H2: 茶工 a person who gathers tea leaves from the tree

Typically written 〈茶摘み〉 (*Kōjien*, *Daijirin*).

? na-tsumu

H2: same as *nadzumi*: 拘泥 to be attached to or adhere to anything; obstinately or bigotedly attached to, addicted to; cleave, cling to

NKD lists only /nazum-u/, with *rendaku*, as a headword and does not give /nacum-u/ as an alternative pronunciation. Typically written 〈泥む〉 (*Kōjien*, *Daijirin*). In any case, this verb is not etymologically appropriate for this sub-

section (Martin 1987:734), but Lyman probably folk-etymologized it as related to a verb of the form /cum-u/. H2 lists intransitive /cum-u/ 積む ‘to pile up, accumulate’ as a headword, which seems semantically plausible, although /na/ remains opaque.

ei-shireru

H2: *yei-shire* 酔愚 to become foolish, or silly from intoxication

The Modern Tōkyō form corresponding to this example is /yoi+šire-ru/, typically written 〈酔いゝ痴れる〉 (*Kōjien*, *Daijirin*). For an explanation of the modern Tōkyō verb /yo-u/ 酔う ‘to get drunk’, see *ei-fusu* above in this sub-section. As explained above in the comments on *ei-same*, the first element of /ei+šire-ru/ is arguably a deverbal noun, but given how Lyman treated other examples of the same type, he should have treated this example as a V+V=V compound, like *yase-gareru* in sub-section 3[a] above (cf. the deverbal noun /yase/ ‘lean-ness’ based on /yase-ru/ 痩せる ‘to become lean’). In any case, since Lyman listed only examples with *rendaku* in sub-section 3[a], /ei+šire-ru/ would not have appeared there.

ei-taoreru

H2: *yei-taore* 酔倒 to fall down from intoxication

The Modern Tōkyō form corresponding to this example is /yoi+taore-ru/ 酔い倒れる. For an explanation of the modern Tōkyō verb /yo-u/ 酔う ‘to get drunk’, see *ei-fusu* above in this sub-section. *NKD* lists a corresponding noun as a headword both for the older and for the newer form of the verb: /ei+taore/, /yoi+taore/. Both noun entries give an alternative pronunciation with *rendaku*: /ei+daore/, /yoi+daore/. As explained above in the comments on *ei-shireru*, Lyman probably should have treated this example as a V+V=V compound.

e-toki

H2: *ye-toki* 会説 explanation, illustration

Typically written 〈絵解き〉 (*Kōjien*, *Daijirin*).

fu-soroi

H2: 不揃 uneven, not equal, not uniform; not full, not complete in number

Only /fu+zoroi/, with *rendaku*, is listed as a headword in *NKD*, but the entry gives /fu+soroi/ as an alternative pronunciation when the word functions as an adjectival noun.

fu-temawari

H2: 不手廻 not active in doing, not turning the hand to all the work that is required of one, not able to do perfectly, completely or thoroughly

Typically written 〈不手回り〉 (*Kōjien*; not listed in *Daijirin*). Rendaku in this example would not violate Lyman's Law, but it would violate the Right-Branch Condition (see §7.2.3, especially Table 7.6).

fu-tsuriai

H2: 不釣合 not matching, disproportioned, not balancing

Rendaku in this example would not violate Lyman's Law, but it would violate the Right-Branch Condition (see §7.2.3, especially Table 7.6).

[[*asakaranu*]]

This item, corresponding to Modern Tōkyō /asa-karanu/ 浅からぬ 'not shallow', appears at this point in Lyman's list, but it is clearly a mistake. It is out of alphabetical order, it is not an example of the relevant type, and it would make the number of items in this part of the list 51 instead of the 50 that Lyman counted.

hana-hiru

H2: 嚏 to sneeze

Typically written 〈嚏ひる〉 (*Kōjien*, *Daijirin*), this example is obsolete. The H2 kanji (Unicode: 4D91) is not included in most Japanese fonts. *NKD* and Martin (1987:684) give the etymological elements as (the ancestors of) /hana/ 漢 'mucus' (</hana/ 鼻 'nose') and /hi-ru/ 嚏る 'to sneeze' (</hir-u/ 放る 'to eject from the body', despite the different conjugation class).

? *hō-fukurasu*

H2: to distend or puff out the cheeks, to pout, to look sullen or displeased

No headword of the form /hoHfukuraši/ or /hoHfukurasu/ appears in *NKD*. The headword in H2 is presumably the phrase /hoH o fukuras-u/ 頬を膨らす 'to puff out one's cheeks' with the accusative particle /o/ omitted.

hō-kamuri

H2: 頬冠 covering the head with the handkerchief

Typically written 〈頬被り〉 (*Kōjien*, *Daijirin*). The form /hoH+kamuri/ is listed as a headword in *NKD*, but the entry gives a cross-reference to /hoH+kaburi/. For the verb related to the second element, only the form /kabur-u/ 被る 'to put on the head' remains in common use in modern Tōkyō (see the discussion of Early Middle Japanese variability between /m/ and /b/ in §7.5.2).

io-tsuri

H2: *iwotsuri* 漁人 an angler, fisherman

The modern Tōkyō form corresponding to this example is /uo+curi/, typically written 〈魚釣〉 (*Kōjien*, *Daijirin*). The alternative forms for 'fish' that would be /io/ and /uo/ in modern Tōkyō both remained in use for many centuries. In

OJ, only ^{OJ}/uwo/, the ancestor of the latter, is attested in phonograms, but Martin (1987:563) gives ^{OJ}/iwo/ as the ancestor of both: [iwo]>[io], [iwo]>[uwo]>[uo]. Only /uo/ remains in use in modern Tōkyō, appearing as an element in many compounds, although /sakana/ 魚 has ousted it as the ordinary independent word for ‘fish’.

kari-some

H2: 仮初 transient, small in degree, trivial, trifling, little, slight

ki-kori

H2: 樵夫 a wood-chopper, woodman, one who cuts timber in the forests

Typically written 〈樵〉 (*Kōjien*, *Daijirin*), although *Daijirin* gives 〈樵夫〉 as an alternative. The second element is derived from a verb that is obsolete, and the etymology of this example is further obscured by the kanji (cf. /ki/ 木 ‘tree’ and /kor-u/ 樵る ‘to cut wood’). The corresponding verb /kikor-u/ 樵る ‘to cut wood’ also appears as a headword in *NKD*, although it too is obsolete. Martin (1987:713) gives the etymology of /kor-u/ as /ko/ (~/ki/) ‘tree, wood’ followed by a verb formant (i.e., derivational suffix), noting explicitly that this analysis means that /kor-u/ is not related to /kir-u/ 切る ‘to cut’ or to /kar-u/ 刈る ‘to cut, to reap’. He also notes that /kor-u/ is synonymous with /kikor-u/. An OJ verb corresponding to the latter is attested and implies that the etymology of /kor-u/ was already opaque.

kome-kami

H2: 蟬谷 the temple or side of the forehead

Typically written 〈顛顛〉 or 〈蟬谷〉 (*Kōjien*, *Daijirin*). The *NKD* entry for this example says it is etymologically based on (the ancestors of) /kome/ 米 ‘uncooked rice’ and /kam-u/ 噛む ‘to chew’ (thus denoting the part of the face that moves when one chews rice). This item is therefore etymologically appropriate for this sub-section, but the kanji typically used to write it obscure the etymology, suggesting that it was not a synchronic compound for late-19th-century speakers.

koto-kireru

H2: 事切 to end, conclude, finish, to die

koto-kawaru

H2: 事換 to be different, to be dissimilar, distinct, unlike

Typically written 〈事変わる〉 (*Daijirin*; not listed in *Kōjien*).

koto-sara ni

H2: 殊更 particularly, in an especial manner

Lyman had “kotosaranu” here, but this is clearly an error. H2 lists *koto-sara-ni* as a headword, but no headword of the form /kotosaranu/ appears in H2 or in *NKD*. Since /sara/ is clearly not verbal, this item does not belong here. The spelling error may have led Lyman to assume that it was /koto+sar-anu/, a classical negative form of the obsolete N+V=V compound /koto+sar-u/ 事去る ‘to recede into the past’.

koto-taru

H2: 事足 to answer the purpose, will do, to be content, satisfied; sufficient, enough

kubi-kukuri

H2: 縊 to hang one's self by the neck

H2 lists this item only as a verb, but *NKD* lists only the corresponding noun as a headword. Typically written 〈首縊り〉 (*Kōjien*, *Daijirin*). The headword in H2 is presumably the phrase /kubi o kukur-u/ 首を括る ‘to hang oneself’ with the accusative particle /o/ omitted.

kuchi-sui

H2: 接吻 to kiss

H2 lists this item only as a verb. *NKD* lists only the corresponding noun as a headword, but definition 6 under the headword /su-u/ 吸う ‘to suck’ includes 〈口吸う〉, which presumably represents /kuči+su-u/. The noun is typically written 〈口吸い〉 (*Kōjien*), although *Daijirin* gives 〈口吸ひ〉, with the pre-reform spelling 〈ひ〉 (*hi*), and this implies that the word is obsolete.

me-kuramashi or *me-kuramasu*

H2: ^[1] [verb] 目暗 to blind, hoodwink, to cheat, impose upon

No headword of the form /mekuramasu/ appears in *NKD*. The H2 headword is probably a causative form derived from /me+kuram-u/ 目眩む ‘to get dizzy’. This compound is obsolete, but the corresponding phrase /me ga kuram-u/ 目が眩む is in common use.

^[2] [noun] 術人 a juggler, one who performs sleight of hand tricks

Typically written 〈目眩まし〉 (*Kōjien*, *Daijirin*).

mizu-sumashi

H2: *midzu-sumashi* 鼓虫 a kind of insect which moves about on the surface of water

Typically written 〈水澄まし〉 (*Kōjien*, *Daijirin*).

mizu-tamari

H2: *midzu-tamari* a puddle of water

Typically written 〈水溜まり〉 (*Kōjien, Daijirin*).

mizu-tame

H2: *midzu-tame* 水溜 a rain-tub, a cistern for holding water

mio-tsukushi

H2: same as *mio-gui*; 濤標 a graduated post planted in shallow water to show the height of the tide, or mark the channel

According to the entry in *NKD*, the OJ ancestor of this example was ^{OJ}/miwo tu kusi/ (two nouns connected by a long obsolete genitive particle). The corresponding Modern Tōkyō nouns are /mio/ 濤 ‘waterway, channel’ and /kuši/ 串 ‘skewer’. For this item to be relevant here, Lyman must have mistakenly analyzed it as ending with a nominal form based on the verb /cukus-u/ 尽くす ‘to do fully; to serve’. Perhaps Lyman was misled by the fact that the phrase ^{EMJ}/miwo tukus-i/ ‘doing one’s utmost’ (cf. modern Tōkyō /mi/ 身 ‘body; self’) became a conventional pun for the example cited here.

? *muka-bara-tatsu*

H2: to flash up in sudden anger

No headword of the form /mukabaratacu/ appears in *NKD*. The headword in H2 is presumably the phrase /muka+bara ga tac-u/ 向腹が立つ ‘to get angry for no reason’ with the accusative particle /o/ omitted.

nezumi-koroshi

H2: *nedzumi-koroshi* 鼠殺 rats-bane, poison for killing rats

netsu-samashi

H2: 熱醒 a medicine that cures a fever, febrifuge

Typically written 〈熱冷まし〉 (*Kōjien, Daijirin*).

omo-hoeru

H2: *omohoye* 所思 to think, to perceive, to regard

H2 marks this item as obsolete, and *NKD* lists only the classical conclusive form as a headword, written 〈おもほゆ〉 (*o mo ho yu*) in hiragana. The expected modern Tōkyō conclusive form would be /omooeru/ (Martin 1987:741). Etymologically, this example is a passive form derived from the ancestor of /omo-u/ 思ふ ‘to think’. Frellesvig (2010:63) notes that while the expected Old Japanese conclusive form ^{OJ}/omop+ay-u/ is attested, ^{OJ}/omop+oy-u/ was much more common. For this item to be relevant here, Lyman must have thought that its second element was based on a verb with the conclusive form /hoe-ru/, but the only candidate is semantically implausible /hoe-ru/ 吠える ‘to bark’.

sai-kaeru

H2: *sai-kayeri* 再廻 to return again

Typically written 〈再返る〉 (*Kōjien*; not listed in *Daijirin*).

sayo-fukeru

H2: 夜深 late in the night

Despite the noun-like definition, H2 lists this item only as a verb. *NKD* lists only the corresponding classical conclusive form /sayo+fuk-u/ 小夜更く 'to become late at night' as a headword, implying that this item is obsolete. The first element is etymologically /sa+yo/ 小夜 (cf. /yo/ 夜 'night'), where /sa/ is an essentially meaningless prefix (according to the *NKD* entry for /sa/). The verb /fuke-ru/ 更ける 'to grow late' is listed as a headword in H2 and is still in use.

shio-hi

H2: 潮乾 the beach over which the tide ebbs and flows

Typically written 〈潮干〉 (*Kōjien*, *Daijirin*).

shira-keru

H2: to become white

Typically written 〈白ける〉 (*Kōjien*, *Daijirin*). Martin (1987:792) treats the /ke/ in /šira+ke-ru/ as a verb formant (i.e., etymologically a derivational element). It is not clear how Lyman analyzed it. The H2 entry gives the adverbial form /šira+ke/, and the only independent verb with the adverbial form /ke/ is classical /ke-ru/ 蹴る 'to kick', which was reanalyzed long ago as /ker-u/. In any case, 'kick' is a semantically implausible second element here.

shiro-kae

H2: *shiro-kaye* barter, exchange, swapping one thing for another

NKD lists only the classical conclusive form /širo+ga-u/, with *rendaku*, as a headword, although it gives /širo+ka-u/ as an alternative pronunciation. The classical form of the *NKD* headword implies that it is obsolete, and so does its pre-reform spelling: 〈代替ふ〉, with final 〈ふ〉 (*fu*).

shita-shimi or *shita-shimu*

H2: ^[1] [noun] 親 friendship, amity, harmony, concord

^[2] [verb] 親 to be friendly, amicable, or harmonious

This verb is obviously derived from the adjective /šitaši-i/ 親しい 'intimate', and /m/ must have been what Martin (1987:792) calls a formant (i.e., a derivational suffix). Martin (1987:840) connects the adjective root etymologically to /šita/ 下 'below; inside' (cf. /šita-u/ 慕う 'to love dearly'). Martin (1987:818) calls /ši/ "the major adjective-stem formant" (see the introduction to sub-section 4(c) below for an explanation). Thus, the verb /šita+ši+m-u/ is not a compound etymologically,

but the *NKD* entry notes that the etymology /šita/ ‘heart’ (<‘inside’) plus /šim-u/ 染む ‘to permeate’ (obsolete for modern Tōkyō /šimi-ru/ 染みる ‘to permeate’) has been suggested, and Lyman may have accepted this folk etymology.

shita-tameru

H2: 認 to write

NKD lists both the verb and the corresponding noun /šitatame/ 認め ‘writing down’ as headwords but offers no etymology. Despite the single kanji and the absence of a hyphen in the H2 headword, Lyman presumably saw /šitatame-ru/ as containing a second element /tame-ru/, and /tame-ru/ 貯める ‘to amass’ is a plausible candidate.

tadzu-saeru

H2: *tadzusaye* 携 to carry in the hand, to carry

NKD offers no definite etymology for this example. Despite the single kanji and the absence of a hyphen in the H2 headword, Lyman presumably saw it as containing a second element /sae-ru/, and obsolete /sae-ru/ 触える ‘to touch’ is a more plausible candidate than /sae-ru/ 冴える ‘to become clear; to become skilled’.

ta-kumi or *ta-kumu*

H2: ^[1] [(adjectival) noun] 巧 skilful, clever, adroit, ingenious, artful
^[2] [verb] 巧 to devise, plan, contrive, invent

Martin (1987:762) gives the etymology of this verb as the ancestor of the noun /ta/~te/ 手 ‘hand’ plus the ancestor of the verb /kum-u/ 組む ‘to put together’. The H2 headwords are thus etymologically appropriate for this sub-section of Lyman’s article. The single kanji (巧) obscures the etymology, of course, and these two words were presumably not synchronic compounds for late-19th-century speakers.

ta-kuramu

H2: to devise, scheme, plan

Typically written (企む) (*Kōjien*, *Daijirin*). *NKD* lists both the verb and the corresponding noun /takurami/ 企み ‘plan, scheme’ as headwords. Lyman actually had “takuromi” here, but this is an error in H2 (which remains uncorrected in H3). No headword of the form /takuromi/ or /takuromu/ is listed in *NKD*. Martin (1987:762) tentatively suggests that /takuram-u/ is etymologically the same as /takum-u/ 巧む (the ancestor of /ta/~te/ 手 ‘hand’ plus the ancestor of the verb /kum-u/ 組む ‘to put together’; see the item just above on Lyman’s list), but with /ra/ infix. Even if this etymology is correct, the single kanji (企) obscures it, and a present-day speaker certainly would not analyze

/takuram-u/ this way. Lyman presumably saw it as containing a second element /kuram-u/, but the only independent verb of this form is /kuram-u/ 眩む 'to get dizzy', which is a semantically implausible folk etymology.

ta-kuwae or *ta-kuwaeru*

H2: ^[1] [noun] *takuwaye* 蓄 a supply store, provision

^[2] [verb] *takuwaye* 貯 to store up, to lay up, to keep on hand, to hoard

The two kanji in the H2 entries are both possible for the noun and for the verb: (蓄え) or (貯え); (蓄える) or (貯える) (*Kōjien*, *Daijirin*). Martin (1987:762) gives the etymology of the verb as the ancestor of /ta~/te/ 手 'hand' plus the ancestor of the verb /kuwae-ru/ 加える 'to add', which means these H2 headwords are etymologically appropriate for this sub-section of Lyman's article. The single kanji (蓄) or (貯) obscures the etymology, of course, and these two words were probably not synchronic compounds for late-19th-century speakers.

ta-suke or *ta-sukeru*

H2: ^[1] [noun] 助 salvation, preservation, deliverance; succor, help, aid, assistance

^[2] [verb] 助 to save, deliver, succor, preserve, rescue; to aid, assist

Martin (1987:764) gives the etymology of the verb as the ancestor of /ta~/te/ 手 'hand' plus the ancestor of the now uncommon verb /suke-ru/ 助ける 'to help'. Thus, these H2 headwords are etymologically appropriate for this sub-section of Lyman's article, but the single kanji (助) obscures the etymology, and the two words are probably not synchronic compounds. The existence of /te+dasuke/ 手助け 'help' is strong evidence that speakers do not analyze the /ta/ in /tasuke/ as /ta~/te/ 'hand', since two consecutive instances of the same morpheme would presumably be unacceptably redundant.

ta-sukaru

H2: 助 to be saved, preserved, delivered, helped, aided

This verb is the intransitive counterpart of the verb just above (Martin 1987:764), but no independent verb corresponding to modern Tōkyō /sukar-u/ is attested. Thus, the ancestor of /tasukar-u/ was probably an analogical creation, following the pattern of other transitive/intransitive pairs, and was presumably not a synchronic compound for late-19th-century speakers.

teki-haki

H2: soon, quickly

Only /teki+paki/ is listed as a headword in *NKD*, but the entry mentions /teki+haki/ as an alternative pronunciation. Since both elements of this item are mimetic, not verbal, Lyman should not have listed it here. There are verbs

with the conclusive form /hak-u/, and Lyman presumably thought that /haki/ was related to one of these.

te-suki

H2: 手透 intervals of leisure form work

The *NKD* entry for this example leaves no doubt about the etymology of /suki/ (cf. /suk-u/ 透く ‘to have gaps’), so Lyman had this item in the right place etymologically. *Kōjien* and *Daijirin* give 〈手隙〉 and 〈手透き〉 as alternative way to write /te+suki/, and 〈隙〉 is currently the most common way to write the noun /suki/ ‘gap’, obscuring the connection to its etymological source verb. Thus, a late-19th-century speaker might not have seen the second element of /te+suki/ as verbal.

tokoro-seki

H2: filling up, encumbering or blocking up a place

The H2 entry identifies this item as an adjective, and only the classical citation form /tokoro+se-ši/ is listed as a headword in *NKD*, implying that it is obsolete. Typically written 〈所狭し〉 (*Kōjien*, *Daijirin*). The form /tokoro+se-ki/ is the classical adnominal form, and it clearly does not belong in this sub-section of Lyman’s article. Martin (1987:839–840) identifies the /se/ in this example etymologically with the first syllable of the adjective /sema+i/ 狭い ‘narrow’. There are verbs that have the modern conclusive form /sek-u/, and Lyman must have mistakenly assumed that /seki/ was related to one of these.

ya-tsureru

H2: 憔悴 to become thin, emaciated, or debilitated; to be ragged, filthy and poor in appearance

Typically written 〈寝れる〉 (*Kōjien*, *Daijirin*). Martin (1987:785) and the *NKD* entry treat /yacu/ as the root, with no morphological division after /ya/. There are verbs that have the modern conclusive form /cure-ru/, and Lyman must have mistakenly assumed that /yacure-ru/ ended with one of these.

yoko-tawaru

H2: 横 to be or lie across or athwart

Martin (1987:786) gives the etymology as the ancestor of /yoko/ 横 ‘horizontal’ plus a verb element that would have the modern Tōkyō form /tawar-u/, but no independent verb of this form is attested. Thus, the ancestor of /yoko+tawar-u/ was probably an analogically created intransitive counterpart to *yoko-taeru*, which is listed above in this sub-section (see the explanation for *ta-sukaru* above). Nonetheless, the first element /yoko/ is semantically transparent, so this item is presumably a synchronic compound of the right type, even though the second element does not occur independently.

yō-suki

H2: 用透 interval of rest, or leisure between work or business

This item is listed as a headword in *NKD*, although the only citation is from H1. As in the case of *te-suki* above, the etymological relationship to the verb /suk-u/ 透く 'to have gaps' may not be obvious, but the kanji in H2 probably encouraged Lyman to include this example in this sub-section of his article.

? *yū-suki* or *yū-suku*

H2: not listed

Lyman had "yuusuki" here, but no headword of the form /yuHsuki/ or /yuHsuku/ appears in *NKD* or in H3. This item is presumably an error, but I have not been able to come up with a candidate for what Lyman intended.

yū-sari

H2: 夕去 the night

4(b)

This second group of examples in section 4 are items that Lyman described as "reduplicated words." He reported 67 such examples with *rendaku* and 83 without, and he listed only those without *rendaku*. Most of these are mimetic and appear in H2 without kanji. The boundary between mimetic and non-mimetic is fuzzy (Hamano 1998:6–7), but I do not comment on the mimetic status of an item in this section when it is obvious.

The particle /to/ と sometimes follows a reduplicated mimetic word and marks it explicitly as adverbial, but the presence or absence of /to/ is not just a matter of simple optionality in modern Tōkyō Japanese (Hamano 1988; Asano 2003). Lyman gave 25 of the mimetic examples in this section with /to/, including four with "to" in parentheses. He gave the remaining mimetic examples without /to/, and for the most part his examples match the headwords in H2. For 23 of the 25 items that Lyman listed with /to/, the H2 headword also includes /to/. For example, Lyman had "kirakirato" corresponding to *kira-kira-to* in H2. But for two of the items that Lyman gave with "to" in parentheses, H2 has separate headwords, one with /to/ and the other without. For example, Lyman had "karakara(to)" on his list, and both *kara-kara-to* and *kara-kara* appear as headwords in H2. Only one of the mimetic items that Lyman gave without /to/ appears with /to/ in H2: Lyman had "horohoro" even though the headword in H2 is *horo-horo-to*. When Hepburn listed a mimetic headword without /to/, he clearly did not mean to imply that co-occurrence with /to/ was impossible, since many of the example sentences he provided for such words contain /to/. For

instance, in the case of *shiku-shiku*, he gave “– *to naku*, to cry in a low voice” (with /to/) and “– *itai*, to pain slightly, to prick, smart” (without /to/) as examples. At the same time, the appearance of /to/ in a mimetic H2 headword does not mean that /to/ is obligatory. For example, Lyman had “kusukusuto” corresponding to the H2 headword *kusu-kusu-to*, but the collocation /kusu+kusu wara-u/ くすくす笑う ‘to giggle’ is perfectly normal in modern Tōkyō Japanese. In short, we cannot draw any inferences from the presence or absence of /to/ in one of Lyman’s examples or in an H2 headword.

chiku-chiku

H2: prickling, sticking

Typically written 〈ちくちく〉 (*Kōjien, Daijirin*).

chira-chira

H2: in a flickering fluttering manner, twinkling, dazzling

Typically written 〈ちらちら〉 (*Kōjien, Daijirin*).

chiri-chiri

H2: 散々 scattered, dispersed

NKD lists /čiri+jiri/ as a headword with the meaning given in H2, but it also lists /čiri+čiri/ as a separate headword with a cross-reference to /čiri+jiri/, implying that the form without *rendaku* is an alternative pronunciation. Only *chiri-jiri* appears in H3. This item is based on the verb /čir-u/ 散る ‘to scatter’, so it is etymologically non-mimetic, although it is listed in a dictionary of mimetic vocabulary (Ono 1984:204). The unambiguously mimetic word /čiri+čiri/ ちりちり ‘tinkle-tinkle; shrivel-shrivel’ also exists, and it would have been appropriate for Lyman to list it here, but since it does not appear in H2 (or in H3), it is presumably not what he intended. It seems likely that Hepburn himself, and perhaps even his native-speaking consultants, had the mimetic and non-mimetic words mixed up with each other.

chiro-chiro

H2: in a flickering manner, with a short, irregular motion

Typically written 〈ちろちろ〉 (*Kōjien, Daijirin*).

choko-choko

H2: frequently, often

Typically written 〈ちょちょこ〉 (*Kōjien, Daijirin*).

fura-fura

H2: in a limber manner, unsteady, tottering, dizzy

Typically written 〈ふらふら〉 (*Kōjien, Daijirin*).

fuwa-fuwa

H2: in a light, airy, buoyant, manner, spongy, buoyantly
Typically written 〈ふわふわ〉 (*Kōjien*, *Daijirin*).

haki-haki

H2: smart, quick, active in doing, plain, distinct
Typically written 〈はきはき〉 (*Kōjien*, *Daijirin*).

hara-hara to

H2: the sound of rustling, as of silk, or of leaves blown by the wind, the sound of tears dropping, or of crying
Typically written 〈はらはら〉 (*Kōjien*, *Daijirin*).

hata-hata

H2: 螻蛄 a grasshopper
Typically written 〈蟋蟀〉 (*Kōjien*, *Daijirin*). The *NKD* entry does not give a definite etymology, but this item must have a mimetic origin, despite the kanji. It is surely related etymologically to unambiguously mimetic /hata+hata/ はたはた 'flutter-flutter'.

heko-heko

H2: pliant, limber, flexible, said of articles thin and broad, as a fan, paper, &c.
Typically written 〈へこへこ〉 (*Kōjien*, *Daijirin*).

heta-heta to

H2: limber, pliant, flexible
Typically written 〈へたへた〉 (*Kōjien*, *Daijirin*).

hi-hi

H2: 狒々 the orang-outang
This seems to be a straightforward Sino-Japanese example. The meaning is 'baboon', not 'orangutan'.

hira-hira to

H2: 片々 with a broad, wavy, or undulating motion
Typically written 〈ひらひら〉 (*Kōjien*, *Daijirin*).

hiri-hiri

H2: with a smarting or burning pain
Typically written 〈ひりひり〉 (*Kōjien*, *Daijirin*).

hita-hita

H2: the sound of water splashing

Typically written 〈ひたひた〉 (*Kōjien*, *Daijirin*).

hyoko-hyoko

H2: *hiyoko-hiyoko* hopping, as a frog; leaping

Typically written 〈ひよこひよこ〉 (*Kōjien*, *Daijirin*).

hyoro-hyoro to

H2: *hiyoro-hiyoro-to* 踉蹌 in a limping, staggering manner

Typically written 〈ひよろひよろ〉 (*Kōjien*, *Daijirin*).

hoko-hoko

H2: 燠々 warm, comfortable

Typically written 〈ほこほこ〉 (*Kōjien*, *Daijirin*).

horo-horo

H2: appearance of fruit, leaves, or drops of rain falling, or, the sound of crying

Typically written 〈ほろほろ〉 (*Kōjien*, *Daijirin*).

? hote-hote

H2: large, corpulent, big-bellied

No headword of the form /hotehote/ is listed in *NKD* or in a dictionary of mimetic vocabulary (Ono 1984). *NKD* does list /bote+bote/ ぼてぼて with a meaning matching the H2 entry, but this word would have been irrelevant for Lyman. *NKD* does, however, list /hote+Qpara/ ほてっ腹 ‘big belly’, which seems to contain the unreduplicated mimetic root /hote/.

hoto-hoto to

H2: the sound made by beating a door, rapping

Typically written 〈ほとほと〉 (*Kōjien*, *Daijirin*).

kachi-kachi

H2: the sound of hard things striking together, clashing, clacking, clicking

Typically written 〈かちかち〉 (*Kōjien*, *Daijirin*).

kaku-kaku

H2: ^[1] 斯 so, thus, this way

Typically written 〈斯く斯く〉 (*Kōjien*, *Daijirin*). This item is clearly not mimetic. For one thing, in an unambiguously mimetic root of the form CVCV, the first and second consonants are never the same (Hamano 1998:28).

^[2] 赫々 bright, shining, refulgent, glittering

NKD lists Sino-Japanese /kaku·kaku/ as a headword, but the entry just gives a cross-reference to the preferred pronunciation: /kaQ·kaku/. *NKD* and Martin (1987:434,457) agree that the unreduplicated adverb /kaku/ and modern colloquial /koH/ こう ‘in this way’ are etymologically the same ([kaku]>[kau]>[kɔ:]>[ko:]).

kara-kara (to)

H2: ^[1] *kara-kara-to* 呵々 the sound of laughter, of rattling

Typically written 〈からから〉 (*Kōjien*, *Daijirin*).

^[2] *kara-kara* dry, empty

Typically written 〈からから〉 (*Kōjien*, *Daijirin*). *NKD* has two separate headwords corresponding to the two headwords in H2, but many dictionaries, including *Kōjien* and *Daijirin*, list all the meanings in the H2 entries as sub-entries under a single headword. An etymological connection to /kara/ 空 ‘empty’ seems likely. Martin (1987:438) and *NKD* agree that this /kara/ is etymologically the same as /kara/ 殻 ‘shell; husk’.

kata-kata

H2: 片方 one of a pair, one side

This item is not an example of reduplication. It would have been appropriate for Lyman to list the mimetic word /kata+kata/ かたかた ‘clatter-clatter’ here, but since it does not appear in H2 (or in H3), it is probably not what he intended.

kechi-kechi

H2: stingy, miserly, mean

Typically written 〈けちけち〉 (*Kōjien*, *Daijirin*).

kira-kira to

H2: 煌々 glitteringly, sparkingly, brilliantly

Typically written 〈きらきら〉 (*Kōjien*, *Daijirin*).

kiri-kiri (to)

H2: ^[1] *kiri-kiri* 切々 quickly, speedily; in a cutting manner

Typically written 〈きりきり〉 (*Kōjien*, *Daijirin*).

^[2] *kiri-kiri to* a creaking sound, as of a bow when drawn to its utmost

Typically written 〈きりきり〉 (*Kōjien*, *Daijirin*). *NKD* lists all the meanings for both H2 headwords as sub-entries under a single headword. Hepburn’s “in a cutting manner” looks like a folk etymology, reflected by, or motivated by, the kanji.

kiya-kiya

H2: – *itamu* to have a twitching pain
Typically written 〈きやきや〉 (*Kōjien, Daijirin*).

kyoro-kyoro to

H2: *kiyoro-kiyoro-to* looking about stealthily, peering about
Typically written 〈きよろきよろ〉 (*Kōjien, Daijirin*).

koke-koke

H2 [s.v. *koke* fool, dunce]: *koke-koke shita* (listed without definition)

The reduplicated element here (the H2 headword) is Sino-Japanese, not mimetic: /ko-ke/ 虚仮 ‘fool’. As noted above in connection with *kaku-kaku*, in an unambiguously mimetic root of the form CVCV, the first and second consonants are never the same (Hamano 1998:28). The meaning of the phrase containing the reduplicated form in the H2 entry (*koke-koke shita*) is ‘idiotic’.

koro-koro to

H2: the sound, or appearance of anything rolling
Typically written 〈ころころ〉 (*Kōjien, Daijirin*).

kose-kose

H2: fond of little or trifling matters
Typically written 〈こせこせ〉 (*Kōjien, Daijirin*).

koso-koso

H2: secretly, clandestinely, stealthily
Typically written 〈こそこそ〉 (*Kōjien, Daijirin*).

kote-kote

H2: much, abundantly, a good deal
Typically written 〈こてこて〉 (*Kōjien, Daijirin*).

kun-kun to

H2: 薰々 sending forth a smell, or perfume
Typically written 〈くんくん〉 (*Kōjien, Daijirin*).

kura-kura

H2: dizzy, giddy, having a sensation of whirling in the head
Typically written 〈くらくら〉 (*Kōjien, Daijirin*).

kuru-kuru to

H2: 旋々 round and round, around

Typically written <くるくる> (*Kōjien, Daijirin*). The H2 entry actually has the kanji (旋族), but this is clearly an error. The H3 entry has (旋転), which normally represents the obscure Sino-Japanese word /seN·teN/ 'rotation'.

kusha-kusha

H2: 苛々 in a confused state, in disorder

Typically written <くしゃくしゃ> (*Kōjien, Daijirin*).

kusu-kusu to

H2: – *warau* to laugh at one behind his back

Typically written <くすくす> (*Kōjien, Daijirin*).

kutsu-kutsu warau

H2: *kutsu-kutsu-warau* 竊笑 to laugh secretly, or in a suppressed manner, to giggle

Mimetic /kucu+kucu/ is typically written <くつくつ> (*Kōjien, Daijirin*).

kuyo-kuyo

H2: having the mind anxiously brooding over anything, thinking long and anxiously about

Typically written <くよくよ> (*Kōjien, Daijirin*).

saku-saku to

H2: the sound of cutting anything crisp and friable

Typically written <さくさく> (*Kōjien, Daijirin*).

sara-sara (to)

H2: ^[1] *sara-sara* 更々 entirely, wholly, positively, absolutely, quite

The root in this item is not mimetic and occurs unreduplicated in the adverbial phrase /sara ni/ 更に 'in addition; (not) at all', which also appears as a headword in H2.

^[2] *sara-sara-to* like the sound, or in the manner, of rolling beads or pebbles between the hands; with a slipping, rattling, or rustling noise

Typically written <さらさら> (*Kōjien, Daijirin*).

sashitsume-sashitsume

H2: – *iru* to shoot with the bow rapidly or in quick succession

NKD lists this item not as a headword but as a sub-entry under the V+V=V compound verb /saši+cum-u/ 差し詰む 'to nock one arrow after another'. This headword is a classical conclusive form, and since the corresponding modern form is not listed, it implies that the compound verb is obsolete. It is the adverbial form that is reduplicated in Lyman's example, and reduplicating the adverbial form of a verb to express this kind of meaning is still a productive pattern

in modern Tōkyō Japanese (Martin 1975:408–409). Lyman’s example is treated as a conventional phrase (*kan’yō-ku* 慣用句) in *NKD*, suggesting that it is not a single word. However, reduplications of this type are accentually unified in modern Tōkyō Japanese, i.e., treated as a single phonological word (e.g., /ka⁺ki+kaki/ or unaccented /kaki+kaki/ ‘while writing’; cf. /ka⁺k-u/ 書く ‘to write’), although such items never show *rendaku* (see §7.5.2).

satemo-satemo

H2: the same as *satemo*; exclam. of admiration, surprise; used also in resuming a narrative that has been interrupted

This item is not mimetic. Martin (1975:793–794) describes the unreduplicated form /sate mo/ さても ‘indeed, how very’ as an adverb (cf. /sate/ さて ‘well, then’) followed by a focus particle, although dictionaries list it as a headword. Both *Kōjien* and *Daijirin* give 扱も for /sate mo/, but /sate/ (whether combined with a particle or not) is more likely to be written in hiragana. It is hard to say whether the item on Lyman’s list is a reduplicated word or just the repetition of a word. *NKD* lists it as a headword and says it has initial accent, implying /sa⁺te+mo+sate+mo/.

sate-sate

H2: exclam. of admiration or surprise

Typically written さてさて (*Kōjien*, *Daijirin*), this item is not mimetic. The base is the adverb /sate/ さて ‘well, then’, and Martin (1975:793–794) says /sate+sate/ has the same meaning as /sate mo/ さても ‘indeed, how very’ (see the explanation for the item just above). Like the item just above, *NKD* lists this item as a headword, but in this case there is no doubt that it is a reduplicated word, since the entries in other dictionaries (*Daijirin*, *Meikai*) treat it as accentually unified: /sa⁺te+sate/.

sawa-sawa to

H2: 爽々 clear, pure; the sound of flowing or rippling water

Although *Kōjien* gives the same kanji as H2, this mimetic item is usually written さわさわ (*NKD*, *Daijirin*).

saetsu-osaetsu

H2: *sayetsu-osayetsu* passing the wine-cup around

NKD lists /sai-cu osae-cu/, written さいつ押さえつ, as a sub-entry under the verb /sas-u/ 差す ‘to offer’ and explains it as an altered form of the conventional phrase (*kan’yō-ku* 慣用句) /saši-cu osae-cu/ (which begins with the regular adverbial form of /sas-u/), although a note mentions that the form /sae-cu osae-cu/ appears in H2. The /cu/ in these paired verb forms is an obsolete classical perfective suffix (Ikeda 1975:85), and Martin (1975:574) cites a very

similar conventional phrase as an example: /sa⁺š-i-cu|sas+a⁺re-cu|no⁺m-u/ 差しつ差されつ飲む ‘to keep exchanging sake cups back and forth’, which pairs the perfective of /sas-u/ with the perfective of its derived passive and combines the pair with a verb meaning ‘to drink’. Martin marks phrasing and accentuation, and the accent phrase boundary (represented here as |) between the two verb forms indicates that they are separate words, not a compound. The H2 headword cannot be construed as reduplicated, and it could not have rendaku anyway, since the second element is a separate word and furthermore begins with a vowel.

seka-seka

H2: 急々 impetuous, driving, pushy, hasty

Typically written <せかせか> (*Kōjien*, *Daijirin*). The *NKD* entry for this word says the etymological root is the same as that of the verb /sek-u/ 急ぐ ‘to hurry’, and Martin (1987:65) explains that the /a/ could have been either a nominalizing suffix or a part of the root that subsequently disappeared in most verb forms. Hamano (1998) and Ono (1984) do not list /seka/ as a mimetic root, but late-19th-century speaker might have felt that /seka+seka/ was mimetic.

seki-seki

H2: 籍々 often, frequently

Typically written <せきせき> (*Kōjien*, *Daijirin*). The *NKD* entry for this word says the etymological root is the adverbial form of the verb /sek-u/ 急ぐ ‘to hurry’, and Hamano (1998) and Ono (1984) do not list /seki/ as a mimetic root, but it seems likely that an ordinary speaker today would feel that /seki+seki/ is mimetic.

sewa-sewa-shii

H2: bustling, stirring, active, fussy, fidgety

Typically written <忙々しい> (*Daijirin*; *Kōjien* lists only the classical citation form as a headword.) *NKD* lists /sewa+sewa+ši-i/ as a headword but gives /sewa+zewa+ši-i/ as an alternative pronunciation. The same root also appears unreduplicated in /sewa+ši-i/ 忙しい ‘busy’. See the introduction to sub-section 4(c) below for a brief discussion of the derivational suffix /ši/. Hamano (1998) and Ono (1984) do not list /sewa/ as a mimetic root.

shā-shā

H2: *shaa-shaa* shamelessly, brazen-faced, in a cool and impudent manner

Typically written <しゃあしゃあ> (*Kōjien*, *Daijirin*).

shari-shari to

H2: the sound made by crushing anything hard and brittle, as an egg-shell
Typically written 〈しゃりしゃり〉 (*Kōjien*, *Daijirin*).

shika-shika

H2: so and so, and so on, used in the place of something omitted

This item is not mimetic. *NKD* and Martin (1987:523) agree that /ši+ka/ is etymologically a demonstrative followed by a suffix meaning ‘state’. *NKD* lists /šika+jika/, with *rendaku*, as a headword with the meaning given in H2, but the entry says /šika+šika/ is an older pronunciation. Typically written 〈然々〉 or 〈云々〉 (*Kōjien*, *Daijirin*). *NKD* also lists etymologically identical /šika+šika/ 然々 ‘exactly so’ as a separate headword.

shiku-shiku

H2: in a low voice, in a slight degree
Typically written 〈しくしく〉 (*Kōjien*, *Daijirin*).

shio-shio to

H2: 萎々 in a sad, dispirited manner, drooping, languishing
Typically written 〈しおしお〉 (*Kōjien*, *Daijirin*).

shito-shito

H2: slow, gentle, quiet, not noisy or boisterous
Typically written 〈しとしと〉 (*Kōjien*, *Daijirin*).

soko-soko ni

H2: in a hasty, hurried, or half-finished manner

Typically written 〈そこそこ〉 (*Kōjien*, *Daijirin*). The particle /ni/ (rather than /to/) indicates that this item is not mimetic, and the *NKD* entry says that this /soko/ is etymologically identical to the mesial demonstrative /so+ko/ そこ ‘there’.

soku-soku

H2: quietly, softly, gently

This item is listed as a headword in *NKD* without kanji, and it certainly seems to be mimetic, although Hamano (1998) and Ono (1984) do not list it.

somo-somo

H2: 抑々 used in commending a narrative or introducing a new subject,
= now, things being so, after this

This item is not mimetic. The *NKD* entry describes it as a reduplication of the classical conjunction /somo/, and the entry for /somo/ says it is etymologically the mesial demonstrative /so/ followed by the linking particle /mo/.

sore-sore

H2: 某々 that and that, each and every one

This item is not mimetic. The base is the mesial demonstrative /so+re/ それ 'that'. *NKD* lists /sore+zore/, with *rendaku*, as a headword with the meaning given in H2, but the entry says /sore+sore/ is an alternative pronunciation. It is typically written 〈それぞれ〉, although both *Kōjien* and *Daijirin* give kanji: 〈其々〉 or 〈其れ其れ〉.

soro-soro to

H2: 徐々 slowly, softly, gently

Typically written 〈そろそろ〉 (*Kōjien*, *Daijirin*).

sō-sō

H2: 早々 quickly, with haste, expeditiously

This item appears to be Sino-Japanese rather than mimetic.

sowa-sowa (shite)

H2: *sowa-sowa shite* restless, unquiet, uneasy, not calm or deliberate

Typically written 〈そわそわ〉 (*Kōjien*, *Daijirin*).

soyo-soyo to

H2: 習々 softly, gently

Typically written 〈そよそよ〉 (*Kōjien*, *Daijirin*).

sura-sura to

H2: smoothly, sleekly, glibly, without obstructions

Typically written 〈すらすら〉 (*Kōjien*, *Daijirin*).

suru-suru to

H2: in a slippery manner, smoothly

Typically written 〈するする〉 (*Kōjien*, *Daijirin*).

suya-suya to neru

H2: to sleep in a quiet, easy manner, after great toil or pain

Typically written 〈すやすや〉 (*Kōjien*, *Daijirin*).

taka-taka-yubi

H2: the middle finger

Typically written 〈高々指〉 (*Kōjien*, *Daijirin*), this item obviously is not mimetic (cf. the adjective /taka-i/ 高い 'tall'). According to the *NKD* entry, this word is a folk etymology of /take+taka+yubi/ 丈高指 (cf. /take/ 'height').

taka-tsuki

H2: 高杯 a wooden bowl, or tray for holding fruit

Lyman had “takatakatsuki” here, but this is clearly a misprint. No headword of the form /takatakacuki/ is listed in *NKD*. Yanaike (1991:72) suggests that the H2 headword *taka-tsuki* could be what Lyman intended here, and this suggestion is almost certainly correct. As explained in §1.1, the second element of the corresponding modern Tōkyō word /taka+cuki/ 高杯 ‘small one-legged table’ is obsolete as an independent word, but its Old Japanese ancestor was a noun: ^{OJ}/tuki/. Lyman presumably thought that /cuki/ was related to a verb, and Martin (1987:523) suggests that ^{OJ}/tuki/ might actually have been derived from a verb etymologically, but even if this surmise is correct, ^{OJ}/tuki/ was probably not seen as verbal even by OJ speakers. In any case, this item is not reduplicated.

tama-tama ~ tama-dama

H2: 偶 occasionally, rarely, seldom

The *NKD* entry for /tama+tama/ does not mention /tama+dama/ as an alternative pronunciation. The root in this item is not mimetic and occurs unreduplicated in the adverbial phrase /tama ni/ たまに ‘occasionally’, which also appears as a headword in H2.

tara-tara to

H2: same as *tarari-to*; the manner of any thing hanging down, or sound of drops falling

Typically written 〈たらたら〉 (*Kōjien*, *Daijirin*).

tera-tera

H2: 耀々 shiny, glossy, oily in appearance

Typically written 〈てらてら〉 (*Kōjien*, *Daijirin*). Both Hamano (1998) and Ono (1984) list /tera+tera/ as mimetic (paired with /dera+dera/), but it is hard to imagine that this root is not etymologically related to the verb /ter-u/ 照る ‘to shine’.

teri-teri-bōzu

H2: *teri-teri-bōdzu* 掃晴娘 a piece of paper cut in the shape of a man, and hung on the door by children, to bring clear weather

Typically written 〈照り照り坊主〉 (*Kōjien*, *Daijirin*). The form in common use in modern Tōkyō Japanese is /ter-u+ter-u+boH·zu/ 照る照る坊主, with the conclusive form of the verb reduplicated.

toro-toro to

H2: in a slight or short manner

Typically written 〈とろとろ〉 (*Kōjien*, *Daijirin*).

ton-ton

H2: the sound of beating a drum, all, the whole
Typically written 〈とんとん〉 (*Kōjien, Daijirin*).

tō-tō

H2: in imitation of the sound of the wind

This item is not listed in a fairly comprehensive dictionary of mimetic vocabulary (Ono 1984:204), but it certainly has a mimetic meaning. The relevant *NKD* entry (for /toHtoH/ written in hiragana) says it describes the sound of a drum, a waterfall, or waves. The expanded definition in H3 (“in imitation of the sound of the wind, or water flowing, or of a drum”) makes it clear that this is the word Hepburn intended in H2. The *NKD* entry says that the etymology is uncertain and that confusion with Sino-Japanese items (written 〈鑿々〉, 〈鏗々〉, and 〈鞞々〉) is likely. *NKD* also lists seemingly Sino-Japanese /toH·toH/ written 〈滔々〉 as a separate headword, but the definition overlaps with the one for /toHtoH/ written in hiragana. Many small Japanese-English dictionaries also list /toH·toH to/ 滔々と ‘smoothly flowing’. The problem is that the kanji could very well be *ateji*. H2 also lists a second headword *tō-tō* with no kanji, but the corresponding word in modern Tōkyō Japanese is /toH·toH/ 到頭 ‘in the end’, and this Sino-Japanese word is not reduplicated.

tsuka-tsuka

H2: suddenly, abruptly
Typically written 〈つかつか〉 (*Kōjien, Daijirin*).

tsura-tsura

H2: 熟 thoroughly, maturely, attentively, carefully

Typically written 〈熟々〉 or 〈倩々〉 (*Kōjien, Daijirin*). This item may not be mimetic, although there is no definite etymology in the *NKD* entry. Hamano (1998) lists /cura+cura/ as mimetic, but this is presumably the uncontroversially mimetic word meaning ‘smooth’, which is listed as a separate headword in *NKD* (usually written 〈つらつら〉 but sometimes with the *ateji* 〈滑々〉).

tsuru-tsuru

H2: in a gliding manner, glibly, smoothly
Typically written 〈つるつる〉 (*Kōjien, Daijirin*).

tsuya-tsuya

H2: well, satisfactorily
Typically written 〈つやつや〉 (*Kōjien, Daijirin*).

4(c)

This third group of examples in section 4 contains items that Lyman described as “compounds with adjective endings.” He reported 34 such examples with *rendaku* and 106 without, and he listed only those without *rendaku*. At the end of the list, he mentioned that there are “others compounded with *mahoshii*, *shii*, *tai*, and *toi*, which do not appear as separate words.”

Lyman included three items ending in “*mahoshii*” on his list, but modern dictionaries (*Kōjien* and *Daijirin*) list only the classical conclusive form (*shūshikei* 終止形) of such words (e.g., /*ara+mahoši*/ あらまほし ‘desirable’ rather than /*ara+mahoši-i*/), implying that they are obsolete. (As noted in the Preface, I depart from my usual practice of representing vowel length with a macron when I give the citation form of an adjective in which the second half of a long vowel is analyzable as an inflectional ending.) The element /*mahoši*/ is typically described as a classical desiderative suffix that attaches to a verb base called the irrealis form (*mizenkei* 未然形) and yields an adjective (Ikeda 1975:125–126). The three examples that Lyman cited would have been irrelevant for him unless he understood them as involving an additional morpheme division: /*ma+hoši*/ or /*maho+ši*/. Etymologically, /*mahoši*/ is a contraction containing the same root as modern Tōkyō /*hoši-i*/ 欲しい ‘desired’ (Martin 1975:357; Frellesvig 2010:241). It may be that Lyman had some inkling of this connection, and the three items are segmented accordingly below: *-ma-hoshii*. As we saw in §1.1, modern Tōkyō /*h*/ in a native word is the reflex of a phoneme that was once pronounced [p]. Morpheme-medially, this phoneme shifted to [w] and merged with /*w*/, and /*w*/ subsequently disappeared except immediately preceding /*a*/ (Frellesvig 2010:201–205). As a result, a word-internal /*h*/ in a modern Tōkyō native word usually signals a morpheme boundary, so it is intuitively reasonable to segment the element /*mahoši*/ as /*ma+hoši*/ synchronically. Since the examples in this sub-section do not have *rendaku*, this segmentation assumes that Lyman cited the three examples containing /*mahoši*/ because they do not contain /*maboši*/.

Many adjectives have a modern citation form that ends /*ši-i*/, and in some cases /*ši*/ is a synchronically obvious derivational suffix, as in /*waka+waka+ši-i*/ 若々しい ‘youthful’ (cf. /*waka-i*/ 若い ‘young’). In other cases, /*ši*/ is doubtless the same element etymologically but is unlikely to be perceived as a separate piece by ordinary speakers, as in /*kuruši-i*/ 苦しい ‘painful’. Martin (1987:818) describes this /*ši*/ as historically “the major adjective-stem formant” and lists 247 items containing it. A small number of words involving the same etymological element as this /*ši*/ developed in a way that looks like *rendaku* (for details, see Frellesvig 2010:93,123). The only one of these that survives intact in modern Tōkyō Japanese is /*susamaji-i*/ 凄まじい ‘awful’, with stem-final /*ji*/ instead of

/ši/. This word is probably etymologically related to the verb /susam-u/ 荒む 'to go wild' (Martin 1987:841), but even if it is, the different kanji obscure the relationship and modern speakers are unlikely to see it. *NKD* gives /susamaši/ as an older pronunciation (of the classical citation form), and the headword in H2 is *susamashii*, but for some reason, Lyman did not include it in this sub-section. He may not have known about /susamaši-i/, although H3 gives *susamashii* and *susamajii* as alternative pronunciations. In any case, the consonant in /ši/ (romanized as ⟨sh⟩) is the only one that could have made some of the examples in this sub-section relevant for Lyman, as in /waka+waka+ši-i/ and /yu+yu+ši-i/ 由々しい 'grave'. In a case like /muzukaši-i/ 難しい 'difficult', it is hard to know whether Lyman was interested in the /š/ or the /k/, so the appropriate hyphenation for this item on the list below could be either *muzu-kashii* or *muzuka-shii*, depending on how Lyman analyzed it. Problematic examples like this one are noted individually. In a case like /kata+kuruši-i/ 堅苦しい 'formal, stiff', which is obviously a compound based on /kata-i/ 堅い 'stiff' and /kuruši-i/ 苦しい 'stressful', it seems almost certain that the relevant voiceless consonant for Lyman was the second /k/, so this example is hyphenated accordingly (at the boundary between the two roots) on the list below.

Combining a verb base with /ta/ is a highly productive morphological pattern in modern Tōkyō Japanese, and the resulting desiderative form is morphologically an adjective (Martin 1975:355), as in /yame+ta-i/ 辞めたい 'want to quit' (cf. /yame-ru/ 辞める 'to quit'). This pattern is treated in every elementary textbook for JFL learners (e.g., Jordan and Noda 1987:177–179) and is presumably what Lyman had in mind when he included "tai" in the quotation above. Etymologically, this derivational suffix /ta/ and the adjective root /ita/ (cf. modern Tōkyō /ita-i/ 痛い 'painful') have the same ancestor (Martin 1975:356). Lyman did not include any desiderative adjectives of this type in this sub-section. The only item on Lyman's list that ends in /tai/ is /cumeta-i/ 冷たい 'cold', which is not a desiderative based on a verb. Etymologically, however, it might involve the same adjective root meaning 'painful', as the H2 entry claims: "tsume, nails and itai, painful." The *NKD* entry for /cumeta-i/ mentions this etymology as a possibility, and Martin (1987:819) says the same.

Only three items on Lyman's list end in /toi/. The modern Tōkyō forms are /šibuto-i/ しぶとい 'obstinate', /taQto-i/ 尊い 'venerable', and /toHto-i/ 尊い 'venerable'. The last two are etymologically identical, both going back to ^{OJ}/taputwosi/ (see the entry in *Jōdai*), and Martin (1987:842) tentatively suggests an etymology involving a prefix ^{pre-OJ}/ta/ followed by the ancestor of modern Tōkyō /futo-i/ 太い 'thick'. Lyman seems not to have understood that a moraic obstruent /Q/ immediately preceding a potential rendaku site preempts rendaku (see §7.4.6), making rendaku impossible in /taQto-i/ even if the morphological

analysis were /taQ+to-i/. As for /toHto-i/, Lyman must have assumed it was /toH+to-i/, and he may have known that there is an obsolete adjective with the appropriate form: ^{OJ}/two-si/ (see the entry in *Jōdai*). This element survives (with *rendaku*) in modern Tōkyō /surudo-i/ 鋭い ‘sharp’, as Martin (1987:842, 856) points out, although /surudo/ is just an unanalyzable root for present-day speakers. With respect to /šibuto-i/, Martin (1987:840) tentatively suggests that it too contains the same root as modern Tōkyō /futo-i/ ‘thick’ etymologically, and if so, the /b/ in /šibuto-i/ is historically the result of *rendaku*. Lyman must have analyzed this word as /šibu+to-i/ for it to be relevant here, and it is hyphenated accordingly (*šibu-toi*) on the list below. Here again, he may have connected /to/ with the obsolete adjective meaning ‘sharp’. Another adjective that Martin (1987:839) says might contain this etymological root meaning ‘sharp’ is /sato-i/ 聡い ‘wise’, but Lyman did not have it on his list.

a-karui

H2: 明 light not dark

As explained above in the introduction to §A.2, this H2 headword must be what Lyman intended here, and he must have analyzed it as /a+karu-i/, which is etymologically incorrect and synchronically implausible even as a folk etymology.

ana-kashiko

H2: 穴賢 exclam. of fear, deep respect or admiration, used mostly at the close of a letter or a Budd. sermon

Lyman actually had “anakashiki” here, but this must be an error. No such headword is listed in H2 or *NKD*. This item is not a compound etymologically, since /ana/ is an exclamatory interjection (see §7.6.3). Lyman must have misanalyzed this example.

ao-shiroi

H2: 青白 pale, sickly, wan, livid

ara-kuroshii

H2: black and coarse, brawny and burly, spoken of the body

NKD lists only the classical conclusive form /ara+kuroši/ (written 荒くろし), implying that this example is obsolete, and the only citation in *NKD* is the entry in H2. The first element is transparently related to the adjective /ara-i/ 荒い/粗い ‘rough, violent; rough, coarse’, but the second element is a relic of an uncommon derivational pattern for forming adjectives meaning ‘BASE-like’. No adjective that exhibits this pattern is still in use in modern Tōkyō, but dictionaries of classical Japanese list /sune+kuroši/ ‘grouchy-appearing’ (earliest *NKD* attestation 1656; cf. /sune-ru/ 拗ねる ‘to become grouchy’). Other attested words

that end in /kuroši/ seem to be just alternative pronunciations of compounds ending in adjectival /kuruši/ (cf. modern Tōkyō /kuruši-i/ 苦しい 'arduous'). One of these is classical /omo+kuroši~/ /omo+kuruši/, corresponding to modern Tōkyō /omo+kuruši-i/ 重苦しい 'oppressive' (cf. /omo-i/ 'heavy'). The 'black' in Hepburn's definition reflects what was probably just a folk-etymological connection to /kuro-i/ 黒い 'black'.

ara-ma-hoshii

H2: that which one desires may be, or may come to pass

NKD lists only the classical conclusive form /ara+mahoši/, implying that this word is obsolete. Typically written あらまほし (*Kōjien*, *Daijirin*). See the discussion of /mahoši/ above in the introduction to this sub-section. It seems unlikely that an ordinary 19th-century speaker would have analyzed /mahoši/ into two elements, any more than a modern Tōkyō speaker would.

furukusai

H2: 古臭 old fashioned, antiquated, ancient, obsolete

futoku-takumashiki

H2: 太逞 spirited, mettlesome, of a horse only

Lyman actually had "futokutakamashiki" here, but this is obviously an error. This item is clearly a two-word phrase consisting of forms of adjectives corresponding to modern Tōkyō /futo-i/ 太い 'thick, heavy' and /takumaši-i/ 逞しい 'strong, robust': the adverbial form (*ren'yōkei* 連用形) of the first and the (classical) adnominal form (*rentaikei* 連体形) of the second. Dictionaries (*Kōjien*, *Daijirin*, *NKD*) do not list the phrase as a headword, but variants of it appear in examples cited in the entries for /futo-i/. The example for meaning 6 ('well-fleshed') under the headword /futo-i/ in *Daijirin* (taken from the Kamakura Period *Hōgen monogatari* 保元物語) is a description of a horse and includes exactly the variant that appears in H2.

hashi-kai

H2: same as *hashikoi*; shrewd, wise, sagacious, clever, active, smart, cunning

H2 actually gives *hashikashi* as the headword, but this is a mistake. Hepburn's intention was presumably to cite the word corresponding to modern Tōkyō /hašika-i/ 捷い 'nimble', which is in fact an alternative pronunciation of /hašiko-i/ 捷い. Hepburn was probably led astray by the fact that an adjective with the classical citation form /hašika-ši/ could correspond either to /hašika-i/ (an actual word) or to /hašikaši-i/ (which does not exist). Hepburn corrected the mistake in H3 by just deleting the H2 entry for *hashikashi*; there is no headword *hashikai* in H3. It is unlikely that an ordinary speaker would see either /hašika-i/ or /hašiko-i/ as a synchronic compound, although Martin (1987:848) tentatively

divides both after /haši/ suggesting that /ka/ and /ko/ may have originated as adjective formants (i.e., derivational suffixes).

hinata-kusai

H2 [s.v. *hinata*]: 日向臭 stinking from exposure to the sun

iki-kusai

H2: 息臭 having a foul or stinking breath

iku-hisashii

H2: 幾久 a long time, a long time to come

jiman-kusai

H2: 自慢臭 given to vaunting or boasting, so as to be odious to others

kashi-kamashii

H2: 聒 loud and noisy, deafening, stunning, or roaring

Typically written 〈囂しい〉 (*Kōjien*, *Daijirin*). Only the form /kašigamaši-i/, with medial /g/ rather than /k/, appears as a headword in *NKD*, but the entry gives /kašikamaši/ as an older pronunciation for the classical citation form /kašigamaši/. It seems unlikely that Lyman’s reason for listing this word was that it ends /ši-i/ rather than /ji-i/, but as noted above in the introduction to this sub-section, it is hard to be sure. Martin (1987:831) suggests that the etymological source was reduplication of the ancestor of /kamaši/, with /kašimaši-i/ 姦しい ‘noisy’ as a different outcome of same source.

kata-kurushii

H2: 佶屈 over strict in manner, rigid or severe in temper, severely exact, stiff in manner, formal

Typically written 〈堅苦しい〉 (*Kōjien*, *Daijirin*).

kirakira-shii

H2: 煌々 glittering, sparkling, brilliant

Lyman had “kirakirato” as an example above in sub-section 4(b), which suggests that the point of giving “kirakirashii” here was the fact that it ends /ši-i/ rather than /ji-i/ (cf. *waka-waka-shii* and *yu-yu-shii* below). *NKD* lists only classical /kira+kira+ši/ 煌々し (implying that the word is obsolete) and gives /kira+gira+ši/, with *rendaku*, as an older alternative pronunciation. Since /kira/ is mimetic (Martin 1987:832), the *rendaku* in older /kira+gira+ši/ is surprising (see §7.5.3).

kogare-kusai

H2: 焦臭 having the smell of being burnt, charred and stinking

mi-ma-hoshii

H2: 欲見 desirous of seeing, wishing to see

This item is not listed as a headword in *NKD*, but classical forms of it appear in the citations under the headword /mahoši/. See the discussion of /mahoši/ above in the introduction to this sub-section. It seems unlikely that an ordinary 19th-century speaker would have analyzed /mahoši/ into two elements, any more than a modern Tōkyō speaker would.

mimi-shi

H2: *mimi-shii* 聾者 a deaf person

Typically written 耳癡 or 聾 (*Kōjien*, *Daijirin*). This word is a noun, not an adjective, but the second element is based on a verb etymologically, so Lyman should have listed it in sub-section 4(a) above. The ancestor of the second element is attested in Old Japanese as ^{OJ}/sip-i/, the adverbial form of the verb ^{OJ}/sip-u/ 'to lose the use of' (Martin 1987:753). The verb is obsolete, and so is /mimi+shiH/ (the H2 headword), but the first element is obviously /mimi/ 耳 'ear'. H2 also lists /me+shiH/ 盲 'blindness, blind person' as a headword (although Lyman overlooked it), so /mimi+shiH/ was a synchronically obvious compound in the late 19th century. In contrast to /mimi+shiH/, /me+shiH/ is still listed even in smaller dictionaries today, although it is obsolescent (*NHK* marks it as archaic).

muzuka-shii

H2: *mudzukashii* 六敷 difficult, hard to be done; troublesome

Typically written 難しい (*Kōjien*, *Daijirin*). The hyphenation given here implies that Lyman's reason for listing this word was that it ends /ši-i/ rather than /ji-i/, but as noted above in the introduction to this sub-section, it is hard to be sure about this. It could be that Lyman analyzed this word as /muzu+kaši-i/ and cited it because it is not pronounced /muzugaši-i/. Martin (1987:835) suggests tentatively that /ka/ might have been a separate formant (i.e., etymologically a derivational suffix), but the stem /muzukaši/ is probably unanalyzable synchronically.

musa-kurushii

H2: 陋苦 dirty and mean, slovenly, filthy

Typically written むさくるしい (*Kōjien*) or むさ苦しい (*Daijirin*). *NKD* lists /musa+kuruši-i/ as a headword but gives /musa+guruši-i/, with *rendaku*, as an alternative pronunciation. Martin (1987:819, 835) analyzes the second element as /kuruši-i/ 苦しい 'stressful' and the first element as an adjective root first attested in *LMJ*. Many modern dictionaries (including *NHK*) list the adjective /musa-i/ むさい 'dirty' as a headword, although it is not a word that most modern Tōkyō speakers know.

se-ma-hoshii

H2: desire to do

Kōjien lists only classical /se+mahoši/ (written (為まほし)) as a headword, and *Daijirin* and *NKD* do not list this word at all. See the discussion of /mahoši/ above in the introduction to this sub-section. It seems unlikely that an ordinary 19th-century speaker would have analyzed /mahoši/ into two elements, any more than a modern Tōkyō speaker would.

shibu-toi

H2: sullen, sulky, surly, crabbed, churlish, austere

Typically written (しぶとい) (*Kōjien*, *Daijirin*). This item contains a historical instance of *rendaku* if its etymological second element is related to /futo-i/ 太い ‘thick; brazen’, as Martin (1987:840) tentatively suggests. Martin says the initial syllable /ši/ might be descended from from ^{OJ}/sip-i/, the adverbial form of the verb ^{OJ}/sip-u/, which corresponds to modern Tōkyō /šii-ru/ 強る ‘to force’. As explained above in the introduction to this sub-section, Lyman must have analyzed this example as /šibu+to-i/, perhaps connecting the second element to an obsolete adjective (cf. ^{OJ}/two-si/).

shio-hayui

H2: 鹹 salt in taste, salty

Martin (1987:820) describes /hayu/ as a bound adjective root which also appears with a historical instance of *rendaku* in another H2 headword, which corresponds to modern Tōkyō /ma+bayu-i/ 目映い ‘dazzling’ (cf. /ma/~me/ ‘eye’). Although /šio+hayu-i/ is now obsolete, this example belongs here etymologically, and even if a late-19th-century speaker did not know any other word containing /hayu/ and did not see the connection with /bayu/ in /ma+bayu-i/, it still would have been reasonable to treat it synchronically as involving a potential *rendaku* site. The connection to /šio/ 塩 ‘salt’ is semantically obvious. We do not know whether Lyman saw the connection between /hayu/ in /šio+hayu-i/ and /bayu/ in /ma+bayu-i/, because he listed only examples without *rendaku* in this sub-section.

shio-karai

H2: 鹹 over salted, disagreeably salt

Typically written (塩辛い) (*Kōjien*, *Daijirin*).*shara-kusai*

H2: affecting or pretending to do what one knows nothing about

Typically written (洒落臭い) (*Kōjien*, *Daijirin*).

shi-sōmonai

H2: not likely to do, not to appear like doing

Lyman actually had “shisomonai” here, with a short second vowel, but this is clearly a mistake, as Yanaike (1991:72) notes. This item corresponds to the modern Tōkyō phrase /ši+soH mo na-i/ しそうもない, and the word /ši+soH/ is an instance of a productive morphological pattern that adds the suffix /soH/ to a verb base to form an adjectival noun meaning ‘appears as if SUBJ will VERB’. This pattern is treated in virtually every elementary textbook for JFL learners (e.g., Jordan and Noda 1988:336), and another example of it (*nari-sō*) appears below in sub-section 4(e). The incorrect analysis in the H2 entry presumably led Lyman astray. Hepburn corrected this mistake in H3: *shisō* appears as a headword, and “– *mo nai*” is one of the examples in the entry. Martin (1975:995) says that Sino-Japanese /soH/ 相 ‘appearance, condition’ is the most widely accepted etymological source of the suffix /soH/, but a reduction of native /sama/ 様 ‘appearance, situation’ has also been proposed.

shitsu-koi

H2: gross, or indelicate in taste, nauseous; given to needless repetition, or inquiring over and over about the same thing

Typically written ⟨しつこい⟩ (*Kōjien*, *Daijirin*). Martin (1987:817) says the /ko/ in this word is etymologically the same as the root of /ko-i/ 濃い ‘dense, strong’, although it is not clear what the origin of /šicu/ is. Like present-day speakers, late-19th-century speakers surely did not see /šicuko-i/ as related to /ko-i/.

tat-toi

H2: 貴 exalted, honorable, noble; precious, valuable, esteemed, excellent

See the item just below for the etymology. As explained above in the introduction to this sub-section, this example is beside the point because the /Q/ in /taQto-i/ makes *rendaku* impossible (see §7.4.7).

tō-toi

H2: 貴 honorable, noble, precious, valuable

The Old Japanese ancestor of this word is attested as ^{OJ}/taputwosi/. Martin (1987:842) lists this and the item just above (*tat-toi*) as alternative developments of this same source. See the explanation above in the introduction to this sub-section.

tsume-tai

H2: 冷 (*tsume*, nails and *itai*, painful) cold, chilly

As explained above in the introduction to this sub-section, the etymology of this item is uncertain, although it might have originated as the H2 entry claims.

If so, it is not an etymologically relevant item here, since the initial vowel in the second element would not have been a potential *rendaku* site. Synchronically, the stem /*cumeta*/ was surely unanalyzable in the late 19th century, just as it is today.

utsuku-shii

H2: 美 beautiful, handsome, pretty, elegant, good

The hyphenation given here implies that Lyman's reason for listing this word was that it ends /*ši-i*/ rather than /*ji-i*/, but as noted above in the introduction to this sub-section, it is hard to be sure about this. It could be that Lyman analyzed it as /*utsu+kuši-i*/ and cited it because it is not pronounced /*utsu+guši-i*/. There is no definite etymology in *NKD*, but the classical adnominal form /*kuši-ki*/ 奇しき of an adjective meaning 'strange, mysterious' is still in use, although uncommon, and perhaps Lyman connected it to the /*kuši-i*/ in /*utsukuši-i*/. Such a hypothetical connection would not be semantically unreasonable.

waka-waka-shii

H2: youthful, young in appearance, manner, or feeling; juvenile

Typically written 〈若々しい〉 (*Kōjien*, *Daijirin*).

yo-fukai

H2: 夜深 late at night

yu-yu-shii

H2: 雄々敷 having a gallant, grand, martial, or warlike appearance; strong, imposing; fearful, terrible

Typically written 〈忌々しい〉 or 〈由々しい〉 (*Kōjien*, *Daijirin*). The etymology of this word is uncertain, and Frellesvig (2010:92) gives just a question mark.

4(d)

Lyman described the items in this fourth group of examples in section 4 as “juxtaposed words of allied or contrasted meaning.” Linguists today would call them coordinate compounds. Lyman gave a few of the examples in this sub-section with the particle /*to*/, and some of these are mimetic. See the introduction to sub-section 4(b) above for a brief discussion of mimetic words followed by /*to*/.

achi-kochi

H2: 彼地此地 here and there, all about, more or less

Kōjien and *Daijirin* both give 〈彼地此地〉, but this word is typically written 〈あちこち〉. The two elements, /ači/ and /koči/, both appear in sub-section 4(e) below.

[[*ana-kashiko*]]

This item is a duplication. The same example appears above in sub-section 4(c), and it is not coordinate.

ato-saki

H2: 後先 that which is before and behind; the past, and the future; antecedent, and consequence

hirari-kururi to

H2: 回転 turning and brandishing; a flashing, glittering appearance

NKD lists this item as a headword with no kanji, and the two elements are both clearly mimetic. Ono (1984) lists the two elements separately. Hamano (1998:47–50) discusses mimetic compounds like this one.

iro-ka

H2: 色香 color and fragrance, beauty and loveliness of women

ito-take

H2: 糸竹 stringed and wind instruments of music

kage-hinata

H2: 景日向 shade and sun light; met. double-faced, hypocritical, duplicity
Typically written 〈陰日向〉 (*Kōjien*, *Daijirin*).

? *kaka-soso*

H2: hesitating, undecided or doubtful manner

An item with this romanization appears as a headword in H2, although the accompanying katakana spelling is 〈カソカソ〉, suggesting that the intended item was actually *kasō-kasō*. But no headword of either form (/kakasoso/ or /kasokaso/) appears in *NKD*, and there is no headword *kaka-soso* or *kasō-kasō* in H3 either.

kaku-te

H2: 然而 then, after this, and, so then

Typically written 〈斯くて〉 (*Kōjien*, *Daijirin*). This example is not a coordinate compound. According to the entry in *NKD*, it originated as a combination of the ancestor of the adverb /kaku/ ‘in this way’ followed by a “particle” /te/, and this combination is attested in Old Japanese.

kare-kore

H2: 彼此 this and that, one thing or another; about

mucha-kucha

H2: mixed, confused, jumbled together, topsy-turvy

Typically written (無茶苦茶) (*Kōjien*, *Daijirin*). The *NKD* entry for this item says that the kanji are *ateji*, and it is very similar in form to /muša+kuša/ むしゃくしゃ ‘irritatedly’, which Hamano (1998:49) describes as a compound containing two mimetic roots. Ono (1984) lists /kuča/ as a mimetic root but not /muča/. In fact, /muča/ 無茶 ‘absurd’ exists as a word on its own and functions grammatically in modern Tōkyō Japanese as an adjectival noun. Nonetheless, /muča+kuča/ has a mimetic feel.

musa-kusa

H2: confused, topsy-turvy, perplexed, distracted, vexed

Typically written (むさくさ) (*Kōjien*, *Daijirin*). Like the item just above, this item is very similar in form to /muša+kuša/ むしゃくしゃ ‘irritatedly’, which Hamano (1998:49) describes as a compound containing two mimetic roots. Ono (1984) does not list either /musa/ or /kusa/ as a mimetic root, but Hamano (1998:232) includes /kusa+kusa/ on her list of reduplicated CVCV mimetic adverbs, and /musa+kusa/ certainly has a mimetic feel. The *NKD* entry for the adjective headword /musa-i/ むさい ‘dirty’ says that this root is what appears in /musa+kusa/. Although this adjective is obsolescent, Martin (1987:853) says the same etymological root occurs in /musa+kuruši-i/ むさくるしい ‘shabby’, which is listed above in sub-section 4(c) and is still in common use in modern Tōkyō.

norari-kurari

H2: *norari-kurari-to* same as *nora-kura*

Typically written (のらりくらり) (*Kōjien*, *Daijirin*). This item is presumably a compound of two mimetic elements, since Ono (1984:245) lists it. Lyman had “norarikurari” here, but the headword in H2 is *norari-kurari-to*, with /to/. (Lyman had “norakurato” as the next item on his list; see immediately below.)

nora-kura to

H2: wandering idly about, loafing

Typically written (のらくら) (*Kōjien*, *Daijirin*). This item is presumably a compound of two mimetic elements (like the item just above), since Ono (1984:245) lists it. Lyman had “norakurato” here, but the headword in H2 is *nora-kura*, without /to/.

oya-ko

H2: 親子 parent and child

sa-koso

H2: just so

Typically written 〈然こそ〉 (*Kōjien*, *Daijirin*). This item is not coordinate. The H2 entry says it is a phrase consisting of the adverb /sa/ 'thus' and the emphatic particle /koso/, and the entry in *NKD* agrees.

soso-kusa to

H2: in a hurried manner, said of one walking

Typically written 〈そそくさ〉 (*Kōjien*, *Daijirin*). This item is arguably a compound of two mimetic elements, and Ono (1984:178) lists it (although he does not list either of the two elements separately). The mimetic status of /soso/ is dubious, however, since in an unambiguously mimetic root of the form CVCV, the first and second consonants are never the same (Hamano 1998:28).

to-kaku

H2: 兎角 According to Japanese etymologists, it is derived from *To*, outside, = that, and *kaku*, this manner; = in that way and this way; in various ways, in one way and another, some how or other, by all means, for the most part

The H2 entry actually has 〈免〉 for the first kanji, but this is clearly a mistake, as Yanaike (1991:72) notes. *NKD* says the kanji are *ateji* and that this item is etymologically a combination of two adverbs (/to+kaku/), essentially as the H2 entry indicates, and Martin (1987:550) agrees (see *to-ni-kaku-ni* below).

to-kō

H2: 兎角 (Contracted from *Tokaku*) this or that

The H2 entry actually has 〈免〉 for the first kanji, but this is clearly a mistake, as Yanaike (1991:72) notes. This item is a different development of the same etymological source as *to-kaku* just above. The *NKD* entry agrees with the H2 etymology.

to-mo-kaku-mo

H2: (comp. of *Tokaku* and *mo*) in what manner soever, how soever, however it may be

Typically written 〈ともかくも〉 (*Kōjien*) or 〈兎も角も〉 (*Daijirin*). Etymologically, this is item is a phrase involving the same two adverbs as *to-kaku* above, each followed by the particle /mo/, but since it is accentually unified (/to⁺mokakumo/), it presumably is not phrasal in modern Tōkyō.

to-mo-kō-mo

H2: Idem. [i.e., the same as *to-mo-kaku-mo* just above on Lyman's list]

Typically written 〈ともこうも〉 (*Kōjien*, *Daijirin*). This item is a different development of the same etymological source as *to-mo-kaku-mo* just above, but it is obsolete, since it is not marked for accent in *Daijirin* and is not listed at all in *NHK* or *Meikai*.

to-ni-kaku-ni

H2: (comp. of *Tokaku*, and *ni*) in any manner soever, in any way whatever

Typically written 〈とにかかくに〉 (*Kōjien*, *Daijirin*). Etymologically, this item is a phrase involving the same two adverbs as *to-kaku* above, each followed by the particle /*ni*/, but it is obsolete, since it is not marked for accent in *Daijirin* and is not listed at all in *NHK* or *Meikai*. The *NKD* entry says it is the ancestor of the form in common use in modern Tōkyō: accentually unified /to^{*}nikaku/ とにかかく ‘at any rate’. This is the form that Martin (1987:550) lists, and he agrees with the etymology given here (see also *to-kaku* above).

to-sama-kō-sama

H2: *tō-sama-kō-sama* this manner or that manner, perplexed, doubtful or uncertain state of mind, in a quandary

Typically written 〈とさまこうさま〉 (*Kōjien*, *Daijirin*). Lyman had “*toosama-koosama*” here, and the headword in H2 also has a long first vowel, but the headword in *NKD* has a short vowel instead: /tosama+ koHsama/. *NKD* gives /tozama+koHzama/ as an alternative pronunciation and says this item developed from /tosama+kakusama/, which is not listed in H2. Although *NKD* does not give an etymology, this item is obviously derived from a phrase involving the same two adverbs as in *to-kaku* above, each combined with /sama/ 様 ‘manner’. The *Daijirin* entry marks it as accentually unified (/tosamako^{*}Hsama/), but it is not listed in *NHK* or *Meikai* and is probably obsolete. Once the phrasal status was lost, it would have been quite natural for speakers to lengthen the first vowel to make the two halves rhythmically parallel, so it could be that the H2 headword was not just an error.

? *to-sen-kaku-sen*

H2: (comp. of *Tokaku*, and *sen*, the fut. of *Shi*, to do) shall I do this or shall I do that, or how shall I do, in doubt or perplexity

No headword of the form /toseNkakuseN/ is listed in *NKD*. If the explanation in the H2 entry is correct, this item was a phrase, not a single word.

to-ya-kaku-to

H2: Derived from *Tokaku*. that way or this, various ways

Typically written 〈とやかかく〉 (*Kōjien*, *Daijirin*). *NKD* lists /toyakaku/ as a headword, but the entry notes that it is often followed by the particle /to/. The *NKD* entry also says it developed from /toya+kakuya/, and, etymologically, this

longer form obviously involves the same two adverbs as in *to-kaku* above (just as the H2 entry claims), each followed by the particle /ya/. The shortened form is accentually unified (/to⁺yakaku/) and presumably not phrasal in modern Tōkyō.

to-ya-kō-to

H2 [s.v. *to-ya-kaku-to*, listed as an alternative]: that way or this, various ways

Typically written 〈とやこう〉 (*Kōjien*, *Daijirin*). *NKD* lists /toyakoH/ as headword and says it developed from /toyakaku/ (i.e., the item just above), and it presumably could be followed by the particle /to/ in the same way. The *Daijirin* entry marks it as accentually unified (/to⁺yakoH/), but it is not listed in *NHK* or *Meikai* and is probably obsolete.

une-kune

H2: convoluted, or zigzag, winding and turning in form and manner

Typically written 〈うねくね〉 (*Kōjien*, *Daijirin*). Synchronically, this item is presumably a compound of two mimetic elements, since Ono (1984) and Hamano (1998) list both /une+une/ and /kune+kune/ as mimetic, although Hamano marks /une+une/ with a question mark. The independent verbs /uner-u/ 'to undulate' and /kuner-u/ 'to twist and turn' both exist and are also normally written without kanji. The *NKD* entry for /uner-u/ connects it to /une/ 畝 'field ridge', as does Martin (1987:779). Martin (1987:716) also tentatively suggests a non-mimetic etymology for /kuner-u/.

ushi-tora

H2: 丑寅 – *no kita* the north-east quarter

The twelve signs of the Chinese zodiac were assigned to directions, and this item combines two of them: /uši/ 丑 'north northeast' (30° east of due north) and /tora/ 寅 'east northeast' (30° north of due east).

uō-saō

H2: *uwō-sawō* 右往左往 going to the right and left

This item combines two Sino-Japanese binoms: /u·oH+sa·oH/.

4(e)

This is the last group of examples in Lyman's section 4, and it contains items that do not fit into any of his other categories. He said that most such items have *rendaku* (1,366 by his count), but he listed only those without *rendaku* (501 by his count).

a-chi

H2: 彼地 there, that place

Kōjien and *Daijirin* give the kanji 〈彼方〉, but the usual form in modern Tōkyō is /aQčī/, typically written 〈あっち〉. Martin (1987:387) says /čī/ is etymologically related to the second syllable of /miči/ 道 ‘path, road’. The corresponding Old Japanese word ^{OJ}/mi+ti/ combined the exalting prefix ^{OJ}/mi/ with a base meaning ‘path, road; region’, although ^{OJ}/ti/ is not attested as an independent noun (see the entry for ^{OJ}/ti/ in *Jōdai*). Although the relationship of the /čī/ in /a(Q)čī/ to the /či/ in /miči/ is surely opaque to present-day speaker, it synchronically reasonable to segment /ačī/, given the pervasive regularities in the modern Tōkyō system of demonstratives and their corresponding interrogative forms (Martin 1975:1066). Compare *ko-chi~kotchi* and *so-chi* below.

ko-chi ~ kotchi

H2: 此方 here, this place; I, me

The H2 entry gives *kotchi* as an alternative for the headword. *Kōjien* and *Daijirin* give the same kanji as H2, but the usual form in modern Tōkyō is /koQčī/, typically written 〈こっち〉. On the etymology of /čī/, see the explanation for *a-chi* just above.

nama-chi

H2: 生血 fresh blood

shira-chi

H2: 白血 fluor-albus, whites

so-chi

H2: 其地 that place, there, that thing, (pointing to it), you

Kōjien and *Daijirin* give the kanji 〈其方〉, but the usual form in modern Tōkyō is /soQčī/, typically written 〈そっち〉. On the etymology of /čī/, see the explanation for *a-chi* above.

izu-chi

H2: *idzu-chi* 何地 where, what place

Typically written 〈何方〉 (*Kōjien*, *Daijirin*). On the etymology of /čī/, see the explanation for *a-chi* above.

haya-fune

H2: 早船 a fast boat, a clipper ship

NKD lists /haya+fune/ as a headword but gives /haya+bune/ as an alternative pronunciation.

hiki-fune

H2: 引舟 a tow-boat, a tug

kawa-fune

H2: 川船 a river-boat

NKD lists /kawa+bune/, with *rendaku*, as a headword but gives /kawa+fune/ as an alternative pronunciation.

yo-fune

H2: 夜舟 a night boat

Typically written 夜船 (*Kōjien*, *Daijirin*). *NKD* lists /yo+fune/ as a headword but gives /yo+bune/ as an alternative pronunciation.

de-ha

H2: 出場 a place for going-out, a place of exit

Typically written 出端 (*Kōjien*, *Daijirin*). The kanji and the definition in the H2 entry suggest /de+ha/ 'opportunity to go out' was confused with /de+ba/ 'one's turn to go on stage; place of production', which is typically written 出場).

ori-ha

H2: 折羽 a kind of game played with dice

saka-ha

H2: 鑿 the barb of a hook

NKD lists /saka+ha/ as a headword but gives /saka+ba/ as an alternative pronunciation. The *NKD* headword is hyphenated where the morpheme boundary appears in these phonemic transcriptions, but the entry does not propose an etymology. It does, however, give the alternative kanji 逆鉤, which suggests /saka/ 'opposite direction' plus /ha/ 齒 'tooth'.

shira-ha

H2: 白齒 white teeth

yuzuru-ha

H2: *yudzuru-ha* 交讓木 the name of an evergreen tree, the leaves of which are attached to the straw rope stretched before the door of houses on New-year

Typically written 讓る葉 (*Kōjien*, *Daijirin*). Dictionaries (*Kōjien*, *Daijirin*) describe this item as the old name of modern Tōkyō /yuzuri+ha/ 讓葉 *Daphniphyllum macropodium*, which presumably means that the H2 headword is an obsolete form. The ancestor of the obsolete form is attested in Old Japanese, and its first element was ⁰¹/yuduru/ 'bowstring'. Assuming that late-19th-century speakers folk-etymologized it as the kanji 讓る葉 suggest, /yuzuru/ had been reanalyzed as a verb form (cf. modern Tōkyō /yuzur-u/ 讓る 'to yield'), making

/yuzuru ha/ a frozen phrase rather than a compound and thus irrelevant for Lyman. On the other hand, even if the form still in use is folk-etymologized as the kanji suggest, it would be relevant, since it would be a V+N=N compound.

naga-hama

H2: not listed

No headword of this form is listed in H3 either, but Lyman almost certainly intended the word corresponding to modern Tōkyō /naga+hama/ 長浜 ‘long beach’, which is listed as a headword in *NKD*.

shio-hama

H2: 塩浜 the salt-beach where salt is made

yoko-hama

H2: not listed

No headword of this form is listed in H3 either, but Lyman almost certainly intended the place name *Yokohama* (/yoko+hama/ 横浜 ‘[literally] side beach’).

? *yoshi-hama*

H2: not listed

Lyman had just “yoshi” with no dash here, but this is presumably just a misprint, since *yoshi-hama* would be the fourth of the four examples ending in *hama* that Lyman counted. There are places named *Yoshihama* 吉浜 in Japan, and it could be that Lyman intended a place name here as well as in the example just above. Yanaike (1991:71) gives the kanji (吉原) for this example, but this is presumably a misprint (although there are also places named *Yoshihara*).

aka-hara

H2: 赤痢 dysentery

Typically written (赤腹) (*Kōjien*; not listed in *Daijirin*).

ato-hara

H2: 後腹 after-pains, (met.) after clap

NKD lists /ato+hara/ as a headword but gives /ato+bara/ as an alternative pronunciation.

hi-hara

H2: the side of the abdomen

Typically written (脾腹) (*Kōjien*, *Daijirin*). *Kōjien* and *Daijirin* list only /hi+bara/, with *rendaku*, but *NKD* lists /hi+hara/ as a headword, although it gives /hi+bara/ as an alternative pronunciation.

kata-hara

H2: 片腹 Used only in the phrase, – *itai*, sad, pitiable, regretful, or – *itaku omō*, to pity, commiserate, to be sorry for

The form *omō* in the H2 entry was an error. It was corrected to *omou* in H3. (As explained in the commentary at the beginning of sub-section 3[a] above, Hepburn used the adverbial form of a verb as its citation form but also provided the conclusive ending for each headword verb. For the verb corresponding to modern Tōkyō /*omo-u*/ 思う 'to think', the conclusive ending is “–*ō*” in H1 but “–*ou*” in H2.)

? *name-hara*

H2: 白痢 mucous diarrhea

This item, with the second element presumably corresponding to modern Tōkyō /*hara*/ 腹 'belly', does not appear in *NKD*, although /*name*/ alone does, with meaning and kanji ((白痢)) matching what H2 gives for *name-hara*.

suki-hara

H2: 空腹 empty stomach, hungry

ura-hara

H2: 裡原 contrary to each other, the reverse, or opposites of each other, contrast, antithesis

Typically written (裏腹) (*Kōjien*, *Daijirin*). This is a coordinate compound (cf. modern Tōkyō /*ura*/ 裏 'back', /*hara*/ 腹 'belly'), and Lyman should have listed it above in sub-section 4(d), but he was probably misled by the mistaken second kanji (原) in the H2 entry. H3 has the unhelpful kanji (表裡), which would be expected to represent the coordinate compound /*omote+ura*/ 'front and back' (usually written (表裏) today).

kata-hashī

H2: 片端 one or single edge, one side

me-hashī

H2: – *ga kiku*, quick to perceive, thoughtful, attentive

Typically written (目端) (*Kōjien*, *Daijirin*).

kiza-hashī

H2: 階 stairs, a flight of steps

The first element is obsolescent /*kiza*/ 刻 'cut, notch', and the second element is obsolete /*haši*/ 梯/階 'ladder; stairs', which is etymologically identical to /*haši*/ 橋 'bridge' (see §7.2.4). The single kanji (階) obscures the analyzability of /*kiza+haši*/, and even if a speaker does analyze it, it is semantically opaque, but it is an appropriate example for this sub-section of Lyman's article.

mi-hashī

H2: 御階 the steps before the door of the Mikado's palace

This example is obsolete, and so are its two etymological elements. The first is a no-longer-productive exalting prefix /mi/, and the second is an obsolete word for 'stairs' (see the explanation for *kiza-hashī* just above). Nonetheless, this example was presumably analyzable for a late-19th-century speaker who knew it.

Like the polite prefix /o/, /mi/ generally blocks *rendaku* in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above). The only exception to this generalization is the obsolete honorific word /mi+guši/ 御髮 'hair' (which appears as a headword in H2). The etymological second element was the ancestor of /kuši~/ /guši/ 櫛 'comb', and the shift from 'exalted comb' to 'exalted hair' is an obvious case of metonymy, but the ancestor of /kuši/ as a word on its own does not seem to have undergone this shift. The second kanji in (御髮) suggest that that /guši/ is not identified with /kuši/ 'comb', and since there is no independent word /kuši/ or /guši/ meaning 'hair', /mi+guši/ is arguably not a synchronic instance of *rendaku*.

sori-hashī

H2: 反橋 an arched bridge

iri-hi

H2: 入日 the setting sun

tobi-hi

H2: 飛火 sparks or flakes of fire flying from a conflagration

kumi-himo

H2: 組紐 'braid, plaited cord

uchi-himo

H2: 打緒 'braid, silk-cord

Typically written (打ち紐) (*Kōjien*, *Daijirin*).

ma-ho

H2: 真帆 a sail squared to the wind

mizu-ho

H2: not listed

As Yanaïke (1991:71) suggests, Lyman must have intended the word corresponding to modern Tōkyō /mizu+ho/ 瑞穂 'vigorous rice plant'. The phrase /mizu+ho no kuni/ 瑞穂国 'Land of Vigorous Rice Plants' is a traditional epithet for Japan.

tsugi-ho

H2: 接穂 the branch that is ingrafted into a tree, a graft

Typically written 接ぎ穂 (*Kōjien*, *Daijirin*).

hanashi-ka

H2: a story-teller, one who makes a living by narrating stories

Typically written 咄家 or 噺家 (*Kōjien*, *Daijirin*). Despite the first kanji, late-19th-century speakers presumably identified the first element of this example with /hanaši/ 話 'story'. The second element is Sino-Japanese, and most but not all Sino-Japanese elements resist *rendaku* (see §7.3), as Lyman himself noted. His examples of *rendaku* in a Sino-Japanese second element are listed above in section 2.

hoshi-ka

H2: 干鰯 a kind of dried fish

Typically written 乾し鰯 or 干し鱺 (*Kōjien*, *Daijirin*). The first element is transparently /hoši/ 'drying' (cf. /hos-u/ 乾/干す 'to dry'), but the *NKD* entry has no certain etymology for /ka/.

kawa-kami

H2: 川上 up the river, upper part of the river

kaza-kami

H2: 風上 windward, the quarter from which the wind blows

[[*kome-kami*]]

This item is a duplication. The same example appears above in sub-section 4(a), which is where it belongs.

kiri-kami

H2: 切紙 a summons or written order to appear before a magistrate

NKD lists /kiri+kami/ as a headword but gives /kiri+gami/ as an alternative pronunciation.

ori-kami

H2: 折紙 a folded paper or document accompanying any curiosity, stating its history, &c.; a certificate

NKD lists only /ori+gami/, with *rendaku*, as a headword, but the entry notes /ori+kami/ as an older pronunciation.

shibu-kami

H2: 渋紙 a kind of tough reddish paper, used for wrapping

NKD lists /šibu+kami/ as a headword, although the entry notes /šibu+gami/ as a recent alternative pronunciation.

furukane

H2: 古鉄 old metal

shirokane

H2: 白金 silver

Typically written 〈銀〉 (*Kōjien*, *Daijirin*); the kanji in H2 are morphologically/etymologically more transparent. *NKD* lists only /širo+gane/, with *rendaku*, as a headword, but the entry notes /širo+kane/ as an older pronunciation.

mizukane

H2: *midzu-kane* 水銀 quick-silver, mercury

? *ai-kasa*

H2: 合傘 two persons under one umbrella

NKD lists only /ai+gasa/, with *rendaku*, as a headword, and the entry does not mention /ai+kasa/ as a possible alternative pronunciation. Typically written 〈相傘〉 (*Kōjien*, *Daijirin*). The first element is etymologically but not synchronically verbal (see the explanation for *ai-bore* above in sub-section 3[b]).

matsukasa

H2: 松珠 a pine burr

Typically written 〈松毬〉 or 〈松笠〉 (*Kōjien*, *Daijirin*).

mizukasa

H2: *midzu-kasa* 水勢 the volume or quantity of water

Typically written 〈水嵩〉 (*Kōjien*, *Daijirin*).

? *oribe-tsukasa*

H2: 織部司 An officer in the Mikado's household who has charge of the clothing materials and their dying

Lyman had “*oribetsu-*” here, implying *oribetsu-kasa*, but this division is clearly an error. Although /oribe+cukasa/ would have been a relevant example, *NKD* lists only /oribe+zukasa/, with *rendaku*, as a headword, and the entry does not mention /oribe+cukasa/ as a possible alternative pronunciation, although it does note the katakana spelling 〈オリベツカサ〉 in H3.

toshikasa

H2: 年重 age, number of years old, elder in years

Typically written 〈年嵩〉 (*Kōjien*, *Daijirin*).

ashikase

H2: *ashigase* 桎 stocks for confining the feet of criminals

Typically written 〈足枷〉 (*Kōjien*, *Daijirin*). Although H2 lists *ashi-gase*, with *rendaku*, as a headword, Yanaike (1991:71) notes that *ashi-kase*, without *rendaku*,

appears as an example in the entry for the headword *kase* (modern Tōkyō /kase/ 枷 ‘shackle’). Only /aši+kase/ appears as a headword in *NKD*, although the entry mentions /aši+gase/ as an alternative pronunciation.

kubi-kase

H2: *kubi-gase* 枷 the cangue

Typically written 〈首枷〉 or 〈頸枷〉 (*Kōjien*, *Daijirin*). Although H2 lists *kubi-gase*, with *rendaku*, as a headword, Yanaike (1991:71) notes that *kubi-kase*, without *rendaku*, appears as an example in the entry for the headword *kase* (modern Tōkyō /kase/ 枷 ‘shackle’). Only /kubi+kase/ appears as a headword in *NKD*, and the entry does not mention any alternative pronunciation. H3 has *kubikkase* as a separate headword, defined as colloquial for *kubi-gase*, and *NKD* lists /kubi+Qkase/ as a separate headword.

maro-kase

H2: 丸 a round ball

Typically written 〈丸かせ〉 (*Kōjien*, *Daijirin*). The *NKD* entry for this obsolete noun says that it based on the adverbial form of an obsolete verb, the OJ counterpart of which was ^{OJ}/marokas-u/ ‘to make into a ball’: ^{OJ}/marokasi/ > early modern /marokase/. Martin (1987:720,791) analyzes /kas/ in the verb as etymologically a sequence of two formants (i.e., derivational suffixes). The adjective root ^{OJ}/maro/ was gradually ousted by a form ending in a high vowel, as in modern Tōkyō /maru-i/ 丸い ‘round’, but it does not seem too outlandish to think that a late-19th-century speaker could have analyzed /marokase/ as an allomorph of the adjective root combined with a cranberry morph. Interestingly, *NKD* lists another obsolete verb /marogas-u/ ‘to make roll, to make spin’ as a headword, and the entry notes that it is etymologically identical to ^{OJ}/marokas-u/, but it appears that *rendaku* has applied to a perceived second element.

te-kase

H2: *te-gase* 手梃 handcuffs

Typically written 〈手枷〉, 〈手梃〉, or 〈手械〉 (*Kōjien*, *Daijirin*). Although H2 lists *te-gase*, with *rendaku*, as a headword, Yanaike (1991:71) notes that *te-kase*, without *rendaku*, appears as an example in the entry for the headword *kase* (modern Tōkyō /kase/ 枷 ‘shackle’). Only /te+kase/ appears as a headword in *NKD*, although the entry mentions /te+gase/ as an alternative pronunciation.

abura-kasu

H2: 油枯餅 oil-cake, (the refuse after the oil is pressed out)

Typically written 〈油粕〉 or 〈油糟〉 (*Kōjien*, *Daijirin*).

cha-kasu

H2: 茶滓 tea grounds

soba-kasu

H2: 雀斑 freckles

The *NKD* entry makes it clear that this word is etymologically a figurative use of /soba+kasu/ 蕎麦滓 ‘buckwheat husk’, but the kanji obscure the etymology, and it was probably not a synchronic compound for late-19th-century speakers.

tabe-kasu

H2: 食滓 the scraps of food left after eating

tare-kasu

H2: 垂糟 the sediment or grounds left after straining or filtering

ai-kata

H2: 合方 a mate, partner, companion, fellow, playmate, comrade

Typically written (相方) (*Kōjien*, *Daijirin*). The H2 entry also gives *ai-kata*, written (合形) and defined as “a counterpart, or impression (as of a seal),” but no such item appears in *NKD*. The first element is etymologically but not synchronically verbal (see the explanation for *ai-bore* above in sub-section 3[b]).

ara-kata

H2: 荒方 for the most part, in the main, mostly, generally

Typically written (粗方) (*Kōjien*, *Daijirin*).

ato-kata

H2: 跡形 mark, trace

de-kata

H2: 出方 an inferior policemen, constable or spy

fuchi-kata

H2 [s.v. *fuchi*]: 扶持方 the officer who serves out rations, the number of rations

funa-kata

H2: 舟方 sailors, boatmen

Typically written (船方) (*Kōjien*, *Daijirin*). The H2 entry actually has (力) as the second kanji, but this is clearly an error, as Yanaike (1991:71) notes. It remains uncorrected in H3.

haha-kata

H2 [s.v. *haha*]: 母方 *haha-kata no shinrui* relations on the mother's side

hake-kata

H2: demand, sale or market for goods

Combining a verb with /kata/ is a highly productive morphological pattern in modern Tōkyō Japanese, and the resulting word is a noun (Martin 1975:911–913). This pattern is covered in every textbook for beginning learners of Japanese as a foreign language (e.g., Jorden and Noda 1988:275). The verb in this case is /hake-ru/ 捌ける 'to be sold'. Although /hake+kata/ does not appear in *Kōjien* or *Daijirin*, it is listed as a headword in *NKD* and is likely to be written 〈捌け方〉. Although this /kata/ is etymologically identical to /kata/ 方 'direction', it never shows *rendaku*, and the combinations with different verb first elements should probably not be counted separately.

hyōrō-kata

H2: *hyōrō-kata* 兵糧方 the officer who supplies an army with provisions, commissary

Lyman had "hiyooro-", with a short final vowel, but this is clearly an error.

hisa-kata

H2: 久堅 a word without meaning called *makura-kotoba*, used only in poetry in connection with heavenly objects . . .

Although the meaning of the *makura-kotoba* is obscure according to the *NKD* entry, it was reinterpreted as meaning 'a long while' and survives in modern Tōkyō in /hisa+kata+buri/ 久方振り 'for the first time in a long while', which appears as a headword even in a dictionary for elementary-school students (Saeki and Mabuchi 1987).

izu-kata

H2: *idzukata* 何方 where, what place, or region

kari-kata

H2: 借方 the borrower, a lessee

kashi-kata

H2: 貸方 a lender, creditor

The H2 entry actually has 〈貸〉 as the first kanji, but this is clearly an error, as Yanaike (1991:71) notes. It was corrected in H3.

koshi-kata

H2: 来方 the past, the time past of one's life, old times

kure-kata

H2: 暮方 the evening, sunset

kawase-kata

H2 [s.v. *kawase*]: 為替方 a banker, exchanger

mae-kata

H2: *maye-kata* 前方 before, previously

me-kata

H2: 目方 weight

mi-kata

H2: 御方 a friend; one of the same army, side, or party; our side

Martin (1987:477) says that /mi/ is etymologically a no-longer-productive exalting prefix /mi/, but the alternative ways of writing this word ((味方) or (身方)) suggest that speakers may not analyze it synchronically. This prefix generally blocks *rendaku* in the immediately following element (see the comments on *mi-hashii* above in this sub-section).

moto-kata

H2: 本方 the first party, original owner; first seller, or holder

ni-kata

H2: 煮方 a cook

mochii-kata

H2 [s.v. *mochii*]: *Kono kusuri no mochii-kata shirimasen* I don't know how this medicine is to be used

This example is another instance of the V+/kata/ pattern (see the explanation for *hake-kata* above). *NKD* lists it as a headword, written (用い方).

ori-kata

H2: 折形 a crease or mark made by folding; the mode or way of folding

oya-kata

H2: 親方 the chief, head, boss, ringleader

sabake-kata

H2: the sale, market

This example is another instance of the V+/kata/ pattern (see the explanation for *hake-kata* above). The verb in this case is /sabake-ru/ 捌ける 'to be sold'. Although /sabake+kata/ does not appear in *Kōjien* or *Daijirin*, it is listed as a headword in *NKD* and is likely to be written (捌け方).

saki-kata

H2: 先方 the other party or person in any affair, the opposite party, the plaintiff

sato-kata

H2: 里方 the wife's family or relations

sen-kata

H2: 為方 resource, means, expedient

The *NKD* entry for this example says that the first element /seN/ is etymologically the irrealis form (*mizenkei* 未然形) of the ancestor of the verb /su-ru/ 'to do' followed by a suppositional suffix that had the form /mu/ in EMJ (Ikeda 1975:68).

shiire-kata

H2: 仕入方 the purchasing clerk or agent in a mercantile house; also, the way in which goods have been purchased; mode of instruction

The second and third meanings in the H2 entry are instances of the V +/kata/ pattern (see the explanation for *hake-kata* above).

shi-kata

H2: 仕方 way or method of doing; treatment, conduct toward others; how anything is made; resource; gesture or sign

This example is another instance of the V +/kata/ pattern (see the explanation for *hake-kata* above). The verb in this case is /su-ru/ 'to do', despite the kanji (仕).

shitate-kata

H2: 仕立方 the manner in which anything is got up, prepared, or made

This example is another instance of the V +/kata/ pattern (see the explanation for *hake-kata* above).

shite-kata

H2: a workman, operative

Typically written (仕手方) (*Kōjien*, *Daijirin*).

tana-kata

H2: 店戸 a clerk, shop-boy

NKD lists only /tana+gata/, written (店方) and defined as 'merchant house', as a headword, but the entry gives /tana+kata/ as an alternative pronunciation.

tsukai-kata

H2: 使方 the way of using, or how to use anything

This example is another instance of the V+/kata/ pattern (see the explanation for *hake-kata* above). However, this item appears as a headword in *NKD*, and the entry gives /cukai+gata/, with *rendaku*, as an older pronunciation.

uchi-kata

H2: 内方 wife

uma-kata

H2: 馬方 the person who attends and leads a pack-horse

ura-kata

H2: 卜方 the fortune, or future events, as told by a fortune-teller
Typically written 占形 or 占象 (*Kōjien*, *Daijirin*).

ya-kata

H2: 館 a large house, a palace, the residence of a noble

Martin (1987:571) gives an etymology implying that the alternative writing 屋形 is etymologically transparent (cf. bound /ya/ 屋 ‘house’ and the independent noun /kata/ 形 ‘shape’). An ordinary speaker in the late 19th century would probably not have analyzed /yakata/ this way.

yu-kata

H2: 涼衣 a thin garment of a single thickness worn in summer

The *NKD* entry and Martin (1987:579) say that this example is a clipped form of ^{L_{MJ}}/yu+kata+bira/ 湯帷子 (cf. modern Tōkyō /yu/ ‘hot water’, /kata+bira/ ‘unlined garment’). The second element is etymologically a combination of a bound element ^{L_{MJ}}/kata/ 片 ‘one (of two)’ and ^{L_{MJ}}/hira/~bira/ 片/枚 ‘sheet’. *Rendaku* in the second element of the unclipped form (^{L_{MJ}}/yu+gata+bira/) form would have violated both the usual version of Lyman’s Law and the Right-Branch Condition (see §7.2.3). In any case, it seems unlikely that /yukata/ was a synchronic compound for late-19th-century speakers.

yū-kata

H2: *yu-kata* 夕方 the evening about sundown

The H2 romanization *yu-kata*, with a short first vowel, does not match the katakana spelling ユフカタ in the entry and is clearly a misprint. It was corrected to *yū-kata* in H3. *NKD* lists only /yuH+gata/, with *rendaku*, as a headword, but the entry gives /yuH+kata/ as an alternative pronunciation.

nari-katachi

H2: 容貌 the form, figure, shape, appearance

Typically written 形姿 (*Kōjien*, *Daijirin*). The first element is etymologically based on the verb /nar-u/ 成る ‘to become’ (Martin 1987:493).

shina-katachi

H2: 品形 form, figure, shape

abura-kawa

H2: 膜 the membrane that encloses the fat

This item does not appear in *Kōjien* or *Daijirin*, but *NKD* lists /abura+kawa/, written 油皮 and defined as ‘fatty skin’, as a headword.

atsu-kawa-zura

H2: *atsu-kawa-dzura* 厚皮面 thick-skinned face, brazen-faced, impudent

kata-kawa

H2: 片側 one side

NKD lists only /kata+gawa/, with *rendaku*, as a headword, but the entry gives /kata+kawa/ as an alternative pronunciation. In modern Tōkyō, /gawa/ has almost completely supplanted /kawa/ as the pronunciation of the second element used as an independent word.

ni-kawa

H2: 膠 glue

Martin (1987:497) says that this example is etymologically a compound (cf. /ni-ru/ 煮る ‘to boil’, /kawa/ 皮 ‘skin’), but it is unlikely that a late-19th-century speaker would have analyzed it this way.

ō-kawa

H2: 大川 a big river

shibu-kawa

H2: 渋皮 the astringent bark, the inner bark of a tree

togi-kawa

H2: 磨皮 a razor-strop

Typically written 研革 (*Kōjien*, *Daijirin*).

totsu-kawa

H2: unexpectedly, suddenly

Typically written とつかわ (*Kōjien*, *Daijirin*). The *NKD* entry for this example does not comment on /totsu/ but says that /kawa/ is a suffix, and the *NKD* entry for /kawa/ as a suffix says that it emphasizes the state or condition denoted by the element to which it attaches. The first element must be Sino-Japanese /totsu/, as in archaic /totsu to šite/ 突として ‘suddenly’ (cf. /totsu-zeN/ 突然 ‘suddenly’).

tsukuri-kawa

H2: 作革 leather

Typically written 〈作り皮〉 (*Kōjien*, *Daijirin*).*usu-kawa*

H2: 膜 a thin skin, a membrane, thin pellicle, or film

Typically written 〈薄皮〉 (*Kōjien*, *Daijirin*).*uwa-kawa*

H2: 表皮 the outside skin, the cuticle, scum

Typically written 〈上皮〉 (*Kōjien*, *Daijirin*).*abura-ke*

H2: 油気 oily, fatty, greasy, (in taste)

ara-ke-nai

H2: 荒気 rough in temper, savage, cruel, churlish

The *NKD* entry analyzes this archaic example as /arake+na-i/ and identifies /na/ as an intensifier. This /na/ was an adjective-forming derivational suffix in classical (i.e., Early Middle) Japanese (Ikeda 1975:264). For this example to be relevant for Lyman, he must have analyzed /arake/ as /ara+ke/, and there is no doubt that /ara/ is related to the root of the adjective /ara-i/ 荒い ‘rough, violent’. The second element is etymologically a suffix that could be added to a noun or an adjective stem to derive an adjective meaning ‘BASE-like’ (Ikeda 1975:262). The adjective that had the classical forms /ara+ke-ši/ (conclusive), /ara+ke-ki/ (adnominal), etc., is obsolete, but its stem was the base to which /na/ was added to create the ancestor of /arake+na-i/. The second kanji 〈気〉 in the H2 entry implies /ke/ ‘indication’, and although this may be a folk etymology, it would have been a plausible analysis for a late-19th-century speaker who knew the word /arake+na-i/.

chiri-ke

H2: 身柱 nape of the neck

NKD lists /čiri+ke/ as a headword, but the entry gives /čiri+ge/ as an alternative pronunciation. The entry gives no definite etymology, and it is not clear how a late-19th-century speaker might have analyzed it.

hata-ke

H2: 圃 a field, vegetable garden

Typically written 〈畑〉 or 〈畠〉 (*Kōjien*, *Daijirin*). Lyman’s division (i.e., /hata+ke/) is surely correct both etymologically and synchronically. The synonym /hata/ 畑 also appears as a headword in H2, and both words are still in use. Corresponding Old Japanese words are also attested (^{OJ}/pata/, ^{OJ}/patake/), and

Martin (1987:401) suggests that the last syllable of ^{OJ}/patake/ might be related to ^{OJ}/ka/ 'place', but he also notes that ^{OJ}/patake/ might reflect an older form that was simply clipped prehistorically to yield ^{OJ}/pata/. In any case, the final syllable of the longer form was separable but already semantically opaque in Old Japanese, and it has remained so.

iro-ke

H2: 色気 love or fondness for the opposite sex

kawara-ke

H2: 土器 unglazed earthenware

Despite the kanji, the *NKD* entry says this example is etymologically a compound of /kawara/ 瓦 'tile' and obsolete /ke/ 筥 'food container'. It seems unlikely that late-19th-century speakers would have analyzed this example, and even if they did, it would have been semantically opaque.

koshi-ke

H2: 帶下 fluor-albus

Typically written (腰気) (*Kōjien*, *Daijirin*).

mizu-ke

H2: *midzu-ke* 水気 moisture, dampness

mukai-ke

H2: nausea, sickness of stomach

Kōjien and *Daijirin* do not list this word, but *NKD* lists it as a headword, written (迎気). The second element is semantically transparent (cf. /haki+ke/ 吐き気 'nausea'), but the first element is not. The first kanji (迎) implies /mukai/ 'meeting (someone)', which appears as a headword in H2 but has been ousted by /mukae/ (cf. /mukae-ru/ 迎える 'to meet') in modern Tōkyō. It seems more likely, however, that there is a connection to the mimetic root /muka/ in /muka+muka suru/ むかむかする 'to feel sick to one's stomach'.

mushi-ke

H2: 虫気 the appearance of having worms, as, in children; the pains that precede child-birth

nebari-ke

H2: 粘気 gummy, of an adhesive, glutinous, sticky, tenacious nature or quality

? nigo-ke

H2: 毳 the hair of the body

This item also appears as a headword in H3, defined as “the hair of the body, down,” but H3 gives *nikoge* as an alternative pronunciation. The latter also appears as a separate headword in H3, defined as “the fine feathers or down of a bird,” with no cross-reference to *nigoke*. Only /niko+ge/ 和毛 ‘down’ is listed as a headword in *NKD*, with no alternative pronunciation. Perhaps /nigoke/ was a metathesized form that was actually in use in Tōkyō.

nodo-ke

H2: 喉庫 sore throat, tonsillitis

Typically written 喉氣 (Kōjien; not listed in *Daijirin*).

ō-mi-ke

H2: 大御食 the boiled rice offered to the *Kami*, or eaten by the *Tenshi*

In Old Japanese, adjectival ^{OJ}/opo/ ‘great’ and ^{OJ}/mi/ (an exalting prefix) were often combined to create highly exalting forms, as in ^{OJ}/opo+mi+uta/ ‘his majesty the emperor’s poem’ (cf. modern Tōkyō /uta/ ‘song; poem’). The last syllable in the H2 headword is obsolete /ke/ 食 ‘food’, which is etymologically identical to obsolete /ke/ 筥 ‘food container’ (see the explanation for *kawara-ke* above in this sub-section), and ^{OJ}/opo+mi+ke/ is attested. Although /oH+mi+ke/ is now obsolete, a late-19th-century speaker who knew it could perhaps have analyzed it as ending with a noun-like element denoting food. The prefix /mi/ generally blocks *rendaku* in the immediately following element (see the comments on *mi-hashi* above in this sub-section).

saku-ke

H2: or sakukmō, 作毛 the crop as it appears before it is cut

NKD lists only /saku+ge/, with *rendaku*, as a headword, but the entry gives /saku+ke/ as an alternative pronunciation.

shiru-ke

H2: 汁氣 juicy, succulent

sori-ke

H2: 剃毛 the refuse hair that has been shaved off

tawa-ke

H2: 戲氣 a dunce, fool

Typically written 戲け (Kōjien, *Daijirin*). This example is a deverbal noun (cf. /tawake-ru/ ‘to act foolishly’), and /ke/ is etymologically a derivational suffix (i.e., a formant; see Martin 1987:766,792). Thus, the second kanji 氣 in the

H2 entry is *ateji*, and it probably helped to induce Lyman to folk-etymologize /ke/ as a noun element.

tsuyu-ke-ki

H2: *tsuyukei* wet with dew, dewy

This item is an adjective, and the headword in the H3 entry is *tsuyukeki*, the classical adnominal form (*rentaikei* 連体形), which suggests that the word was already archaic in the late 19th century. *Kōjien* and *Daijirin* list only the classical conclusive form /cuyu+ke-ši/, written 露けし. Since there are no adjective stems ending in /e/ in modern Japanese, the H2 headword *tsuyukei* is presumably just an error. The first element of this example is obviously /cuyu/ 露 'dew', and the second element is etymologically a suffix that could be added to a noun or an adjective stem to derive an adjective meaning 'BASE-like' (Ikeda 1975:262; see the explanation for *ara-ke-nai* above in this sub-section). Nonetheless, a folk etymology identifying the second element as /ke/ 気 'indication' would not have been outlandish.

ubu-ke

H2: 産毛 the hair of a newly born infant

NKD lists only /ubu+ge/, with *rendaku*, as a headword, but the entry gives /ubu+ke/ as an alternative pronunciation.

ya-take

H2: 弥武 courageous, spirited, heroic, intrepid, bold

Typically written 弥猛 (*Kōjien*, *Daijirin*). This item corresponds to a modern Tōkyō adjectival noun which is archaic and normally used only in the adverbial phrase /yatake ni/, 'courageously'. Lyman had "yata—" here, implying *yata-ke*, but this division is an error. There is no hyphen in the H2 entry, but it contains a cross-reference to *takeki*, which is the classical adnominal form (*rentaikei* 連体形) of an archaic adjective meaning 'courageous'. The H2 entry for *takeki* gives the kanji 猛. The *NKD* entry for obsolete /ya/ 弥 'still more' says it is etymologically the same as /ya/ 八 'eight', and *Jōdai* lists both under the same headword (^{OJ}/ya/) as different senses.

chi-kemuri

H2: 血煙 vapor which rises from blood

mizu-kemuri

H2: *midzu-kemuri* 水煙 the mist which rises from water

uma-kemuri

H2: 馬煙 the dust raised by horses travelling

Typically written 馬煙 (*Kōjien*, *Daijirin*).

kabu-ki

H2: 冠木 a horizontal piece of timber over a gate, a lintel

This item clearly belongs here, since there is no doubt about the second element (cf. /ki/ 木 ‘tree; wood’). The first element is obsolete in the relevant meaning (cf. ⁰¹/kabu/ ‘head, top’), but a connection to etymologically related /kaburi/ 頭 ‘head’ (in the set phrase /kaburi o fur-u/ 頭を振る ‘to shake one’s head’) and /kabur-u/ 被る ‘to put on the head’ would probably have been easy to see for a late-19th-century speaker. The kanji (冠) in the H2 entry for this verb would have reinforced the connection.

kara-suki

H2: 犁 a plough

Lyman had “karasu-” here, implying *karasu-ki*, but the only entry in H2 romanized (karasuki) is this word meaning ‘plow’. There is no hyphen in the H2 headword, but it is hard to imagine that its last two syllables do not correspond to the common modern Tōkyō word /suki/ 鋤 ‘plow’. *NKD*, *Kōjien*, and *Daijirin* all give an alternative way of writing the word that implies this analysis: (唐鋤) (cf. /kara/ ‘foreign lands’). H2 lists *suki* as a headword, written (耨) and defined as “a spade.”

kare-ki

H2: 枯木 a withered or dead tree

koshi-ki

H2: ^[1] 甑 a vessel for steaming food in
^[2] 轂 the hub of a wheel

Martin (1987:458) says these two headwords are etymologically identical, noting the similarity in shape of the objects denote, but he offers no suggestions about etymology or division into elements. These two items surely were not synchronic compounds for late-19th-century speakers, but Lyman may have had a folk etymology in mind.

kuchi-ki

H2: 朽木 a decayed tree, rotten wood

? *kusu-ki*

H2: the *Quercus Serrata*; deciduous oak

H3 also lists *kusuki* as a headword, but *NKD* lists only the frozen phrase /kusu+no+ki/ ‘camphor tree’, written (樟) or (楠), with the genitive particle /no/ preceding what is obviously /ki/ 木 ‘tree; wood’ etymologically. (Hepburn had the wrong species in his definition: *Quercus serrata* is /ko+nara/ 小櫨 ‘konara oak’; /kusu+no+ki/ is *Cinnamomum camphora*.) H2 and modern dictionaries list

/kusu/ as a headword, although it is seldom used as a word on its own. Martin (1987:466) suggests that it may be etymologically identical to /kusu/ in /kusuri/ 薬 'medicine'. Interestingly, present-day speakers typically do not analyze tree names written with single kanji like /kusunoki/ as containing /ki/ 木 'tree; wood' (e.g., /enoki/ 榎 'hackberry tree'), and the same was probably true of late-19th-century speakers.

ma-ki

H2: ^[1] 薪 firewood

^[2] 榿 a kind of fir tree

Martin (1987:470) tentatively suggests that /maki/ 薪 'firewood' (just above) may be etymologically identical to /maki/ 榿 'yew' (*Podocarpus macrophylla*), but they are separate lexemes for a modern speaker. As the alternative kanji representation (真木) implies, the latter originated as a combination of the ancestors of bound /ma/ 'true' and /ki/ 'tree; wood'.

^[3] 牧 (contr. of *uma* and *oki*) pasture ground for horses, park, game-preserve, pasture-land

If Lyman took the etymology suggested in the H2 entry to be correct (cf. /uma/ 馬 'horse', /ok-u/ 置く 'to put'), this example would have been irrelevant for him, since the ancestor of vowel-initial /oki/ would not have been susceptible to *rendaku*. On the other hand, the *NKD* entry says it originated as a combination of Sino-Japanese /ma/ 'horse' and obsolete /ki/ 'enclosure', in which case it would be etymologically (but not synchronically) relevant. Yanaïke (1991:71) notes three other H2 headwords pronounced /maki/, but it seems very unlikely that Lyman would have had any of these in mind. Two are Hepburn's citation forms for verbs with monomorphemic stems: /mak-u/ 蒔く / 播く / 撒く 'to sow; to scatter' (for which H2 has 播) and /mak-u/ 巻く / 捲く 'to roll up, to wind' (for which H2 has 絡). The third is a noun derived from the latter: /maki/ 巻 '(book) volume'.

maru-ki

H2: 丸木 a round log

masa-ki

H2: 杜仲 the *Evonymus japonica*

Typically written 榿 or 正木 (*Kōjien*, *Daijirin*). This example is a clipping of a frozen phrase (Martin 1987:473), attested in Old Japanese as ^{OJ}/ma+saki no ka-dura/ 'true-flourishing vine' (cf. modern Tōkyō /ma/ 真 'true', /sak-u/ 咲く 'to bloom', /no/ genitive, /kazura/ 葛 'vine'). The last syllable of ^{OJ}/ma+saki/ was not the same as ^{OJ}/kwi/ 木 'tree'. Nonetheless, as the kanji representation (正木)

suggests, late-19th-century speakers who analyzed /masaki/ almost certainly folk-etymologized it as /masa/ (cf. /masa ni/ 正に ‘exactly’) combined with /ki/ 木 ‘tree’.

nazu-ki

H2: 腦 *nadzu-ki* the head

This obsolete word underwent a straightforward semantic change (‘brain’ > ‘head’), but it has no accepted compound etymology (Martin 1987:494). Lyman must have had some folk etymology in mind, but there is no way to know why he divided this example as /nazu+ki/ rather than as /na+zuki/ or what he thought the two elements were.

nama-ki

H2: 生木 unseasoned or green wood

nami-ki

H2: 列樹 trees planted in a row or in regular order, as along the side of a road or before a *Miya*

Typically written (並木) (*Kōjien*, *Daijirin*).

saka-ki

H2: 榊 the name of a tree

Martin (1987:516) tentatively suggests that /saka/ originated as the ancestor of /saka/ 坂 ‘slope; boundary’, but the *NKD* entry identifies it as (the etymological root) of /sakae/ 栄え ‘flourishing’ (cf. /sakae-ru/ ‘to flourish’). There is no doubt that the final syllable of /sakaki/ is etymologically the ancestor of /ki/ 木 ‘tree; wood’, although late-19th-century speakers probably did not analyze it (see the explanation for *kusu-ki* above).

shira-ki

H2: 白木 white wood, plain, unvarnished, unpainted

taru-ki

H2: 椽 the timbers of a roof, a rafter

Kōjien and *Daijirin* give etymologically transparent (垂木) as an alternative way of writing this word. It is attested in Old Japanese and appears to have originated as a phrase consisting of the adnominal form (*rentaikei* 連体形) of ^{OJ}/tar-u/ ‘to droop’ modifying the noun ^{OJ}/kwi/ 木 ‘tree’ (Martin 1987:542). Late-19th-century speakers may have connected the second element to /ki/ 木 ‘tree’, but the first element is problematic, since the OJ verb has been displaced by an etymologically related verb that used to be its transitive counterpart (modern *Tōkyō* /tare-ru/ 垂れる).

tori-ki

H2: 取木 propagating trees by layers, or by binding together two branches of different trees partially cut

tsugi-ki

H2: 接木 a grafted tree

Typically written (接木) (*Kōjien*, *Daijirin*).

ubu-ki

H2: 初衣 the first clothes worn by an infant

NKD lists only /ubu+gi/, with *rendaku*, as a headword, but the entry gives /ubu+ki/ as an alternative pronunciation. *Kōjien* and *Daijirin* give etymologically transparent (初着) as an alternative way of writing this word (cf. /ubu/ 産/初 'newborn; naive', /ki-ru/ 着る 'to wear'). Since the second element is verbal, Lyman should have listed it in sub-section 4(a) above.

ue-ki

H2: *uyeki* 植木 a plant; flowers or young trees kept in pots, or for transplanting, a nursery plant

The H2 entry actually has (殖) as the first kanji, but this is clearly a misprint. It was corrected in H3.

waka-ki

H2: 若木 a young tree

NKD lists only /waka+ki/ as a headword, although the entry gives /waka+gi/ as an alternative pronunciation.

yak-ki

H2: suddenly flushed, as with anger

Typically written (躍起) (*Kōjien*, *Daijirin*). This example is a Sino-Japanese binom and therefore does not belong here. In any case, this example is beside the point because the /Q/ in /yaQ·ki/ makes *rendaku* impossible (see §7.4.7).

arai-ko

H2: 洗粉 a washing powder made of beans, used as soap

arashi-ko

H2: 佃奴 a farmer boy, a laborer on a farm

Typically written (荒し子) or (嵐子) (*Kōjien*, *Daijirin*).

asu-ko

H2: yonder, there

Kōjien and *Daijirin* give the kanji (彼所), but this word is typically written (あすこ) today. The form /asoko/ is more common in modern Tōkyō. Although

not attested as an independent word in Old Japanese, ^{OJ}/ko/ meant ‘place’ (Martin 1987:542). It synchronically reasonable to segment /asuko/~/asoko/, given the pervasive regularities in the modern Tōkyō system of demonstratives and their corresponding interrogative forms (Martin 1975:1066). Compare *ko-ko* and *so-ko* below.

? *dada-ko*

H2: *dadakko* 駄児 a cross, fretful child, cross-patch.

Lyman had “dada-” here, implying *dada-ko*, but H2 lists only *dadakko*. *NKD* lists only /*dadaQko*/ 駄々っ子 ‘unreasonable child; spoiled child’ as a headword, and the entry does not say anything about an alternative pronunciation. The /*Q*/ in the correct pronunciation makes *rendaku* impossible, of course (see §7.4.7), but Lyman would presumably have cited it anyway, since he listed many other examples with /*Q*/ immediately preceding a potential *rendaku* site.

funa-ko

H2: 舟子 a sailor, boatman

hari-ko

H2: 張籠 a box made of paper

Typically written ⟨張り子⟩ (*Kōjien*, *Daijirin*). The *NKD* entry for this example offers no etymology, but /*hari*/ is obviously related to the verb /*har-u*/ 張る/貼る ‘to paste, affix’. The second kanji in the H2 entry suggests a connection to obsolete /*ko*/ ‘basket’, which is etymologically identical to the second syllable of modern Tōkyō /*kago*/ 籠 ‘basket’ (Martin 1987:433), but this is probably a folk etymology. The word /*hari+ko*/ actually means ‘papier-maché’, and H3 gives a much better definition (“anything made of paper; papier-maché”). The /*ko*/ in this example is probably just a figurative, semantically bleached use of /*ko*/ 子 ‘child’.

haru-ko

H2: 春子 a silk-worm that breeds but once a year

Typically written ⟨春蚕⟩ (*Kōjien*, *Daijirin*). *NKD* lists only /*haru+go*/, with *rendaku*, as a headword, but the entry gives /*haru+ko*/ as an alternative pronunciation. The obsolete word for ‘silkworm’ (^{OJ}/*kwo*/) is etymologically identical to modern Tōkyō /*ko*/ 子 ‘child’ (^{OJ}/*kwo*/) (Martin 1987:452), and it is the etymological second element in the modern word /*kaiko*/ 蚕 ‘silkworm’ (cf. ^{OJ}/*kapi+kwo*/), the first element of which is related to the modern verb /*ka-u*/ 飼う ‘to breed, raise’. It is puzzling that Lyman overlooked /*kaiko*/, which appears as a headword in H2 and would be an appropriate example for this sub-section.

iri-ko

H2: 煎海参 trepang or bich-de-mer

Typically written (海参) or (煎海鼠) (*Kōjien*, *Daijirin*). The last syllable of this example seems to be an etymologically separable element (Martin 1987:425), but it is not clearly related to any other element, and Martin (1987:453) simply defines it as 'sea-cucumber'. He connects /iri/ to the verb /ir-u/ 煎る 'to roast'.

ishi-ko

H2: 石子 stone chips, or small pieces of stone

ko-ko

H2: 爰 here, this place

Kōjien and *Daijirin* give the kanji (此所) (among others), but this word is typically written (ここ) today. The H2 entry describes /ko+ko/ as a contraction of /kono tokoro/ この所 'this place', but see the explanation for *asu-ko* above for the etymology of /ko/.

kumi-ko

H2: 組子 the members of a company or club

kushi-ko

H2: 串海鼠 biche-de-mer strung on a stick and dried

The last syllable of this obsolete example is presumably the same etymological element as in *iri-ko* above and *nama-ko* below. It is not clearly related to any other element, and Martin (1987:453) simply defines it as 'sea-cucumber'. The first element is obviously /kuši/ 串 'skewer'.

mai-ko

H2: 舞妓 a dancing-girl

The alternative kanji representation (舞子) (given in both *Kōjien* and *Daijirin*) is etymologically and morphologically transparent (cf. /ma-u/ 舞う 'to dance').

mama-ko

H2: 継子 step-child

mizu-ko

H2: *midzuko* 稚子 a new born infant

NKD lists only /mizu+ko/ as a headword, although the entry gives /mizu+go/ as an alternative pronunciation. The alternative kanji representation (水子) (given in both *Kōjien* and *Daijirin*) is etymologically and morphologically transparent.

mi-ko

H2: ^[1] 巫女 a woman who pretends to hold communication with the gods and the spirits of the dead, and to tell fortunes; a fortune-teller, witch

The *NKD* entry for this example does not offer a definite etymology, but it mentions two proposals: (1) a clipping of /kami+ko/ 神子, which appears as a headword in *NKD* (but with no attestation information; cf. the alternative kanji 神子) for /miko/ in *Kōjien* and *Daijirin*); and (2) a combination of an exalting prefix and the noun meaning ‘child’ (as in the example just below).

^[2] 皇子 a prince or son of the Mikado

As the alternative kanji representation 御子 (given in both *Kōjien* and *Daijirin*) suggests, this example is etymologically a combination of an exalting prefix and the noun meaning ‘child’ (Martin 1987:478).

Yanaïke (1991:70) notes two other H2 headwords: /miko/ 三糸 ‘three strands’ and /miko/ 三子 ‘triplets’. Since neither of these is listed in *NKD*, I ignore them here.

migaki-ko

H2: 磨粉 polishing powder

moro-ko

H2: a kind of small river fish

Typically written 諸子 (*Kōjien*, *Daijirin*).

nama-ko

H2: 海鼠 the sea-slug, or sea-cucumber; beche de mer

The last syllable of this example seems to be an etymologically separable element (Martin 1987:492), but it is not clearly related to any other element, and Martin (1987:453) simply defines it as ‘sea-cucumber’ (see the explanation for *iri-ko* above). He relates /nama/ to the root in /name+ra+ka/ 滑らか ‘slippery’ (Martin 1987:492).

ne-ko

H2: 猫 a cat

The *NKD* entry and Martin (1987:495) agree that this example is etymologically a combination of /ne/ ‘meow’ and /ko/ 子 ‘child’, but it is unlikely that late-19th-century speakers would have analyzed it as a synchronic compound.

nicha-ko

H2: paper chewed up into a soft ball

This item is listed as a headword (with no kanji) in *NKD*, but the only citation is from H2. The first element is presumably mimetic (see *nicha-tsuku* in sub-section 4(a) above), which makes an analysis into two elements synchronically

reasonable. The /ko/ in this example is probably just a figurative, semantically bleached use of /ko/ 子 'child'.

nuno-ko

H2: 布子 padded winter clothes

Lyman had “nuna-” here, here, implying /nuna+ko/, but this must be an error, since no such headword appears in H2 or *NKD*. There is no etymology in the *NKD* entry, but this example is an obvious compound morphologically (cf. /nuno/ 布 'cloth'). The /ko/ is probably just a figurative, semantically bleached use of /ko/ 子 'child'.

obo-ko

H2: 鰯魚 the young of the fish called *Bora*

Typically written 〈おぼこ〉 (*Kōjien*, *Daijirin*). The *NKD* entry does not give a definite etymology, but the H2 meaning originated as a figurative use of the obsolete adjectival noun /oboko/ 'naïve', which remains in use as the first element of /oboko+musume/ おぼこ娘 'naïve girl'. Identifying the last syllable with /ko/ 子 'child' may not be etymologically correct, but even if it is not, it is certainly a reasonable folk etymology.

shiro-ko

H2: 白子 an albino

shiru-ko

H2: 汁粉 a kind of sauce made of red-beans and sugar, eaten with rice-cake

so-ko

H2: 其処 that place, there, that

Kōjien and *Daijirin* give the kanji 〈其処〉 (and also 〈其所〉), but this word is typically written 〈そこ〉 today. The H2 describes /so+ko/ as a contraction of /sono tokoro/ その所 'that place', but see the explanation for *asu-ko* above for the etymology of /ko/.

Yanaïke (1991:70) suggests two other H2 headwords as possibilities here. One is /soko/ 底 'bottom', and the other is obsolete /soko/ 壘/塞 'fort, rampart'. Both are synchronically monomorphemic, and it seems unlikely that Lyman intended either of them.

tana-ko

H2: 店子 persons living in rented houses, a tenant

te-ko

H2: 木槌 a lever

Typically written 槌子 (*Kōjien, Daijirin*). *NKD* lists only /te+ko/ as a headword, although the entry gives /te+go/ as an alternative pronunciation for a different (obsolete) sense of the same lexeme ('helper, subordinate worker'). The *NKD* entry offers no etymology, but the kanji 手子 that were used for the now obsolete senses are etymologically transparent (cf. modern Tōkyō /te/ 手 'hand; help' and /ko/ 子 'child; worker'). The meaning 'lever' was originally figurative.

tera-ko-ya

H2: 寺子屋 a schoolhouse

tori-ko

H2: 俘 a prisoner of war, a captive

Typically written 虜 or 擒 (*Kōjien, Daijirin*). Although the single kanji obscures the etymology, this example clearly originated as a combination of the ancestors of /tori/ 取り 'taking' (cf. /tor-u/ 'to take') and /ko/ 子 'child; person'.

tsure-ko

H2: 連れ a stepchild, or a child by a former marriage, which the mother takes with her when she marries another husband

Typically written 連れ子 (*Kōjien, Daijirin*).*udon-ko*

H2: 麩粉 wheat flour

Typically written 饅頭粉 (*Kōjien, Daijirin*).*uji-ko*

H2: 氏子 the persons living in a place under the protection of an *Ubusuna*; the parishoners of a *Miya*

uro-ko

H2: 鱗 the scales of a fish or snake

The Early Middle Japanese word for 'scale' seems to have developed into the ancestor of modern Tōkyō /uroko/: [irokudu]>[iroku]>[iroko]>[uroko], and ^{EMJ}/irokudu/ may have been a compound of ^{EMJ}/iro/ 'color' and ^{EMJ}/kudu/ 'scrap' (Martin 1987:426). Despite its etymological irrelevance, Lyman may have folk-etymologized this example as containing a figurative use of /ko/ 子 'child', although this analysis leaves /uro/ as an opaque first element.

yak-ko

H2: 奴 a servant boy, a slave

The Old Japanese item corresponding to this example is the frozen phrase ^{OJ}/ya+tu+kwo/ consisting of ^{OJ}/ya/ 'house', a genitive particle ^{OJ}/tu/, and ^{OJ}/kwo/ 'child' (Martin 1987:571), and rendaku would not have been expected following the particle. In the modern contracted form /yaQko/, of course, /Q/ makes rendaku impossible (see §7.4.7), regardless of whether a speaker analyzes this example as /yaQ+ko/.

hiki-koto

H2: 引事 a quotation, citation

Typically written 〈引言〉 (*Kōjien*; not listed in *Daijirin*). *NKD* lists only /hiki+goto/, with rendaku, as a headword, but the entry gives /hiki+koto/ as an alternative pronunciation.

kata-koto

H2: 方言 provincialism, vulgar pronunciation

Typically written 〈片言〉 (*Kōjien*, *Daijirin*).

mi-koto

H2: ^[1] 尊 a respectful title affixed to the name of a *Kami*

This example is etymologically appropriate here. The corresponding Old Japanese word ^{OJ}/mi+koto/ combined the exalting prefix ^{OJ}/mi/ with ^{OJ}/koto/ 'fact, matter' (Martin 1987:478).

^[2] 命 a command of a *Kami* or the Mikado

Typically written 〈御言〉 (*Kōjien*, *Daijirin*). The corresponding Old Japanese word ^{OJ}/mi+koto/ combined the exalting prefix ^{OJ}/mi/ with ^{OJ}/koto/ 'words' (Martin 1987:478). The latter is etymologically identical to ^{OJ}/koto/ 'fact, matter' in the example just above (Martin 1987:459).

The prefix /mi/ generally blocks rendaku in the immediately following element (see the comments on *mi-hashī* above in this sub-section).

tawa-koto

H2: 戲言 foolishness, nonsense, absurdity

NKD lists only /tawa+goto/, with rendaku, as a headword, but the entry notes /tawa+koto/ as an older pronunciation. The first element is etymologically related to /tawake~ru/ 戯ける 'to act foolishly' (Martin 1987:544), in which /ke/ is etymologically a derivational suffix (i.e., a formant; see Martin 1987:766,792).

uwa-koto

H2: 譫語 the talk of one in delirium

Typically written (譫言) (*Kōjien*, *Daijirin*). *NKD* lists only /uwa+goto/, with *rendaku*, as a headword, but the entry gives /uwa+koto/ as an alternative pronunciation. The first element may be related to /ue/~ /uwa/ 上 ‘above, top’, which may also be the source of /uwa/ in /uwasa/ 噂 ‘rumor’ (Martin 1987:598).

wabi-koto

H2: 佗言 supplication or petition for mercy or forgiveness

NKD lists only /wabi+goto/, with *rendaku*, as a headword, but the entry notes /wabi+koto/ as an older pronunciation.

ai-kuchi

H2: 匕首 a short sword without a hilt; a dagger

NKD lists this item as a sub-entry (i.e., a figurative meaning) under /ai+kuči/ 合い口 ‘affinity’. The synonymous Sino-Japanese word /hi-šu/ 匕首 ‘dagger’ is the source of the etymologically and morphologically opaque kanji.

de-kuchi

H2: 出口 place of exit, the hole, orifice, nozzle, or door by which any thing passes out

NKD lists only /de+guči/, with *rendaku*, as a headword, but the entry gives /de+kuči/ as an alternative pronunciation.

ho-kuchi

H2: 火口 tinder

iri-kuchi

H2: 入口 the hole or place of entrance, entrance, door

NKD lists only /iri+guči/, with *rendaku*, as a headword, but the entry gives /iri+kuči/ as an alternative pronunciation.

karu-kuchi

H2: 軽口 fluent in talking, voluble, flippant

kata-kuchi

H2: 片口 one side of an argument, the statement of one party

mitsu-kuchi

H2: 缺唇 harelip

Typically written (三つ口) (*Kōjien*, *Daijirin*).

mochi-kuchi

H2: 持口 a place one is to superintend, keep, or defend; a post, station

muki-kuchi

H2: 向口 demand, request

ō-kuchi

H2: 大口 a wide kind of trowsers

The *NKD* entry for this example says that it is a clipping of /oH+kuči+bakama/ (cf. /hakama/ 袴 ‘pleated trousers’). The H3 definition begins with the basic meaning of /oH+kuči/ (“a large mouth; a wide kind of trowsers; larger items”).

ore-kuchi

H2: 折口 a death, or a funeral; used by persons who have a superstitious dread of using the plain word for death

sabake-kuchi

H2: the sale, demand

Typically written 𪛗𪛗 (𪛗𪛗) (*Kōjien*, *Daijirin*). *NKD* lists only /sabake+guči/, with *rendaku*, as a headword, but the entry gives /sabake+kuči/ as an alternative pronunciation.

? sode-kuchi

H2: 袖口 the end or hole of a sleeve, the cuff

NKD lists only /sode+guči/, with *rendaku*, as a headword and does not give /sode+kuči/ as an alternative pronunciation.

tobo-kuchi

H2: 戸外口 the entrance to a house, a door

Typically written 𪛗𪛗 (𪛗𪛗) (*Kōjien*, *Daijirin*). *NKD* lists only /tobo+guči/, with *rendaku*, as a headword, but the entry gives /tobo+kuči/ as an alternative pronunciation. Martin (1987) does not list this example, and the *NKD* entry for it does not suggest an etymology, but a connection to the obscure word /toboso/ 𪛗 ‘pivot; door’ seems likely.

ure-kuchi

H2: 售口 sale, demand

Typically written 𪛗𪛗 (𪛗𪛗) (*Kōjien*, *Daijirin*).

uri-kuchi

H2: 売口 an outlet for the sale of anything, demand

waru-kuchi

H2: 悪口 evil or contemptuous language, detraction, dirty or blackguard language

NKD lists only /waru+kuči/ as a headword, although the entry gives /waru+guči/ as an alternative pronunciation.

yatsu-kuchi

H2: a child's coat

Typically written 〈八つ口〉 (*Kōjien*, *Daijirin*).

yoi-kuchi

H2: not listed

Lyman presumably intended the word corresponding to modern Tōkyō /yoi+kuči/ 宵口 'just after sunset'. *NKD* lists only /yoi+kuči/ as a headword, although the entry gives /yoi+guči/ as an alternative pronunciation.

yomi-kuchi

H2: 読口 the place to commence reading

? *ashitaka-kumo*

H2: long-legged spider

NKD lists only /aši+daka+gumo/ 足高蜘蛛, with *rendaku* in the last element, as a headword. The entry gives /aši+taka+gumo/, with no *rendaku* in the second element, as an alternative pronunciation, but not /aši+taka+kumo/. This same example appears below as *ashi-taka-kumo*, grouped with other examples involving an element of the form /taka/.

mura-kumo

H2: 簇雲 clusters of clouds

Typically written 〈叢雲〉 (*Kōjien*, *Daijirin*).

shira-kumo

H2: 白雲 an eruption on the scalp of children; pityriasis (?)

Typically written 〈白癬〉 or 〈白禿瘡〉 (*Kōjien*, *Daijirin*). The *NKD* entry for this example does not give a definite etymology for the second element, but /kumo/ 'cloud' has been suggested, as implied by the kanji in the H2 entry, and even if this suggestion is incorrect, it is certainly a plausible folk etymology.

yami-kumo

H2: recklessly, indiscriminately, thoughtlessly

Typically written 〈闇雲〉 (*Kōjien*, *Daijirin*).

kami-kura

H2: 首座 the highest or chief seat

Typically written 〈上座〉 (*Kōjien*, *Daijirin*). Although the meaning 'seat' is obsolete, etymologically identical /kura/ 鞍 'saddle' (Martin 1987:464) is still in

common use. Late-19th-century speakers surely divided this example as Lyman's hyphen implies, whether or not they identified it with the word meaning 'saddle'.

kari-kura

H2: 狩倉 hunting ground

nama-kura

H2: 鈍刀 a bad tempered blade, a dull sword

Typically written 〈鈍ら〉 (*Kōjien*, *Daijirin*). The *NKD* entry for this example hyphenates it as Lyman did, but there is no etymology, and it is semantically opaque.

haya-kusa

H2: 丹毒 a kind of skin disease

NKD lists this item as a headword and gives the kanji 〈早草〉. The synonymous Sino-Japanese word /taN-doku/ 丹毒 is the source of the etymologically and morphologically opaque kanji in H2.

kara-kusa

H2: 唐艸 the ornamental figure of a vine, in cloth, pictures, carved metal or wood

Typically written 〈唐草〉 (*Kōjien*, *Daijirin*).

mizu-kusa

H2: *midzu-kusa* 水瘡 an exzematous eruption about the mouth of children

mi-kusa

H2: 水草 sea-weed; any grass growing in water

The first element of this example is unattested as an independent word but is etymologically related to the initial syllables in /mizu/ 水 'water' and /minato/ 港 'harbor'. Martin (1987:476) suggests that this /mi/ might have originated as a truncation of a prehistoric two-syllable noun ^{pre-OJ}/mina/ 'water', but the entry for ^{OJ}/mi/ in *Jōdai* identifies ^{OJ}/na/ as an adnominal particle (i.e., a copula).

omo-kusa

H2: 面瘡 an eruption on the face

saki-kusa

H2: 万年松 lycopodium, a kind of moss

Typically written 〈三枝〉 (*Kōjien*, *Daijirin*). This obsolete word is etymologically a combination of obsolete /saki/ 幸 'good luck' (cf. ^{OJ}/saki/) and /kusa/ 草 'grass' (cf. ^{OJ}/kusa/) (Martin 1987:516).

shichi-kusa

H2: articles that can be pawned

Typically written 〈質草〉 or 〈質種〉 (*Kōjien*, *Daijirin*). *NKD* lists only /šiči+gusa/, with *rendaku*, as a headword, but the entry gives /šiči+kusa/ as an alternative pronunciation.

some-kusa

H2: 染草 dye-stuff

to-kusa

H2: 木賊 equisetum, or scouring rush

Kōjien and *Daijirin* both give the alternate kanji representation 〈砥草〉, and the second element in this example is obviously /kusa/ 草 ‘grass’. Martin (1987:547) says the etymological first element could be /to/ 砥 ‘whetstone’ but could also be the root of an obsolete adjective meaning ‘sharp’, which has the classical conclusive form /to-ši/.

ume-kusa

H2: 埋草 any material used for filling up

yake-kusa

H2: 烧草 materials or matter for burning; anything to feed a fire

NKD lists this example as a headword, but the only citation is the entry in H1.

kuchi-kuse

H2: 口癖 a by-word, something which one is in the habit of saying; cant word

shi-kuse

H2: 仕癖 propensity to do, habit of doing, way of acting or speaking, habits, manners

NKD lists only /ši+kuse/ as a headword, although the entry gives /ši+guse/ as an alternative pronunciation. The first element is based on the verb /su-ru/ ‘to do’, despite the kanji 〈仕〉.

te-kuse

H2: 手癖 habit, or style of penmanship; also, a habit of pilfering

hana-kuso

H2: 鼻垢 the hard mucous which collects in the nose

Typically written 〈鼻糞〉 or 〈鼻屎〉 (*Kōjien*, *Daijirin*).

kani-kuso

H2: 胎屎 the meconium

Typically written (蟹屎) (*Kōjien*, *Daijirin*). This example actually is not listed as a headword in H2, but it appears as an alternative in the entry for the synonym *kani-baba*.

kana-kuso

H2: 鉄屑 metal cinders

Typically written (金屎) (*Kōjien*, *Daijirin*).

me-kuso

H2: 眵 gummy discharge from the eyes

Typically written (目糞) or (目屎) (*Kōjien*, *Daijirin*).

mimi-kuso

H2: 耳聾 ear-wax

Typically written (耳糞) (*Kōjien*, *Daijirin*).

mune-kuso

H2: the feelings, spirits, temper

Typically written (胸糞) (*Kōjien*, *Daijirin*). *NKD* also lists the alternative form /muna+kuso/ as a separate headword, but the definitions for this item appear under /mune+kuso/.

mushi-kuso

H2: 虫糞 insect dirt

? abumi-kuwa

H2: 鍤鋤 a kind of hoe

NKD lists only /abumi+guwa/ as a headword and does not give /abumi+kuwa/ as an alternative pronunciation, although the entry notes that *abumi-kuwa* appears in H2. Typically written (鍤鋤) (*Kōjien*, *Daijirin*).

kuro-kuwa

H2: 黒鍤 a common laborer, those only in government employ

This obsolete word was a compound with the literal meaning 'black hoe' used figuratively, and presumably it was semantically opaque to late-19th-century speakers.

aka-saka

H2: not listed

No headword of this form is listed in H3 either, but Lyman almost certainly intended the place name *Akasaka* /aka+saka/ 赤坂 '[literally] red slope'.

? ko-saka ~ ko-zaka

H2: not listed

As a common noun, *NKD* lists only /ko+zaka/ 小坂 ‘small slope’ as a headword and does not give /ko+saka/ as an alternative pronunciation. As a surname, however, *NKD* gives both /ko+zaka/ and /ko+saka/.

*kudari-saka*H2 [s.v. *saka*]: 下坂 the road down a mountain, descent

Typically written (下り坂) (*Kōjien*, *Daijirin*). *NKD* lists only /kudari+zaka/, with *rendaku*, as a headword, but the entry gives /kudari+saka/ as an alternative pronunciation.

*nobori-saka*H2 [s.v. *saka*]: 登坂 an ascent

Typically written (登り坂) or (上り坂) (*Kōjien*, *Daijirin*). *NKD* lists only /nobori+zaka/, with *rendaku*, as a headword, but the entry gives /nobori+saka/ as an alternative pronunciation.

tama-saka

H2: seldom, rare, occasional

Typically written (偶さか) or (適さか) (*Kōjien*, *Daijirin*). The first element is obviously related to /tama+tama/ たまたま ‘by chance’, which is listed above in sub-section 4(b), and /tama ni/ 偶に ‘occasionally’, but the second element is semantically opaque.

to-saka

H2: 鶏冠 a cock’s comb or crest

Etymologically, this example combines a truncation of the ancestor of /tori/ 鳥 ‘bird’ and obsolete /saka/ 冠 ‘crest’ (Martin 1987:551). The form /torisaka/ is also attested, but later than /tosaka/. Late-19th-century speakers almost certainly did not see /tosaka/ as a synchronic compound.

akari-saki

H2: 明前 before one’s light, in one’s light

Typically written (明り先) (*Kōjien*, *Daijirin*).*he-saki*

H2: 艦 the prow or bow of a ship

Typically written (舳先) (*Kōjien*, *Daijirin*).*hoko-saki*H2 [s.v. *hoko*]: 鉾鋒 the point of a spearTypically written (矛先) (*Kōjien*, *Daijirin*).

kuchi-saki

H2: 口鋒 the lips, in distinction from the heart

Typically written 〈口先〉 (*Kōjien*, *Daijirin*).

mi-saki

H2: 岬 a cape, point of land extending into the sea

Jōdai, *NKD*, and Martin (1987:480) all says that /mi/ is etymologically a prefix but do not specify its meaning. The two Old Japanese possibilities are the exalting prefix ^{OJ}/mi/ and the bound element ^{OJ}/mi/ 'water' (see the comments on *mi-kusa* above). The etymological second element is the ancestor of modern Tōkyō /saki/ 崎 'cape, promontory', which is seldom used as a word on its own but occurs as a second element in many place names. The single kanji 〈岬〉 obscures the etymology of /misaki/, and late-19th-century speakers may not have analyzed it.

muna-saki

H2: 胸先 the pit of the stomach

te-saki

H2: 手先 the end of the fingers; a secret policemen, a spy, and underling or agent

? toto-saki

H2: the bill or beak of a bird, – used by children

The word /toto/ (also /toQto/) is well known as baby talk for birds such as chickens or pigeons, but the combination /toto+saki/ is not listed in *NKD*.

uri-saki

H2: 売先 the buyer, or person to whom anything is sold

ya-saki

H2: 矢先 the point of an arrow

yō-saki

H2: 用先 the place where one has business or something to do

ari-sama

H2: 在様 the state, condition, circumstances, case

Typically written 〈有様〉 (*Kōjien*, *Daijirin*).

akara-sama ni

H2: 赤地 without concealment or disguise, explicitly, plainly, clearly

Typically written 〈あからさま〉 (*Kōjien*, *Daijirin*). This phrase is attested in Old Japanese, and Martin (1987:379) analyzes ^{OJ}/aka+ra/ as the adjectival root

^{OJ}/aka/ ‘red; bright’ plus the suffix ^{OJ}/ra/, which derived adjectival nouns. He identifies ^{OJ}/sama/ as a noun corresponding to modern Tōkyō /sama/ 様 ‘appearance’, and it is plausible to suppose that late-19th-century speakers analyzed /sama/ this way, even if /akara/ was obscure to them.

ashi-sama ni

H2: 悪様 in a bad manner

ika-sama

H2: 何様 how, in what way; but in coll. used in expressing surprise or assent to what another says

Typically written 〈如何様〉 (*Kōjien*, *Daijirin*).

midai-sama

H2: 御台様 the wife of the *Shōgun*

This suffix-like use of /sama/ as a respectful title attached to names and other nouns referring to people is highly productive in modern Tōkyō Japanese, and /sama/ never shows *rendaku* in such examples. Furthermore, this element is accentually neutral, that is, the combinations in which it occurs are not compound-like accentually (Kindaichi and Akinaga 2014:108).

mina-sama

H2: 皆様 all of you

This example is another instance of the N+/sama/ pattern (see the explanation for *midai-sama* just above).

nani-sama

H2: 何様 some how, some way or other

nē-sama

H2: coll. cont. of *ane-sama*, elder sister; used in familiar address to a girl whose name is not known; also a paper doll

Typically written 〈姉様〉 (*Kōjien*, *Daijirin*). Lyman had “ne-” here, with a short vowel, but this is clearly an error. He also listed *nē-san* separately (see below). This example is another instance of the N+/sama/ pattern (see the explanation for *midai-sama* above).

nī-sama

H2: not listed

The intended item must be the word corresponding to modern Tōkyō /niH+sama/ 兄様 ‘older brother’. Lyman had “ni-” here, with a short vowel, but this is clearly an error. He also listed *nī-san* separately (see below). This

example is another instance of the N+/sama/ pattern (see the explanation for *midai-sama* above).

noke-sama ni

H2: 仰様 face upwards

NKD lists only /noke+zama/, with *rendaku*, as a headword, but the entry gives /noke+sama/ as an alternative pronunciation. This example is obsolete, and so is the verb on which the first element is based (cf. ^{EMJ}/nok-u/ 'to put face up'; the adverbial phrase ^{EMJ}/noke ni/ 'facing upward' is also attested). The first element has been preserved, however, in modern *Tōkyō* /noke+zor-u/ 仰け反る 'to lean back'.

oku-sama

H2: 奥様 wife, – spoken only of a person of rank, or a noble

This example is another instance of the N+/sama/ pattern (see the explanation for *midai-sama* above), although /oku/ 奥 'interior' by itself is not used in this meaning.

saka-sama

H2: 逆 upside down, head foremost, in a contrary direction, topsy-turvy
Sometimes written (逆様) (*Kōjien*, *Daijirin*).

saki-sama

H2: 先様 the other or opposite party or person in any affair

This example is another instance of the N+/sama/ pattern (see the explanation for *midai-sama* above).

tono-sama

H2 [s.v. *tono*]: 殿様 the lord

This example is another instance of the N+/sama/ pattern (see the explanation for *midai-sama* above).

to-sama-kō-sama

H2: *tō-sama-kō-sama* this manner or that manner, perplexed, doubtful or uncertain state of mind, in a quandary

This same example appears above in section 4(d), grouped with coordinate compounds. Lyman had "too-koo-" here, and the headword in H2 also has a long first vowel, but the headword in *NKD* has a short vowel instead: /tosama+koHsama/. The absence of *rendaku* in each half (cf. /sama/ 様 'manner') makes it a relevant example here, but *NKD* gives /tozama+koHzama/ as an alternative pronunciation. For more details about this item, see the explanation above in sub-section 4(d).

toto-sama

H2 [s.v. *toto*]: father

Typically written (父様) (*Daijirin*; not listed in *Kōjien*). This example is another instance of the N+/sama/ pattern (see the explanation for *midai-sama* above).

yoko-sama

H2: 横様 crosswise, athwart, across, side-ways, transversely

NKD lists /yoko+sama/ as a headword but gives /yoko+zama/ as an alternative pronunciation.

nē-san

H2: not listed

The intended item must be the word corresponding to modern Tōkyō /neH+saN/ 姉さん ‘older sister’. Lyman had “nesan” here, with a short first vowel, but this is clearly an error. He also listed *nē-sama* separately (see above). The suffix /saN/, used as a respectful title attached to names and other nouns referring to people, is highly productive in modern Tōkyō Japanese, and /saN/ never shows *rendaku*. Etymologically, /saN/ is a reduced form of /sama/ used as a title (see the explanation for *midai-sama* above). Furthermore, like /sama/, this element is accentually neutral, that is, the combinations in which it occurs are not compound-like accentually (Kindaichi and Akinaga 2014:108).

nī-san

H2: *niisan* 兄様 coll. cont. of *ani-san*; elder brother – used in calling

Typically written (兄さん) (*Kōjien*, *Daijirin*). Lyman had “nisan” here, with a short first vowel, but this is clearly an error. He also listed *nī-sama* separately (see above). This example is another instance of the N+/saN/ pattern (see the explanation for *nē-san* just above).

o-bā-san

H2: *o-baa-san* 御婆様 an old woman, – used in respectfully addressing an old woman, or in speaking to others

Typically written (お婆さん) (*Daijirin*). This example is another instance of the N+/saN/ pattern (see the explanation for *nē-san* above).

o-kami-san

H2 [s.v. *kami*]: 御上 your wife, also a title used in addressing any married woman, = Mrs.

Often written (おかみさん) (*Daijirin*), although the kanji (上) is often used for /kami/ (*Kōjien*). This example is another instance of the N+/saN/ pattern (see the explanation for *nē-san* above).

o-tos-san

H2: 阿爺 (contraction of *o-toto-san*) com. coll. Father

Lyman actually had “ototsan” here, and the H2 romanization is ⟨ototsan⟩, but the katakana spelling in the H2 entry is ⟨オトツサン⟩, implying /otoQsaN/. In H3 the katakana spelling is the same, but the romanization is ⟨otottsan⟩. *NKD* lists both /otoQsaN/ おとっさん and /otoQcaN/ おとっつあん as headwords, but not /otocaN/. This example is another instance of the N+/saN/ pattern (see the explanation for *nē-san* above), but even if /saN/ were susceptible to rendaku, the immediately preceding /Q/ makes rendaku impossible (see §7.4.7).

? *hi-sao*

H2: 棚杖 a ramrod

NKD lists only /hi+zao/ as a headword and does not give /hi+sao/ as an alternative pronunciation, although the entry notes that *hi-sao* appears in H1.

kara-sao

H2: 連枷 a flail

NKD lists only /kara+zao/, with rendaku, as a headword, but the entry gives /kara+sao/ as an alternative pronunciation. According to Martin (1987:234), the second element is etymologically /sao/ 竿 ‘pole’, but the first element could be either /kara/ 殻 ‘husk’ or /kara/ 唐 ‘foreign’. *Daijirin* gives the alternative kanji representatons ⟨殻竿⟩ and ⟨唐竿⟩.

ima-sara

H2: 今更 now at last, now after so long a time

nao-sara

H2: 尚曷 still more, more over, again

Typically written ⟨尚更⟩ (*Kōjien*, *Daijirin*).

furū-sato

H2: 古郷 native place, place of one's birth

Typically written ⟨故郷⟩ or ⟨古里⟩ (*Kōjien*, *Daijirin*). The latter is etymologically/morphologically transparent. The synonymous Sino-Japanese word /ko-kyoH/ 故郷 is the source of the former.

tori-sata

H2: 取沙汰 current report

NKD lists only /tori+za-ta/, with rendaku, as a headword, but the entry gives /tori+sa-ta/ as an older pronunciation. Lyman had “tori-” here, implying /tori+sato/, but this must be an error. No such headword appears in H2 or *NKD*. Since /sa-ta/ 沙汰 ‘notice, communication’ is Sino-Japanese, this example does not belong here, and Lyman probably mistranscribed it in the process of collecting his

examples and then mistakenly analyzed it as ending in /sato/. H2 also lists /bu+sa·ta/ 無沙汰 ‘failure to keep in touch’ as a headword, and Lyman did not cite it in this section, probably because he knew that the second element was Sino-Japanese. The form with *rendaku* would be appropriate in sub-section 2(b) above, but the H2 entry did not give /tori+za·ta/ as an alternative pronunciation.

asa-se

H2 [s.v. *se*]: 浅瀬 a shallow stream

fuka-se

H2 [s.v. *se*]: 深瀬 a deep channel

hada-se

H2: 驢 bare-back

Typically written 肌背 (*Kōjien*; not listed in *Daijirin*). The H2 kanji (Unicode 9A4F) is not included in most Japanese fonts.

kugu-se

H2: 偻僂 humpbacked

This example is obsolete. Etymologically, the second element is /se/ 背 ‘back’, but the first element is less obvious (Martin 1987:462). *Kōjien* gives the alternative kanji representation 屈背, and according to the *NKD* entry, /kugu/ is probably the same etymological root that appears in obsolete /kugumar-u/ 屈まる ‘to stoop’ and perhaps in frequently used /kugur-u/ 潜る ‘to stoop and pass under’. Both these verbs are listed as headwords in H2, but even if late-19th-century speakers found /kugu/ obscure, it should have been fairly easy to analyze this example as a compound.

saka-shima

H2: 倒 upside down, head-foremost, in a contrary direction

Typically written 逆しま (*Kōjien*, *Daijirin*). Martin (1987:524) says the second element originally meant ‘direction’ (cf. *yoko-shima* below) and overlapped semantically with the ancestor of modern Tōkyō /sama/ 様 ‘manner’, which could also mean ‘direction’. This example is synonymous with /saka+sama/ 逆さま, which also appears as a headword in H2 and is listed above in this sub-section. OJ forms corresponding to both examples are attested (^{OJ}/saka+sima/, ^{OJ}/saka+sama/), which means that the likely etymological connection between the two second elements is lost in prehistory.

te-shima-ishi

H2: 手島石 a kind of soft stone used in building

According to the entry in *NKD*, the island of Teshima 豊島 (also written (手島)) in Kagawa Prefecture is the source of the stone in question.

yoko-shima

H2: 邪 wicked, vicious, malignant, depraved, corrupt

Kōjien and *Daijirin* both give the alternative representation (横しま), which reflects the etymological elements of this adjectival noun: /yoko/ 横 'side' and /šima/ 'direction' (see the comments on *saka-shima* above). The corresponding OJ word ^{OJ}/yoko+sima/ was still used literally to mean 'sideways, horizontal', but the figurative meaning had already developed (see the *Jōdai* entry), and only the latter survives. The etymology is further obscured by the fact that this example is often written entirely in hiragana or with a single kanji ((邪) or (邪ま)). Consequently, this example would have been harder for late-19th-century speakers to analyze than *saka-shima* above.

chi-shio

H2: 血汐 blood

ha-shio

H2: the tartar that collects about the teeth

NKD lists only /ha+šio/ 齒塩, with *rendaku*, as a headword, but the entry gives /ha+šio/ as an alternative pronunciation.

hi-shio

H2: *hi-shiwo* 干汐 the ebb-tide

Typically written (干潮) (*Kōjien*, *Daijirin*).

hiki-shio

H2: *hiki-shiwo* 引汐 ebb-tide

michi-shio

H2: *michi-shiwo* 満潮 flood tide

sashi-shio

H2: *sashi-shiwo* 刺潮 the rising tide

Typically written (差し潮) (*Kōjien*, *Daijirin*).

kawa-shiri

H2: 川尻 the lower part or mouth of a river

NKD lists only /kawa+širi/, with *rendaku*, as a headword, but the entry gives /kawa+širi/ as an alternative pronunciation.

mayu-shiri

H2: 眉尾 the outer end of the eyebrow

Typically written (眉尻) (*Kōjien*, *Daijirin*). *NKD* lists only /mayu+širi/, with *rendaku*, as a headword, but the entry gives /mayu+širi/ as an alternative pronunciation.

kawa-shimo

H2: 川下 down the river, the lower part of the river toward its mouth

kaza-shimo

H2: 風下 leeward, in the direction to which the wind blows

kata-shiro

H2: 尸 an effigy, image, or likeness

Typically written (形代) (*Kōjien*, *Daijirin*).

nawa-shiro

H2: 苗代 a small piece of ground in which rice sprouts are grown for transplanting

toji-shiro

H2: 緘代 that part of the page at the back of a book left blank for binding

Typically written (綴じ代) (*Kōjien*, *Daijirin*).

uri-shiro

H2: 売代 the price or money received in exchange for goods

chi-shiru

H2: 乳汁 milk

hana-shiru

H2: 鼻涕 thin mucous from the nose

Typically written (鼻汁) (*Kōjien*, *Daijirin*). *NKD* lists /hana+širu/ as a headword but gives /hana+širu/ as an alternative pronunciation.

kaze-shita

H2: 風下 leeward

NKD also lists the alternative form /kaza+šita/ as a separate headword, and the definitions for this item appear under /kaza+šita/.

me-shita

H2: 卑行 inferiors, persons of low rank

Typically written (目下) (*Kōjien*, *Daijirin*).

obi-shita

H2: 帯下 the part of the body under the belt, the waist

ami-so

H2: 網苧 the cord of which nets are made

Typically written (網麻) (*Kōjien*, *Daijirin*). This example is obsolete. Etymologically, the second element is the bound root /so/ 麻 'hemp' (Martin 1987:529), and even its Old Japanese counterpart ^{OJ}/swo/ is not attested as an independent word. The second kanji in the H2 entry is an alternative kanji for this second element, but it is also used as an alternative kanji for /o/ 麻 'hemp (fiber)', which is probably etymologically identical to /o/ 緒 'cord' (Martin 1987:503). H2 lists /so/ as a headword, defined as "the strings used as a warp for floor matting," and gives *tatami so* as an example. This example is presumably a compound, despite the absence of a hyphen, but no headword of the form /tatami+so/ is listed in *NKD*. The kanji in the H2 entry for /so/ as a headword is (苧), but it was corrected to (苧) in H3.

nanori-so

H2: 神馬藻 a kind of seaweed

Kōjien also gives the alternative kanji (莫告藻). *Daijirin* gives only hiragana: (なのりそ). Martin (1987:590) says that /so/ might be etymologically related to Sino-Japanese /soH/ 藻 'seaweed', as the kanji suggests. If so, this example does not belong in this sub-section, but it does not belong in sub-section 2(b) above either, since Lyman listed only examples with *rendaku* there. The first element in this example is itself a compound, based etymologically on a noun (cf. ^{OJ}/na/ 'name') and an obsolete verb (cf. ^{OJ}/nor-u/ 'to declare'). The modern Tōkyō verb /nor-u/ 乗る 'to board' seems to be etymologically different (*Jōdai*; Martin 1987:737), but the second elements of modern Tōkyō /na+nor-u/ 名乗る 'to give one's name' (N+V=V; cf. ^{OJ}/na+nor-u/) and /na+nori/ 名乗り 'giving one's name' (N+V=N) have been folk etymologized. In any case, /na+nori/ seems to have been semantically opaque even in OJ.

ao-ta

H2: 青田 the green paddy-fields; a dead-head, one who enters theatres and shows without paying

ara-ta

H2: 新田 new made fields

are-ta

H2: 荒田 waste or uncultivated rice fields; wild meadow land

fuke-ta

H2: 深田 marshy, swampy land, rice-fields having an excess of water

NKD lists only /fuke+da/, with *rendaku*, as a headword, but the entry gives /fuke+ta/ as an alternative pronunciation.

kawa-ta

H2: 屠兒 a tanner, leather-dresser

This obsolete example is not listed in *Kōjien* or *Daijirin*, but the *NKD* entry gives the kanji as 皮田 or 革田). It was presumably pejorative in the late 19th century. There is no certain etymology for /ta/ in the *NKD* entry, but the first element is obviously /kawa/ 皮/革 ‘hide; leather’, so this item was easily analyzable for a speaker who knew it. H2 gives obsolete /eta/ 穢多 as a synonym, and this word denoted the outcaste group known today as /bu-raku+miN/ 部落民 ‘[literally] hamlet people’. The *NKD* entry for /eta/ says that the kanji 穢多 are *ateji*, but they probably reflect a folk etymology (cf. Sino-Japanese /e/ ‘filth’, /ta/ ‘large amount’). There is a comma between the two kanji in the H2 entry, but this is an error. It was corrected in H3.

mizu-ta

H2: *midzu-ta* 水田 rice-fields which are always wet a boggy, and which cannot be drained

ko-tachi

H2: 兒等 children

Typically written 子達 (*Daijirin*; not listed in *Kōjien*). The second element is a productive suffix-like “collectivizer” (Martin 1975:143–151) in modern Tōkyō Japanese, and it never has *rendaku* in this pattern. The corresponding OJ item (^{OJ}/tati/) was also used this way, but some combinations have been lexicalized with *rendaku*, as in the high-frequency word /tomo+dači/ 友達 ‘friend’ (which is no longer collective) and in the historical term /kiN+dači/ 公達 ‘scions of the nobility’ (in which the first element is etymologically a contraction of /kimi/ 君 ‘lord’). Martin (1987:543) suggests that /tači/ is etymologically the adverbial form of /tac-u/ 立つ ‘to stand’. This deverbal noun is not attested as an independent word with the meaning ‘stand’, but it occurs as the second element in /ko+dači/ 木立ち ‘stand of trees’ (cf. /ki/~ko/ ‘tree’), which appear as a headword in H2. The kanji 達 is *ateji*.

kodomo-tachi

H2 [s.v. *tachi*]: 子供等 children

Typically written 子供達 (*Kōjien*; not listed in *Daijirin*). This example is another instance of the N+/tači/ pattern (see the explanation for *ko-tachi* just above).

[[*kunitoko-tachi*]]

This item is a duplication. The same example appears above in sub-section 4(a). As noted there, this item seems to be an error.

? *nan-tachi*

H2: 汝等 you, plur.

This example is obsolete. *NKD* lists only /naN+dači/ as a headword and does not give /naN+tači/ as an alternative pronunciation. The first element is etymologically a contraction corresponding to ^{OJ}/na+muti/, which consisted of a second-person pronoun followed by an honorific title. The collective form listed as a headword in *Jōdai* is contracted to ^{OJ}/namu+tati/, and it was later contracted further to ^{EMJ}/naN+dati/ (with the apparent rendaku due to postnasal voicing; see §7.3.5). On the other hand, the form corresponding to ^{OJ}/na+muti/ later contracted to ^{EMJ}/naNdi/, and it survives in modern Tōkyō Japanese as /naNji/ 汝 'you' (an archaism that is listed even in small dictionaries).

omae-tachi

H2 [s.v. *tachi*]: 御前等 *omae-tachi* you

Both *Kōjien* and *Daijirin* give the kanji (御前達), although this word is most likely to be written today as (お前たち). This example is another instance of the N+/tači/ pattern (see the explanation for *ko-tachi* above).

yakunin-tachi

H2 [s.v. *tachi*]: 役人等 officers

This example is not listed in modern dictionaries (*Kōjien*, *Daijirin*, *NKD*), but it is obviously the suffix /tači/ combined with a base corresponding to modern Tōkyō /yaku-niN/ 役人 'officer, public official' (see the explanation for *ko-tachi* above).

ara-taka

H2: 新鷹 an untaught falcon

kuma-taka

H2: 鵬 a kind of falcon, or black eagle

Typically written (熊鷹) (*Kōjien*, *Daijirin*).

? *ashi-taka-kumo*

H2: long-legged spider

This same example appears above as *ashitaka-kumo*, grouped with other examples involving an element of the form /kumo/. *NKD* lists only /aši+daka+kumo/ 足高蜘蛛 as a headword, but the entry gives /aši+taka+gumo/ (not /aši+taka+kumo/) as an alternative pronunciation. The absence of rendaku in the second element of /aši+taka+gumo/ makes it a relevant example here.

ari-take ~ ari-dake

H2: 有丈 all there is

H2 lists both forms as headwords, with the definition under *ari-dake*. The usual form in modern Tōkyō is /ariQtake/ 有りっ丈.

hana-take

H2: 鼻茸 a nasal polypus

hatsu-take ~ hatsu-dake

H2: 初茸 a kind of edible mushroom

NKD lists /hacu+take/ as a headword, although it gives /hacu+dake/ and /haQ+take/ as alternative pronunciations. H2 lists the *hatsu-take* and *hatsu-dake* as separate headwords, defined identically.

iwa-take

H2: 岩茸 a kind of mushroom that grows on rocks

kawa-take

H2: 河竹 a prostitute, harlot

This compound is listed in some modern dictionaries with its literal meaning ‘riverside bamboo’, but the figurative meaning given in H2 seems to be obsolete. It would have been easy to analyze for late-19th-century speakers but semantically opaque in this figurative meaning.

kure-take

H2: 呉竹 a kind of bamboo

matsu-take ~ matsu-dake

H2: 松茸 a kind of edible mushroom

Typically written 〈松茸〉 (*Kōjien*, *Daijirin*). H2 lists only *matsu-take* as a headword, and the entry does not give *matsu-dake* as an alternative. *NKD* lists /macu+take/ as a headword but gives /macu+dake/ as an alternative pronunciation.

mimi-take

H2: 木耳 a mushroom which grows from the trunk of a dead tree

The *NKD* entry gives the etymologically/morphologically transparent kanji 〈耳茸〉 for this word. The synonymous word in common use in modern Tōkyō, /ki+kurage/ (etymologically a compound of /ki/ 木 ‘tree’ and /kurage/ くらげ ‘jellyfish’) is typically written 〈木耳〉 because the Chinese word for this fungus is written with these characters (cf. modern Mandarin *mùěr* 木耳 ‘[literally] wood ear’).

shī-take

H2: *shii-take* 椎茸 a kind of dried mushroom

Modern Tōkyō /šiH/ 椎 denotes a kind of evergreen tree called a chinquapin (genus *Castanopsis*).

ara-tama

H2: 璞 a rough or unpolished gem

Kōjien and *Daijirin* both give the etymologically and morphologically transparent kanji (粗玉) as one alternative way of writing this word (cf. modern Tōkyō /ara-i/ 粗い 'rough', /tama/ 玉/珠 'gem').

kin-tama

H2: 辜丸 testicles

Typically written (金玉) (*Kōjien*, *Daijirin*).

kuro-tama

H2: 睛 the iris and pupil of the eye

Typically written (黒玉) (*Kōjien*, *Daijirin*). *NKD* lists only /kuro+dama/, with *rendaku*, as a headword, but the entry gives /kuro+tama/ as an alternative pronunciation.

kubi-tama

H2: 首環 a collar for the neck

Typically written (首玉) or (頸玉) (*Kōjien*, *Daijirin*).

mizu-tama

H2: midzu-tama 水晶 crystal, or quartz; also, drops of water or spray

hakobi-te

H2: 運夫 a porter, carrier, cooly

Lyman had “kakobi-TE” here, but this is clearly an error. Although /hakobi+te/ is not listed in *Kōjien* or *Daijirin*, the *NKD* entry has the etymologically and morphologically transparent kanji (運び手). Attaching /te/ 手 ‘hand’ with the figurative meaning ‘person’ to a verb base is a highly productive pattern in modern Tōkyō Japanese, and /te/ never has *rendaku* in the resulting V+N=N compounds.

hama-te

H2: 浜手 near the sea beach

hiki-te

H2: 引手 a knob, a catch in a screen to open and shut it by

? hineri-te

H2 [s.v. *hineri*]: 捻手 one who uses difficult language

This example also appears in H3, but no headword of the form /*hinerite*/ is listed in *NKD*.

hon-te

H2: 本手 an honest or true grip in wrestling . . .

? ho-te

H2: 本手 an honest or true grip in wrestling . . .

This item appears as an alternative under the H2 headword *hon-te*, the immediately preceding item on Lyman's list, but /*ho+te*/ is not listed as a headword in *NKD* or as an alternative pronunciation in the *NKD* entry for /*hoN+te*/.

i-te

H2: 射手 an archer, bowman

This example is another instance of /*te*/ meaning 'person' added to a verb base (see the explanation for *hakobi-te* above).

kai-te

H2: 買手 a buyer, customer

This example is another instance of /*te*/ meaning 'person' added to a verb base (see the explanation for *hakobi-te* above).

karame-te

H2: 搦手 the back gate of a castle

According to the *NKD* entry, the meaning in the H2 entry is a figurative use of the literal meaning 'arresting official'. Both meanings are still current in modern Tōkyō. The first element is clearly related to the verb /*karame-ru*/ 搦める 'to bind; to arrest', as the first kanji in the H2 entry implies. Lyman had "kara-me-" here, implying that /*me*/ realizes a morpheme, but it is not clear what he might have had in mind. Martin (1987:792) treats this /*me*/ etymologically as a formant (i.e., derivational suffix). Only /*karame+te*/ appears as a headword in *NKD*, although the entry mentions /*karame+de*/ as an older pronunciation.

kara-te

H2: empty-handed

Typically written 〈空手〉 (*Kōjien*, *Daijirin*).

kata-te

H2: 双手 one hand, a single hand

Typically written 〈片手〉 (*Kōjien*, *Daijirin*).

kawariban-te

H2: an alternate

This item is listed in *NKD* as a headword, written (代わり番手), but the only citation is from H2.

kiri-te

H2: 切手 the slayer, killer, murderer

This example is another instance of /te/ meaning 'person' added to a verb base (see the explanation for *hakobi-te* above).

kit-te

H2: 切手 a passport, a pass, a ticket, a certificate

This example is not really relevant here because the /Q/ in /kiQ+te/ makes rendaku impossible (see §7.4.7). The change from C/i/ to /Q/ just before the primary boundary in V+V=V compounds is a well-known historical change that has happened sporadically (Martin 1975:400; Vance 2002c), and it has also affected a few V+N=N compounds like this example (/kiri/>/kiQ/ in this case). See the explanation for *kit-tatsu* in sub-section 4(a) above.

ko-te

H2: ^[1] 小手 defensive armor for the arm and hand; a bracelet

It is clear from the *NKD* entry for this example that it originated as a straightforward instance of metonymy (cf. /ko+te/ 'forearm', which combines bound /ko/ 小 'small' and /te/ 手 'arm; hand').

^[2] 鋤 a trowel, a smoothing iron

The *NKD* entry for this example cites but does not endorse two etymological proposals, both of which identify the second syllable with /te/ 手 'arm; hand', and it is very likely that Lyman would have identified the second syllable this way.

me-te

H2: 右手 the right-hand

This example is archaic but not obsolete. The first element is etymologically an obsolete noun meaning 'horse' (see the *NKD* entries for /me+te/ and /me/), as the alternative kanji representation (馬手) (*Kōjien*, *Daijirin*) implies. The meaning is based on the fact that reins were typically held in the right hand. Even if the first element was semantically opaque to late-19th-century speakers, it should have been easy for them to analyze the second element as /te/ 手 'hand'.

naka-te

H2: 中稻 middling rice, that ripens neither early or late . . .

As explained in the *Jōdai* entry for ^{OJ}/te/ used as a “suffix” (*setsubi-go* 接尾語), it was ^{OJ}/te/ ‘hand’ used figuratively to mean ‘stage; type’ in the OJ counterpart of this example (^{OJ}/naka+te/).

nawa-te

H2: 躡 a road through rice-fields

The *NKD* entry for this example treats it as a derived meaning of a compound that originally meant ‘rope hand-line’ (cf. modern Tōkyō /nawa/ 縄 ‘rope’, /te/ 手 ‘hand’). Martin (1987:494) gives this etymology, although he tentatively suggests another possibility. Given the single kanji and the fact that literal meaning was obsolete, it seems unlikely that late-19th-century speakers would have seen this example as a compound, and we have no way of knowing whether Lyman identified /te/ etymologically with the word for ‘hand’.

oi-te

H2: ^[1] 追風 a fair wind

The *NKD* entry for bound /te/ 風 ‘wind’ cites this example as an instance (cf. /o-u/ 追う ‘to follow’).

^[2] 追手 same as *otte*, a pursuer

This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

Yanaike (1991:69) notes that the two gerunds (/oi-te/ 於いて ‘being located’ and etymologically identical (/oi-te/ 置いて ‘putting’) also appear as headwords in H2, but it seems unlikely that Lyman would have had these in mind.

oku-te

H2: 晩稻 late rice

As explained in the *Jōdai* entry for ^{OJ}/te/ used as a “suffix” (*setsubi-go* 接尾語), it was ^{OJ}/te/ ‘hand’ used figuratively to mean ‘stage; type’ in the OJ counterpart of this example (^{OJ}/oku+te/). Martin (1987:505) identifies the first element with modern Tōkyō /oku/ 奥 ‘interior’, as the alternative kanji representation (奥手) (*Kōjien*, *Daijirin*) implies.

ō-te

H2: ^[1] 王手 checking the king in the game of chess

^[2] 追手 the front gate of a castle

This obsolete word and the synonymous word written 大手 (*Kōjien*, *Daijirin*) are homophonous (/oH+te/) in modern Tōkyō Japanese, but their different kana spellings ((おおて) for 大手 vs. ((おうて) for 追手) require separate entries in

dictionaries. The earliest attestations in *NKD* are 13th century for the former and 14th century for the latter, so it appears that this example originated as a figurative meaning for a compound that literally meant 'large hand' (Martin 1987:510), but there does not seem to be a consensus about the rationale for this semantic change. Perhaps /oHte/ 追手 originated as a folk etymology based on the notion that the front gate of a castle was the exit for pursuers (see *oi-te*^[2] above). If this suggestion is correct, we can further surmise that the ancestor of /oHte/ 大手 was already semantically opaque by the 14th century.

saka-te

H2: 酒錢 money for buying *sake*, drink money
Typically written 〈酒手〉 (*Kōjien*, *Daijirin*).

saki-te

H2: 先手 the one who goes in advance, the advance guard, or van of an army

This example is an instance of /te/ meaning 'person' (see the explanation for *hakobi-te* above), but the first element is not a verb base in this case.

sawa-te

H2: 沢手 damaged, or stained with water

This obsolete example should have been easy for late-19th-century speakers to analyze as a compound of /sawa/ 沢 'swamp' and /te/ 手 'hand', although it was less than transparent semantically.

sen-te

H2: 先手 the person who comes first, or has the first turn, or comes before another

This example is an instance of /te/ meaning 'person' (see the explanation for *hakobi-te* above), but the first element is not a verb base in this case.

shimo-te

H2: 下手 the lower part of a town, river, etc.

shita-te

H2: 下手 under the control of, or subject to another

shi-te

H2: ^[1] the principal character in a drama or play . . .

Typically written 〈シテ〉 (*Kōjien*, *Daijirin*).

^[2] 為手 the doer, maker

Typically written 〈仕手〉 or 〈為手〉 (*Kōjien*, *Daijirin*). These two H2 headwords are etymologically the same and are listed as separate definitions under

same headword in *Kōjien* and *Daijirin*. This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

sho-te

H2: 初手 the first, beginning, commencement

tori-te

H2: 捕手 an officer who arrests offenders, a policeman

This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

tsukai-te

H2: 使手 a user, an employee

This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

tsuri-te

H2: 釣手 a cord, or rope by which anything is suspended

The first kanji in the H2 entry is actually (釣), but this is a misprint. It remains uncorrected in H3.

uri-te

H2: 売手 the seller

This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

uwa-te

H2: 上手 the best hand in doing, making, or writing; up the river

yaki-te

H2: the person who bakes; a jealous or envious person

Typically written (焼き手) (*Kōjien*; not listed in *Daijirin*). This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

yari-te

H2: 遣手 the sender, or giver; the female keeper of a brothel

This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

yose-te

H2: 寄手 the attacking force, storming party

This example is another instance of /te/ meaning ‘person’ added to a verb base (see the explanation for *hakobi-te* above).

ao-to

H2: 青砥 a kind of green stone, used for whetstones

Although /to/ 砥 ‘whetstone’ as a word on its own is very infrequent in modern Tōkyō Japanese, the compound /to+iši/ 砥石 ‘whetstone’ (cf. /iši/ ‘stone’) is relatively common. Both *to* and *toishi* appear as headwords in H2, and it should have been easy for late-19th-century speakers to analyze this example in accordance with the etymology.

e-to

H2: *ye-to* 甲乙 the ten stems, used in naming years, days, &c.

Typically written 十枝 (*Kōjien*, *Daijirin*). The *NKD* entry and Martin (1987:392) both say that this example originated as a coordinate compound of two obsolete nouns. No corresponding compound is attested in OJ, but the two elements are ^{OJ}/ye/ ‘older person, older sibling’, ^{OJ}/oto/ ‘younger person, younger sibling’. Since the second element originally began with a vowel, it was not susceptible to *rendaku*. In any case, since this example is clearly not a synchronic compound, Lyman must have folk-etymologized it in some way. If he had seen it as a coordinate compound, it would belong in sub-section 4(d) above.

mune-to

H2: 宗徒 the principal, or chief among vassals

According to the *NKD* entry for this obsolete example, it is etymologically identical to the adverbial phrase /mune to/ 宗と ‘mainly’, and the kanji 徒 is *ateji*. If Lyman took the second element to be Sino-Japanese /to/ 徒 ‘group; fellow’, he should not have listed it in this sub-section, and since it does not have *rendaku*, he would not have listed it above in sub-section 2(b) either.

kana-toko

H2: 鉄床 an anvil

niwa-toko

H2: 接骨木 the *Sambucus ebulooides*

The H2 entry actually has 接木骨, with the last two kanji reversed, and this error remains uncorrected in H3. Modern sources give ‘Japanese red elder’ as an English equivalent and *Sambucus sieboldiana* as the scientific name for this bush. *Kōjien* and *Daijirin* both give the alternative kanji representation 庭常,

which suggests that /toko/ is etymologically related to the bound first element in /toko+nacu/ 常葉 ‘perpetual summer’ (cf. /nacu/ ‘summer’) and /toko+yo/ 常世 ‘eternity’ (cf. /yo/ ‘world’), the second of which appears as a headword in H2. Since this /toko/ is not attested as a second element in any other word, however, perhaps the second element of /niwa+toko/ originated as a clipping of /toko+wa/ 常葉 ‘evergreen leaf’, which is now obsolete. Etymological speculation aside, late-19th-century speakers might have analyzed /niwa+toko/ as containing /niwa/ 庭 ‘garden’ even if /toko/ was obscure.

ko-tori

H2: 小鳥 a small bird

niwa-tori

H2: 鶏 the domestic fowl, chicken

Despite the single kanji, this example is etymologically an obvious combination of elements corresponding to modern Tōkyō /niwa/ 庭 ‘garden’ and /tori/ 鳥 ‘bird’. Nevertheless, ordinary speakers today do not see it as a compound. I have been told even by professional linguists who are native speakers of Japanese that they do not intuitively analyze /niwatori/ into two elements. Thus, the caution expressed above in §A.1 is necessary.

ō-tori

H2: not listed

No headword of this form appears in H3 either, but Lyman almost certainly intended the word corresponding to modern Tōkyō /oH+tori/ 大鳥 ‘large bird’. Etymologically identical /oH+tori/ 鳳 ‘phoenix’ may be more familiar to most speakers, since it has been used in sumō wrestler names.

ma-tsuchi

H2: 真土 loam, good soil

masa-tsuchi

H2: 正土 soil that has not yet been worked, virgin-soil

neba-tsuchi

H2: 粘土 sticky earth, clay

yase-tsuchi

H2: same as *yase-chi*: 瘠地 poor or sterile soil
Typically written 瘦せ土 (*Kōjien*, *Daijirin*).

mu-tsuki

H2: ^[1] 正月 the first month

Typically written 〈睦月〉 (*Kōjien*, *Daijirin*). The second element is transparently /cuki/ 月 ‘moon; month’, but the first element is opaque. The kanji 〈睦〉 suggests an etymological connection to the OJ bound element ^{OJ}/mutu/ ‘harmonious, affectionate’, which corresponds to the first element in modern Tōkyō /mucu+goto/ 睦言 ‘lover talk’. The *NKD* entry for /mu+cuki/ lists this and nine other etymological proposals, none of which it endorses. It seems more likely that 〈睦〉 is just an *ateji*.

^[2] a diaper worn by infants

Sometimes written 〈襁褓〉 (*Kōjien*, *Daijirin*). The *NKD* entry for this example and Martin (1987:489) agree that its etymology is uncertain. It seems unlikely that Lyman really had this example in mind. If he did, a verb source for the second element is semantically plausible (cf. /cuk-u/ 付く ‘to become attached’), but Lyman listed compounds with deverbal second elements in section 4(a) above.

^[3] 六月 six months

This example is obsolete, but it would have been semantically transparent to a late-19th-century speaker.

shimo-tsuki

H2: 十一月 the eleventh month

Typically written 〈霜月〉 (*Kōjien*, *Daijirin*).

sa-tsuki

H2: 五月 the fifth month

This example is easy to analyze as containing /cuki/ 月 ‘month’, but /sa/ is obscure to modern Tōkyō speakers, in part because it is written with 〈五〉 or sometimes with obscure 〈皐〉, both of which are etymologically irrelevant. The source of this first element is bound /sa/ ‘early’ (Martin 1987:515), which is also preserved in /sa+nae/ 早苗 ‘rice sprout’ (cf. /nae/ ‘seedling’).

? kiba-tsutsu

H2 [s.v. *tsutsu*]: 騎馬筒 a carbine

H2 has just “*Kiba* –” in the entry for *tsutsu*, and Lyman inferred that the intended item was *kiba-tsutsu*, but *NKD* lists only /kiba+zucu/ as a headword and does not give /kiba+cucu/ as an alternative pronunciation.

? ko-tsutsu

H2 [s.v. *tsutsu*]: 小筒 a musket

H2 has just “*Ko* –” in the entry for *tsutsu*, and Lyman inferred that the intended item was *kiba-tsutsu*, but *NKD* lists only /ko+zucu/ as a headword and does not give /ko+cucu/ as an alternative pronunciation.

? *motogome-tsutsu*

H2 [s.v. *tsutsu*]: a breech-loader

H2 has just “*Motogome* –” in the entry for *tsutsu*, and Lyman inferred that the intended item was *motogome-tsutsu*, but *NKD* lists only /motogome+zucu/ as a headword and does not give /motogome+cucu/ as an alternative pronunciation. The first element is the N+V=N compound /moto+gome/ 元込め ‘breech-loading’, which has *rendaku* (cf. /moto/ ‘source’, /kome-ru/ ‘to put in’).

? *o-tsutsu*

H2: 尾筒 the bag for a horse’s tail

NKD lists only /o+zucu/ as a headword and does not give /o+cucu/ as an alternative pronunciation.

? *ō-tsutsu*

H2 [s.v. *tsutsu*]: 大筒 a cannon

H2 has just “*Ō* –” in the entry for *tsutsu*, and Lyman inferred that the intended item was *ō-tsutsu*, but H2 lists *ō-dzutsu* as a headword. *NKD* lists only /oH+zucu/ as a headword and does not give /oH+cucu/ as an alternative pronunciation.

? *tan-tsutsu*

H2 [s.v. *tsutsu*]: pistol

H2 has just “*Tan* –” in the entry for *tsutsu*, and Lyman inferred that the intended item was *tan-tsutsu*, but *NKD* lists only /taN+zucu/ as a headword and does not give /taN+cucu/ as an alternative pronunciation. *Kōjien* and *Daijirin* both list /taN+zucu/ as a headword, typically written (短筒).

han-shita

H2: 版下 the copy used in cutting blocks

han-toki

H2: not listed

No headword of this form is listed in H3 either, but Lyman almost certainly intended the word corresponding to modern *Tōkyō* /haN+toki/ 半時 ‘half a traditional hour’ (roughly equal to one modern hour).

kara-kami

H2: 唐紙 wall-paper

As the *NKD* entry for this example says, the first element is /kara/ 唐 'Cathay; foreign lands'.

kara-kane

H2: 鍮 bronze

Typically written (唐金) (*Kōjien*, *Daijirin*). The H2 kanji (Unicode 9395) is not included in most Japanese fonts. As the *NKD* entry for this example says, the first element is /kara/ 唐 'Cathay; foreign lands'.

kara-kasa

H2: 傘 an umbrella

The alternative kanji representation (唐傘), given in many dictionaries, is etymologically and morphologically transparent. As the *NKD* entry says, the first element is /kara/ 唐 'Cathay; foreign lands'.

(kara-sao)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

kara-sumi

H2: 鱈脯 dried salmon's roe

Typically written (鱈子) (*Kōjien*, *Daijirin*). Modern dictionaries all agree that the fish involved is mullet (/bora/ 鱈), not salmon. *NKD* lists this item under /kara+sumi/ 唐墨 'Chinese india ink' and notes that the dried roe resembles an ink stick in shape. Thus, this example was etymologically relevant for Lyman and belongs in this sub-section. If a speaker knows the word and sees the metaphorical connection, it is also synchronically relevant.

kata-ho

H2: 片帆 a sail braced up in the wind

kata-kana

H2: 片仮名 a kind of Japanese character, so called from their being a part only of the original Chinese character, the sharp contracted form such as is used in this book

kata-sumi

H2: 偏隅 one corner, or angle

Typically written (片隅) (*Kōjien*, *Daijirin*).

kata-toki

H2: 片時 a short time, little while

? *ko-sawa*

H2: not listed

There are places in Japan named *Kosawa*, written 古沢 or 小沢, and it could be that Lyman intended a place name here, but this example is not as obvious as *Yokohama* (listed above in this sub-section). No headword of the form /kosawa/ appears in H3 or in *NKD*.

(ko-saka ~ ko-zaka)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

mama-chichi

H2: 継父 step-father, foster-father

mama-haha

H2: 継母 step-mother, foster-mother

(mama-ko)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

? *nama-samurai*

H2: [s.v. *nama*] an inexperienced soldier

Typically written 生侍 (*Kōjien*; not listed in *Daijirin*). Lyman actually had “-samurai” here, implying *mama-samurai*, but this must be an error. No headword of the form /mamasamurai/ appears in H2, H3, or *NKD*. Yanaike (1991:69) suggests that the *nama-samurai* is what Lyman intended here, and this suggestion is almost certainly correct. *NKD* lists both /nama+zamurai/, with *rendaku*, and /nama+saburai/ as headwords, but not /nama+samurai/. See §7.5.2 on /m/~b/ variability.

mi-hakase

H2: 御刀 the sword of the Mikado

Typically written 御佩刀 (*Daijirin*; not listed in *Kōjien*), this example is obsolete. According to the *NKD* entry, it developed from the earlier form /mi+hakaši/, a noun derived from obsolete /mi+hak+as-u/ 御佩かす ‘to put on’, which consists etymologically the no-longer-productive exalting prefix /mi/, the root of the verb /hak-u/ ‘to put on’, and the honorific suffix /as/ (which was productive in OJ; Frellesvig 2010:62–63). This example would have been synchronically relevant to late-19th-century speakers who knew the word and understood /mi/ as an

honorific prefix. This prefix generally blocks *rendaku* in the immediately following element (see the comments on *mi-hashī* above in this sub-section).

(*mi-hashī*)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

(*mi-kata*)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

(*ō-mi-ke*)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

mi-koshi

H2: 神輿 the sacred car in which the mirror, the paper, or the idol, which represents the *Kami*, is taken in processions and festivals

The first element of this example is etymologically the no-longer-productive exalting prefix /mi/, and the second element is a noun meaning 'palanquin' (cf. ⁰¹/kosi/), which appears as a headword in H2 and which modern dictionaries still list as an independent word. This prefix generally blocks *rendaku* in the immediately following element (see the comments on *mi-hashī* above in this sub-section). Modern dictionaries also give the alternative kanji representation (御輿) for /mi+koši/ (*Kōjien*, *Daijirin*), but etymologically misleading (神輿) is more common for the usual modern meaning 'portable shrine' (i.e., the H2 definition). In Tōkyō Japanese today, the polite prefix /o/ (see the comments on *o-kure* in sub-section 4(a) above) typically combines with this example, and modern dictionaries list /o+mi+koši/ (written (御神輿)) as a separate headword.

Yanaïke (1991:69) suggests /mi+koš-i/ (Hepburn's citation form of the verb /mi+kos-u/ 見越す 'to foresee') as another possibility here, but since it is an obvious V+V=V compound, it would not belong in this sub-section. The derived V+V=N compound /mi+koši/ 見越し 'anticipation' is also listed in modern dictionaries, although not in H2, but it too would not belong in this sub-section. Lyman listed V+V=V compounds in sub-section 3[a] and V+V=N compounds in sub-section 3[b], but he included only those that have *rendaku*.

(*mi-koto*)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

mi-sora

H2: 御空 the sky

The no-longer-productive exalting prefix /mi/ generally blocks rendaku in the immediately following element (see the comments on *mi-hashī* above in this sub-section).

mi-takara

H2: 御宝 the precious things belonging to a *Miya* or to the Mikado; these last a mirror, a sword, and a jewel, the insignia of his rank

The no-longer-productive exalting prefix /mi/ generally blocks rendaku in the immediately following element (see the comments on *mi-hashī* above in this sub-section).

mi-tama

H2: 御靈 the soul, spirit; used generally of the *Kami*

The two kanji are reversed in the H2 entry, but this misprint was corrected in H3. The no-longer-productive exalting prefix /mi/ generally blocks rendaku in the immediately following element (see the comments on *mi-hashī* above in this sub-section).

(iki-mi-tama)

H2: 生御靈 the spirit or soul of a living person; the parents still living, – to whom offerings or presents of living things are made by a child during the Bon festival

Lyman had this item in parentheses, presumably because it contains *mi-tama*, which appears just above.

mi-tarashi

H2: 御手洗 a pool or trough where worshipers at a *Miya* wash their hand before worshipping

The first element of this example is the no-longer-productive exalting prefix /mi/, which generally blocks rendaku in the immediately following element (see the comments on *mi-hashī* above in this sub-section). The second element is based etymologically on the ancestor of the verb /tor-u/ 取る ‘to take’, combined with the honorific suffix /as/ (which was productive in OJ; Frellesvig 2010:62–63). This honorific verb is obsolete, and the kanji (手洗) are *ateji*. An OJ word corresponding to this H2 example was an honorific noun meaning something like ‘item in hand’, and it had the inferred form ^{OJ}/mi+torasi/ (see the entry in *Jōdai*), although it is not attested in phonograms (see §1.2). The earliest *NKD* attestation for the ancestor of the modern form (^{EMJ}/mi+tarasi/) dates from ca. 1000, and the vowel change that accompanied the semantic shift may have been induced at least in part by etymologically unrelated ^{EMJ}/tarawi/ (cf. modern

/tarai/ 盥 ‘washbasin’), which originated as a compound based on the ancestors of the noun /te/~/ta/ 手 ‘hand’ and the verb /ara-u/ 洗う ‘to wash’ (Martin 1987:542). If Lyman had known that the second element of this example was etymologically deverbal, he presumably would not have included it in this sub-section.

mi-tochō

H2: 御戸帳 a curtain hung before the altar in a Bud. temple

Lyman actually had “-toohoo” here, implying *mi-tōhō*, but this is almost certainly an error. No headword of the form *mitōhō* appears in H2 or H3. Current dictionaries (*Kōjien*, *Daijirin*, *NKD*) list modern Tōkyō /mi-toH+hoH/ 未踏峰 ‘unclimbed peak’, but this word consists of three Sino-Japanese morphemes, and the primary morphological division is not after /mi/. The first element of *mi-tochō*, which is obsolete, is the no-longer-productive exalting prefix /mi/, which generally blocks rendaku in the immediately following element (see the comments on *mi-hashī* above in this sub-section). The alternative kanji (斗帳) (*NKD*) for the base /točōH/ ‘covering cloth’ (which is also obsolete) suggest that it may be etymologically a Sino-Japanese binom. *Daijirin* makes this claim, since the object denoted has a shape that resembles an inverted square, wooden measuring cup (i.e., /masu/, which can be written with the kanji (斗)). This example belongs here etymologically only if the first syllable of the base is /to/ 戸 ‘door’ or some other native morpheme. (If it is, rendaku would violate the Right-Branch Condition; see §7.2.3.) Synchronically, of course, it would be relevant here as long as late-19th-century speakers analyzed /to/ as native, regardless of whether or not this analysis was a folk etymology.

taka-mi-kura

H2: 高御座 the throne of the *Mikado*

The no-longer-productive exalting prefix /mi/ generally blocks rendaku in the immediately following element (see the comments on *mi-hashī* above in this sub-section).

o-fukuro

H2: 阿母 mother

Typically written (御袋) (*Kōjien*, *Daijirin*). The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above).

o-hayō

H2: (comp. of *o*, honorific for you, and *hayō*, cont. of *hayaku* early), = you are early; a morning salutation

Kōjien and *Daijirin* both give 〈お早う〉, although it is more common to use all hiragana: 〈おはよう〉. The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4 (a) above). Since the second element is adjectival, Lyman should have listed this example above in sub-section 4(c).

o-hari

H2: 阿針 a seamstress

Typically written 〈御針〉 (*Kōjien*, *Daijirin*). The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above).

o-hiya

H2: cool water, – for drinking

Typically written 〈御冷や〉 (*Kōjien*, *Daijirin*). The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above).

o-hyarakasu

H2: *ohiyarakashi* to joke, play or sport with; to play tricks on, befool, hoax

Typically written 〈おひやらかす〉 (*Kōjien*, *Daijirin*). According to *NKD*, this word is derived from the attested verb *ohyaru*, with *-akas-* as a derivational suffix (i.e., formant; Martin 1987:791). There is no certain etymology in the *NKD* entry, and the earliest attestation is 1822. Lyman may have seen this example as connected to *hiyakasu* (modern Tōkyō /hiyakas-u/ 冷やかす ‘to make fun of’), with /o/ as some kind of prefix, but since it is a verb, it does not belong in this sub-section. Lyman should have listed it in sub-section 4(a) above.

o-hie

H2: *ohiye* a padded coat

Typically written 〈御冷え〉 (*Kōjien*, *Daijirin*). The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above).

o-kan

H2: 悪寒 the cold, the chill stage of fever

Since /o·kaN/ is a Sino-Japanese binom, this example does not belong here.

o-ketsu

H2: 悪血 bad blood

NKD lists /o·kecu/ as a headword, although it gives /o·gecu/ as an alternative pronunciation. Since this example is a Sino-Japanese binom, it does not

belong here. The form /o.gecu/, with apparent rendaku (i.e., *shindaku* 新濁; see §7.3.3), would be appropriate in sub-section 2(b) above.

o-tamaya

H2: 御霊屋 the cemetery of the *Kubō sama*

The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above). Since the second element in this example is itself a compound (cf. /tama/ 'soul', /ya/ 'house'), rendaku would violate the Right-Branch Condition (see §7.2.3).

o-tori

H2: 媒鳥 a bird used to decoy others

The *NKD* entry and Martin (1975:513) agree that the second element is etymologically the ancestor of the noun /tori/ 鳥 'bird', while the first element is based on an obsolete verb meaning 'to invite' (Martin 1975:741) that would be /ok-u/ if it had survived into modern Tōkyō Japanese (cf. ^{OJ}/wok-u/).

Yanaike (1991:69) suggests /otori/ 劣り 'inferiority' as another possibility here, but this item appears above, in sub-section 4(a) where it belongs, and is very unlikely to be what Lyman intended here.

(*o-tossan*)

H2: 阿爺 (contraction of *o-toto-san*) com. coll. Father

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section, but the point there is the absence of rendaku in /saN/. The point here is the absence of rendaku immediately following /o/. The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above). Lyman actually had "ototsan" here, and the H2 romanization is (ototsan), but the katakana spelling in the H2 entry is (オトツサン), implying /otoQsaN/.

(*o-tsutsu*)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

o-tsuyu

H2: soup made of vegetables or beans

Typically written (御汁) (*Kōjien*, *Daijirin*). The polite prefix /o/ generally blocks rendaku in an immediately following consonant (see the comments on *o-kure* in sub-section 4(a) above).

(*ō-kawa*)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

ō-kimi

H2: 大君 the Emperor, the lord
(*ō-kuchi*)

Lyman gave this item in parentheses, presumably because it is a duplication. It appears above in this sub-section.

ō-kura-shō

H2: 大藏省 the department in the government, which superintends the taxes and financial affairs, the finance or treasury department

The relevant portion of this example is /oH+kura/ ‘treasury’ (cf. bound /oH/ 大 ‘great’, /kura/ 藏 ‘storehouse’), which is not used as a word on its own but is easily separable and analyzable. The Japanese government used the name /oH+kura+šoH/ (usually translated as ‘Ministry of Finance’) from 1869 until 2001.

? *ō-sawa*

H2: not listed

There are places named *Ōsawa* in Japan, written 大沢, and it could be that Lyman intended a place name here, but this example is not as obvious as *Yokohama* (listed above in this sub-section). No headword of this form appears in H3 either. *NKD* lists /oH+sawa/, but only as a place name or a surname.

abura-hi

H2: 油灯 an oil light

Typically written 油火 (*Kōjien*; not listed in *Daijirin*).

ao-hiki

H2: 青蟻 a small green frog

NKD lists only /ao+biki/, with *rendaku*, as a headword, but the entry gives /ao+hiki/ as an alternative pronunciation. Although /hiki/ 蟻 ‘toad’ is seldom used as a word on its own in modern Tōkyō, the compound /hiki+gaeru/ 蟻蛙 ‘[literally] toad-frog’ (cf. /kaeru/ ‘frog’) is relatively common.

ao-sora

H2: 青空 the blue sky

NKD lists only /ao+zora/, with *rendaku*, as a headword, but the entry gives /ao+sora/ as an alternative pronunciation.

[[*ao-to*]]

This item is a duplication. It appears earlier in this section.

asa-haka

H2: 浅墓 pretending to know what one is ignorant of, affecting a knowledge of any thing

Typically written 〈浅はか〉 (*Kōjien*, *Daijirin*). The second element in this example is etymologically identical to /haka/ 抄/計/量 'progress; allotted amount', which is also the etymological root in /hakar-u/ 計る 'to measure' and the etymological first element in /haka+dor-u/ 抄る 'to make progress', which originated as an N+V=V compound (cf. /tor-u/ 取る 'to take') (Martin 1987:396). The connection to /haka/ 墓 'grave' suggested by the second kanji in the H2 entry could be taken as a semantically implausible folk etymology.

eda-ha

H2: *yeda-ha* 枝葉 branches and leaves; subdivision, or branches of a sect

This example is a coordinate compound. Lyman should have listed in subsection 4(d) above.

? *fusa-sakura*

H2: 草桜 the verbena

NKD lists only /fusa+zakura/, with *rendaku*, as a headword and does not give /fusa+sakura/ as an alternative pronunciation.

? *ha-koromo*

H2: the *Achillea* or milfoil

NKD lists only /ha+goromo/, with *rendaku*, as a headword and does not give /ha+koromo/ as an alternative pronunciation.

? *hana-fuyu*

H2: not listed

No headword of the form /hanafuyu/ appears in H3 or in *NKD*, so this item is presumably an error, but I have not been able to come up with a candidate for what Lyman intended here.

inu-koro

H2: 狗子 a pup

Typically written 〈犬ころ〉 (*Kōjien*, *Daijirin*). Synchronically, the second element is an unproductive diminutive suffix. According to the relevant *NKD* entry (under the headword /ko+ro/ 子等) and *Jōdai* entry, the corresponding OJ word was an eastern dialect form of standard (Central OJ) ^{OJ}/kwo+ra/ (cf. ^{OJ}/kwo/ 'child' and the hypocoristic suffix ^{OJ}/ra/).

iro-tsuya

H2: 色艶 the gloss, lustre, brightness, complexion of anything

i-e

H2: *iye* 家 a house, a family

Lyman had “i(h)e” here, and the historical kana spelling is ⟨i he⟩ (*i he*). He evidently assumed that this example is etymologically a compound and that the modern Tōkyō form would be /ibe/ if *rendaku* had occurred. He may have thought that the putative second element was cognate with ^{OJ}/pe/ 戸 ‘house’ (see the comments on the place name *Kōbe* 神戸 in the “Etymological Suggestions” section below), but as the *Jōdai* entry for ^{OJ}/pe/ points out, the OJ word corresponding to modern Tōkyō /ie/ was ^{OJ}/ipye/, not ^{OJ}/ipe/. There is no question that /ie/ was monomorphemic for late-19th-century speakers, just as it is for present-day Tōkyō speakers.

Yanaïke (1991:68) suggests Hepburn’s citation form (*iye*) of the verb /ie-ru/ 癒える ‘to be healed’ as another possibility here, but this seems very unlikely. The theoretically possible deverbal noun does not appear as a headword in H2 or in modern dictionaries, and verbs do not belong in this sub-section. In any case, in the OJ form corresponding to this verb stem, the consonant following ^{OJ}/i/ was ^{OJ}/y/, not ^{OJ}/p/ (Martin 1987:696), so *rendaku* would have been impossible even if there had been a morpheme boundary following ^{OJ}/i/.

kamo-shika

H2: 羚羊 a kind of wild stag

Lyman had “kamashika” here, but this must be an error. No headword of the form /kamašika/ appears in H3 or in *NKD*. The alternative kanji representation (麁鹿) (*Kōjien*, *Daijirin*) is etymologically correct. The first element is obsolete (cf. ^{EMJ}/kamo/ 麁 ‘woolen cloth’), but the second element is transparently /šika/ 鹿 ‘deer’.

kami-sakayaki

H2: 髮月代 dressing the hair in Japanese style

This example is obsolete, but the second element (which also appears as a headword in H2) is still in use as an independent word, and it looks like a compound, although the etymology is uncertain. The *ateji* ⟨月代⟩ are from the obsolete synonym /cuki+širo/ 月代 (cf. /cuki/ ‘moon’, /širo/ ‘substitute’), which is easily analyzable but semantically opaque.

kata-tsumuri

H2: 蝸牛 a snail

The alternative form /kata+cuburi/ is also attested and listed in *NKD* as a separate headword. Lyman’s Law would be expected to prevent *rendaku* in the form with /b/ (see §7.5.2 on /m~/b/ variability). Martin (1987:444) says that, etymologically, the first element is the root of the adjective /kata-i/ 硬い/固い

堅い 'hard' and the second element is obsolescent /cumuri/~ /cuburi/ 頭 'head'. H2 lists both /cumuri/ and /cuburi/ as headwords (although the entry for the latter is just a cross-reference to the former), so Lyman may well have seen the etymological connection, but the kanji obscure it, and this example was probably not a synchronic compound for late-19th-century speakers. On the other hand, the H2 entry for /kata+cumuri/ cites /mai+mai+cuburi/ 舞舞螺 (cf. /ma-u/ 舞う 'to dance') as a synonym, and a speaker who knew this synonym would presumably have found it easier to analyze /kata+cuburi/~ /kata+cumuri/. As a headword, however, H2 lists only the alternative form /mai+mai+cubura/.

kiri-kishi

H2: 截岸 a steep bank

Typically written 切り岸 (Kōjien, Daijirin). *NKD* lists only /kiri+giši/ as a headword, but the entry gives /kiri+kiši/ as an alternative pronunciation.

? *maru-toshi*

H2: 周歲 a whole year

NKD lists only /maru+doši/, with *rendaku*, as a headword and does not give /maru+toši/ as an alternative pronunciation. Typically written 丸年 (Kōjien, Daijirin).

? *me-kao*

H2: 目顔 expression of the face or eye; grimace, or signs made by the eye or face

NKD lists only /me+gao/, with *rendaku*, as a headword and does not give /me+kao/ as an alternative pronunciation.

moro-tomo ni

H2: 諸共 all together, together with

[[*mune-to*]]

This item is a duplication. It appears earlier in this section.

nari-sō

H2: 成相 appears as if it would be, seems as if, looks as if

This example is an instance of the productive morphological pattern of adding the suffix /soH/ to a verb base to form an adjectival noun meaning 'appears as if SUBJ will VERB'. See the explanation for *shi-sōmonai* in sub-section 4 (c) above.

nori-kumi

H2: 乗組 the company of persons in a ship, or carriage

Since the second element is etymologically (and almost certainly synchronically) deverbal (cf. /kum-u/ 組む ‘to put together’), Lyman should have listed this example in sub-section 4(a) above.

oku-soko-nai

H2: 無奥底 open, frank, without concealment or disguise; ingenuous, candid

This example is not listed as a headword in *Kōjien*, *Daijirin*, or *NKD*, but these three dictionaries all list /oku+soko/ 奥底 ‘hidden depths’ alone. This suggests that *oku-soko-nai* in H2 was just a phrase with a particle (/ga/ or /no/) omitted before /nai/. In any case, what is relevant is the absence of rendaku in /soko/.

ori-fushi

H2: 折節 sometimes, now and then, occasionally; just then, just at that time, instant, or conjuncture

ori-hime

H2: 織女 the weaver, the name of the star Vega, near the Milky Way

Typically written (織姫) (*Kōjien*, *Daijirin*). Lyman had “orihima” here, but this must be an error, since no such headword is listed in H2 or in *NKD*.

oto-toi

H2: 昨日 day before yesterday

Typically written (一昨日) (*Kōjien*, *Daijirin*). This is the modern Tōkyō form, and it corresponds to the same OJ word as the example just below (^{OJ}/woto+tu+pi/). The change in the third vowel is a simple instance of vowel assimilation, and the earliest *NKD* attestation with this vowel is from the mid-10th century. Lyman did not hyphenate this example, but he would have to have analyzed it either as /o+totoi/ or as /oto+toi/ for it to be relevant here. Either way, the second element is etymologically fanciful, but the latter analysis is much more likely for a late-19th-century speaker who knew the word /oto+toši/ 一昨年 ‘the year before last’ (cf. /toši/ ‘year’). This word is not listed in any of the first three editions of Hepburn’s dictionary, but it is attested in OJ, although not in phonograms.

oto-tsui

H2 lists this as an alternative pronunciation in the same entry as the immediately preceding item.

Typically written (一昨日) (*Kōjien*, *Daijirin*). In present-day Japan, this example is usually regarded as a Kansai dialect form. The corresponding OJ word is ^{OJ}/woto+tu+pi/, in which ^{OJ}/woto/ (~^{OJ}/woti/) is a bound form of an obsolete distal demonstrative (see the discussion of covered-form and exposed-form

vowels in §7.2.3), ^{OJ}/tu/ is a genitive particle, and ^{OJ}/pi/ means 'day'. Lyman did not hyphenate this example, but he would have to have analyzed it either as /o+tocui/ or as /oto+cui/ for it to be relevant here. As in the example just above, the second element is etymologically fanciful either way, but the latter analysis seems much more likely.

rai-haru

H2 [s.v. *rai*]: 来春 the coming spring, next spring

sa-hachi

H2: 沙鉢 a platter, or large dish

Typically written 〈沙鉢〉 or 〈皿鉢〉 (*Kōjien*, *Daijirin*). According to the *NKD* entry for this example, it is a clipping of unattested ^{EMJ}/asa+pati/ (cf. modern Tōkyō /asa-i/ 浅い 'shallow', /hači/ 鉢 'bowl'). Since the second element is etymologically Sino-Japanese, this example does not belong in this sub-section, and since it does not have *rendaku*, Lyman could not have listed it above in sub-section 2(b) either. It should be noted, however, that the phoneme sequence /hači/ is not obviously Sino-Japanese (cf. native /hači/ 蜂 'bee') and that this element meaning 'bowl' behaves like a typical native element, occurring as a word on its own and showing *rendaku* in many compounds (e.g., /suri+bači/ 搗り鉢 'earthenware mortar').

sa-hari

H2: 白銅 white copper, a kind of metallic composition

Typically written 〈胡銅器〉 or 〈響銅〉 (*Kōjien*, *Daijirin*). This example is obsolete, but the medial /h/ indicates that it is either an etymological compound (as Lyman must have assumed) or a borrowing. The *NKD* entry gives no certain etymology, although it notes that a language of the Korean peninsula has been suggested as a source.

satsu-hito

H2: 薩人 a hunter

Typically written 〈獵人〉 (*Kōjien*, *Daijirin*), this example is obsolete. The first element is etymologically related to modern /sači/ 幸 'happiness; delicious food' (cf. ^{OJ}/sati/~satu/; see the discussion of covered-form and exposed-form vowels in §7.2.3), but it preserves the obsolete meaning 'hunting implement; abundant game' (Martin 1987:519). The *ateji* 〈薩〉 further obscures the etymology of the first element, but second element is obviously /hito/ 人 'person', so this example would have been easy to analyze for a late-19th-century speaker who knew it, even though the first element was semantically opaque.

shō-kachi

H2: female gonorrhea, lencorrhea

Typically written 消渴 or 瘡癘 (*Kōjien*, *Daijirin*). According to the *NKD* entry for this obsolete example, it was first written 消渴 and denoted an illness involving dehydration but was later applied to a different illness, with a concomitant change in the kanji representation to 瘡癘. In any case, since this example is a Sino-Japanese binom, it does not belong in this sub-section.

waka-tono

H2: 若殿 a young lord, or son of a noble

zū-kuni

H2: *dzu-kuni* same country, (a provincialism)

The entry in *NKD* gives the kanji 同国. Lyman had “dzukuni” here, with a short first vowel, but this is an error caused by the mistaken romanization ⟨dzu-kuni⟩ in H2. The katakana spelling in H2 is ⟨ヅウクニ⟩, and the romanization was corrected to ⟨zū-kuni⟩ in H3. The *NKD* entry suggests that /zuH/ may be a lengthened Sino-Japanese reading of 同, but not all kanji dictionaries recognize /zu/ as a Sino-Japanese reading for this kanji. Nonetheless, this example would have been easy to analyze for a late-19th-century speaker, regardless of the status of the first element.

? ji-sakai

H2: 地境 boundary lines of land, or country

NKD lists only /ji+zakai/ as a headword, and the entry does not give /ji+sakai/ as an alternative pronunciation. Lyman had “jisaka” here, but this must be an error, since there is no headword of the form /jisaka/ in H2 or in *NKD*.

? mizu-kame

H2: *midzu-kame* 水瓶 a water-jar

NKD lists only /mizu+game/ as a headword, and the entry does not give /mizu+kame/ as an alternative pronunciation.

mizu-saki

H2: *midzu-saki* 水衝 a ship’s pilot

Typically written 水先 (*Kōjien*, *Daijirin*).

mizu-seki

H2: *midzu-seki* 水堰 a dam for obstructing a current of water

This example is obsolete and is so obscure that it is not listed as a headword in *Kōjien* or in *Daijirin*. The second element is etymologically identical to /seki/ 関 ‘barrier, checkpoint’ and is derived from the verb /sek-u/ ‘to dam, block’, for which *Kōjien* and *Daijirin* give 塞 and 堰 as written

representations. This verb appears as a headword in H2, written with the kanji (堰), and Lyman should have listed /mizu+seki/ with other N+V=N compounds above in sub-section 4(b).

? *sabi-tsue*

H2: *sabitsuye* 鍬 a kind of hoe

H3 has *sabi-zuye*, with *rendaku* (and a ⟨y⟩ mistakenly retained from the earlier romanization), but no headword of the form /sabi+cue/ or /sabi+zue/ is listed in *NKD*.

shat-tsura

H2: your impudent face, used only in contempt or anger

Typically written (しゃっ面) (*Kōjien*, *Daijirin*), this example is obsolete. *NKD* lists both /šaQ+cura/ and /ša+cura/ as headwords, and the entries describe /ša/~/šaQ/ as a pejorative prefix. The form in H2, with /Q/, was presumably emphatic, but it makes this example irrelevant because the /Q/ makes *rendaku* impossible (see §7.4.7). The form without /Q/ would be relevant, but it does not appear in H2 or in H3.

? *shinobi-suma*

H2: a mistress kept secretly

NKD lists only /šinobi+zuma/ as a headword, and the entry does not give /šinobi+cuma/ as an alternative pronunciation. Typically written (忍び妻) (*Kōjien*, *Daijirin*).

? *shio-su*

H2: 塩醋 muriatic acid

NKD lists only /šio+zu/ 塩酢 ‘salted vinegar’ as a headword, and the entry does not give /šio+su/ as an alternative pronunciation. The modern Tōkyō word for muriatic acid (i.e., hydrochloric acid) is /eN·saN/ 塩酸 (*Kōjien*, *Daijirin*).

shira-tsuyu

H2: 白露 dew

Lyman had “shiratsura” here, but this must be an error, since there is no such headword in H2 or in *NKD*.

[[*tobi-hi*]]

This item is a duplication. It appears earlier in this section.

? *tō-karasu*

H2: the magpie

NKD lists only /toH+garasu/ as a headword, and the entry does not give /toH+karasu/ as an alternative pronunciation.

umi-hechima

H2: 海綿 sponge

The element /hečima/ is typically written 𦉰瓜 or 𦉰天瓜 (*Kōjien*, *Daijirin*). The second H2 kanji (Unicode 25FAD) is not included in most Japanese fonts. Lyman had “uminechima” here, but this is clearly an error, since there is no such headword in H2 or in *NKD*.

ubu-suna

H2: 産土 the tutelary god of a place

This example is a clipping of /ubu+suna+gami/ 産土神 (cf. /kami/ ‘god’), in which /ubu+suna/ meant ‘birthplace, native place’. The *NKD* entry for /ubu+suna/ offers no definite etymology, but it should have been fairly easy for a late-19th-century speaker to analyze it into two elements, although the second element is obscure. The corresponding OJ element ^{OJ}/ubu/ was bound and meant something like ‘birth’, and this meaning is preserved in /ubu+suna/. It is connected etymologically to the verb /um-u/ 生む/産む ‘to give birth’ (Martin 1987:779; see §7.5.2 on /m/~b/ variability). This first element has become an adjectival noun (*keiyōdōshi* 形容動詞) /ubu na/ 初な and is ordinarily used to mean ‘innocent, naïve’ in modern Tōkyō Japanese. It also appears as a headword in H2 (written 𦉰生), with most examples involving the older meaning ‘natural, unadorned’.

yabu-ka

H2: a large kind of mosquito which infests cane-breaks

Typically written 𦉰蚊 or 𦉰豹脚蚊 (*Kōjien*, *Daijirin*).

yobi-koe

H2: *yobi-koye* 呼声 the cry of street hucksters

NKD lists only /yobi+goe/ as a headword but says that /yobi+koe/ is an older pronunciation.

yo-horo

H2: 𦉰 a laborer, a coolie (obs.)

The *NKD* entry for this obsolete example identifies it etymologically with with ^{EMJ}/yoporo/~yoworo/ 𦉰 ‘back of the knee’. Martin (1987:577) lists the later form /yoHro/ but notes that /yohoro/ and /yoboro/ are also attested. Neither *NKD* nor Martin analyzes /yohoro/ or offers a definite etymology, but the medial /h/ suggests that it is an etymological compound. Lyman may have identified /horō/ with /horō/ 幌 ‘armor hood; carriage top’, which appears as a headword in H2, but none of the H2 possibilities for /yo/ (/yo/ 世 ‘world’, /yo/ 節 ‘joint’, /yo/ 四 ‘four’, /yo/ 夜 ‘night’) seems semantically persuasive.

yabu-karashi

H2: a wild grape, *Bitis Penbaphilla*

Typically written 葎枯らし (*Kōjien, Daijirin*). *NKD* lists only /yabu+garaši/ as a headword, but the entry gives /yabu+karaši/ as an alternative pronunciation. Lyman actually had “yubukarashi” here, but this must be an error, since there is no such headword in H2 or in *NKD*.

yama-hiko

H2: 山彦 an echo

NKD lists only /yama+biko/ as a headword, but the entry gives /yama+hiko/ as an alternative pronunciation. Lyman actually had “yumahiko” here, but this must be an error, since there is no such headword in H2 or in *NKD*.

? *yurume-kusuri*

H2: 緩薬 anodyne medicines

NKD lists only /yurume+gusuri/ as a headword, and the entry does not give /yurume+kusuri/ as an alternative pronunciation. The ⟨k⟩ in the H2 romanization is clearly a misprint. Both H1 and H3 have ⟨g⟩, and the katakana spelling in H2 is (ユルメグスリ).

[Etymological Suggestions]

The last five pages of Lyman's pamphlet are taken up mostly by etymological suggestions. Not all of the words he mentions are relevant as examples with or without *rendaku* at a potential *rendaku* site, and I have listed only the relevant examples below. Several of Lyman's etymologies are uncontroversially correct, or at least on the right track. Those that are not are discussed individually.

Naga-saki

H2: not listed

This place name is typically written 長崎, and the elements are an adjective root (cf. /naga-i/ ‘long’) and a noun that is no longer used as an independent word. Lyman did not mention the absence of *rendaku*.

Ku-dani (< *ku-no-tani* ‘ninth valley’); *Ku-tani*

H2: not listed

This place name is typically written 九谷. *NKD* gives only /ku+tani/, without *rendaku*, both for the name of the place and for the name of the famous porcelain made there. Yanaïke (1991:63, note 40) points out that Lyman's etymology (‘ninth valley’) is at odds with what modern scholars have proposed.

Tera-shima ‘island belonging to a temple’; *Tera-jima* ‘island with a temple on it’

H2: not listed

Lyman capitalized these examples, so he presumably intended them as the proper nouns typically written 〈寺島〉. *NKD* lists both /tera+šima/ and /tera+ĵima/ as surnames but only /tera+ĵima/ as a place name. Lyman’s semantic distinction is fanciful (see §7.8.4).

akindo (< *akinai no hito* ‘man of trade’)

H2: 商人 a merchant, trader, tradesman

This word is uncontroversially a contraction of ^{EMJ}/aki+bito/ ‘trade person’ (Martin 1987:379; Frellesvig 2010:193). The earliest *NKD* attestation for the contracted form is from the late 11th century, and since voiced obstruents were still prenasalized (Frellesvig 2010:164–165; see also §1.2), the contraction of [akĩ^mbito] to [akĩndo] is a plausible change that does not require positing any additional element between the two elements of the original compound. Compare the well-known changes in verb forms such as ^{EMJ}/yobi+te/>^{MT}/yoN+de/ 呼んで ‘calling’ ([jō^mbite]>[jōn:de]).

shirōto (< *shiro-hito* ‘man of whiteness’)

H2: 白人 one who does not properly belong to the trade or profession spoken of, an outsider, an inexperienced person

Typically written 〈素人〉 (*Kōjien*, *Daijirin*). Lyman’s etymology is uncontroversial (Martin 1987:526).

kurōto (< *kuro-hito* ‘man of blackness’)

H2: one belonging to, or skilled in, the profession, business, or trade spoken of

Typically written 〈玄人〉 (*Kōjien*, *Daijirin*). Lyman’s etymology is uncontroversial (Martin 1987:465).

kurombō (< *kuro na hito* ‘a man that has become black or tanned’)

H2: *kurombō* 黒人 a black person, a negro

Typically written 〈黒ん坊〉 (*Kōjien*, *Daijirin*). *NKD* lists both /kuroNboH/ and /kuroNbo/ as headwords. There does not seem to be any doubt that the final element in this example and in the two following examples is Sino-Japanese and not a contraction involving the ancestor of native Japanese /hito/ 人 ‘person’. This Sino-Japanese morpheme came to mean ‘Buddhist monk’ in Japanese (cf. modern Tōkyō /boH-zu/ 坊主 ‘Buddhist monk’, /o+boH+saN/ お坊さん ‘Buddhist reverend’), and then much later came to be used as a hypocoristic, added to bases denoting people or characteristics of people. The oldest attestations of this use in *NKD* are from the 18th century. The /N/ that often but not always precedes /boH/~bo/ seems to be epenthetic, not a contraction of genitive /no/. (Lyman’s

kuro na hito is ungrammatical, but *kuro no hito* would have been a reasonable guess.) It must be noted that this example is now considered highly offensive, and all but the most comprehensive modern dictionaries omit it.

akambō (< *aka na hito* 'red man, but not permanently or fully so')

H2: *akambō* 赤子 an infant

Typically written 赤ん坊 (*Kōjien*, *Daijirin*). *NKD* lists both /akaNboH/ and /akaNbo/ as headwords. On the etymology of /boH/~bo/, see the explanation for *kuronbō* just above. (Lyman's *aka na hito* is ungrammatical, but *aka no hito* would have been a reasonable guess.)

shiwambō (< *shiwa na hito*)

H2: *shiwambō* a miser, a stingy fellow

Typically written 吝ん坊 (*Kōjien*, *Daijirin*). *NKD* lists both /šiwambōH/ and /šiwambō/ as headwords, although this example is obsolete. On the etymology of /boH/~bo/, see the explanation for *kuronbō* above. (Lyman's *shiwa na hito* is ungrammatical, since the first element is the root of the now obsolete adjective /šiwā-i/ 吝い 'stingy', which appears as a headword in H2. The root has apparently never occurred as a word on its own, so *shiwa no hito* would not have been a reasonable guess.)

kaeri-ji (< *kaeri-michi*)

H2 [s.v. *ji*]: *kayeri ji* 帰り路 return

Jōdai lists ^{OJ}/ti/ 'road, path' as a headword, but the entry notes that it is not attested in OJ as an independent word. The *Jōdai* entry for ^{OJ}/mi+ti/ (cf. modern Tōkyō /miči/ 道 'road, path') says that it was probably derived from this base by adding a prefix, and the entry for the exalting prefix ^{OJ}/mi/ cites ^{OJ}/mi+ti/ as an example. Examples with *rendaku*, as in ^{OJ}/yama+di/ (cf. modern Tōkyō /yama+ji/ 山路 'mountain path'), are also attested. Like H2, modern dictionaries list /ji/ (typically written 路) as a headword, and late-19th-century speakers presumably saw it as a bound root, just as present-day speakers do. The earliest *NKD* attestation for Lyman's example /kaeri+ji/ is from the late 9th century, but this word is now obsolete. It has been supplanted by /kaeri+miči/ 帰り道, for which the earliest *NKD* attestation is from the early 19th century. It seems very unlikely, therefore, that ^{EMJ}/kaperi+di/ originated as a contraction of ^{EMJ}/kaperi+miti/ (or an ancestor of this form).

kawa-ji (< *kawa-michi*)

H2: not listed

This example is obsolete. The corresponding OJ form ^{OJ}/kapa+di/ 'river's course' is attested, but no ancestor of Lyman's proposed etymological source is attested in any period, and modern dictionaries do not list /kawa+miči/ 川道. It

is not impossible that ^{OJ}/kapa+di/ originated as a contraction of a prehistoric form ending in ^{pre-OJ}/mi+ti/ (see the comments on *kaeri-ji* just above for the etymology of ^{OJ}/mi+ti/), but it seems more likely that it goes back to a prehistoric phrase ^{pre-OJ}/kapa no ti/ (cf. genitive ^{OJ}/no/) or was simply created on analogy with other compounds containing ^{pre-OJ}/di/(~/ti/) (see §1.2 for a discussion of the historical origin of *rendaku*).

mikka-ji (< *mikka-michi*)

H2 [s.v. *ji*]: 三日路 journey of three days

This example is obsolete. The earliest *NKD* attestation is from the 13th century, and it was almost certainly created by simply using the bound root ^{LMJ}/di/ as the final element (see the see the comments on *kaeri-ji* above).

kō-ji (< *ko-michi*)

H2: 小路 small or narrow streets

Lyman's etymology is uncontroversial (Frellesvig 2010:193). The earliest *NKD* attestations are 934 for the ancestor of /ko+miči/ 小道 'lane, path' (cf. bound /ko/ 'small') and 1275 for the ancestor of /koH+ji/, and the long vowel in the latter is evidence of a syllable lost ([komiti]>[kōũⁿdi]>[koudi]>[ko:dzi]) after long syllables had become possible (Frellesvig 2010:191–192).

kazo ~ kōzo (< *kami* 'paper')

H2: *kōdzu* 楮 the paper mulberry

Lyman actually had “*kadzu*” and “*koodzu*” here. H2 lists only *kōdzu*. H3 lists *kōzu* and also *kazu* (~ *kazu no ki*). *NKD* lists /koHzu/ as a headword but describes it as an alternative pronunciation of /koHzo/. *NKD* also lists /kazu no ki/ (not /kazu/ alone) as a tree name but describes it as an old name for /nurude/ 白膠木 'sumac' (i.e., a different species). The ordinary word for 'paper mulberry' in modern Tōkyō is /koHzo/, which appears as a headword even in a dictionary for elementary-school students (Saeki and Mabuchi 1987). Modern comprehensive dictionaries (*Kōjien*, *Daijirin*) list /koHzo/ and, as an alternative form, /kazo/, but there is no mention of /koHzu/ or /kazu/. The earliest *NKD* citation for the ancestor of /koHzo/ is from the late 12th century, and both *NKD* and Martin (1987:547) agree that it originated as a compound of ^{EMJ}/kami/ (cf. modern Tōkyō /kami/ 紙 'paper') and ^{EMJ}/so/ (cf. modern Tōkyō /so/ 麻 'hemp', which occurs only as a bound relic in obsolete words such as /cuna+so/ 綱麻 'jute'). Thus, Lyman was correct about the etymological first element in this example. The long vowel in /koHzo/ is evidence of a lost syllable ([kamiso]>[kāũⁿ(d)zo]>[kɔ:zo]>[ko:(d)zo]; see the comments on *kō-ji* just above). Although /kazo/ is the expected modern outcome of a contraction that took place

before long syllables were established ([kamiso]>[kāⁿ(d)zo]>[ka(d)zo]), the earliest *NKD* attestation is from 1717.

Kō-zuke (< *kami* 'upper')

H2: not listed

This place name is typically written (上野). The old province of Kōzuke is modern Gunma Prefecture. The etymology is uncontroversial, and the corresponding OJ form ^{OJ}/kami+tu+kenwo/ is attested in phonograms. The earlier province of Keno 毛野 had been divided (probably in the 5th century), and according to the *NKD* entry for this original province name, it was etymologically a compound of ^{pre-OJ}/ke/ 'food' and ^{pre-OJ}/nwo/ 'field' (cf. modern Tōkyō /no/ 野 'field') but written in kanji with the *ateji* (毛) (cf. modern Tōkyō /ke/ 毛 'hair') for the first syllable. In the OJ name for Upper Keno, ^{OJ}/kami/ (cf. modern Tōkyō /kami/ 上 'upper') was followed by the genitive particle ^{OJ}/tu/. Since the contraction of [mi] resulted in compensatory lengthening, it must have taken place after long syllables became established, probably in EMJ ([kamitukeno]>[kāⁿduke(no)]>[kō:dzuke]>[kō:(d)zuke]). Thus, Lyman was right about the etymology of the first element in /koH+zuke/, and he correctly understood the voicing of /z/ as a relic of a lost nasal, but it is not an ordinary example of *rendaku* etymologically. Nonetheless, given /cuke/ in the example just below, it was reasonable to identify /zuke/ and /cuke/ as allomorphs of the same morpheme (see the comments on *Shimo-tsuke* just below).

Shimo-tsuke (< *shimo* 'lower')

H2: not listed

This place name is typically written (下野). The old province of Shimotsuke is modern Tochigi Prefecture. The etymology is uncontroversial, but the corresponding OJ form is attested in phonograms that should have spelled ^{OJ}/simo+tu+kyenwo/. The penultimate syllable ^{OJ}/kye/ is inconsistent with the accepted etymology of the name of the earlier province Keno (see the comments on *Kō-zuke* just above). In fact, however, the phonographic attestations of ^{OJ}/kami+tu+kenwo/ vary, and a few of them spell the penultimate syllable with a phonogram that should have represented ^{OJ}/kye/. We must keep in mind that the *kō-otsu* distinctions were already breaking down in the Nara period (Frellesvig 2010:30; Okimori 2010:120) and that phonogram spellings were sometimes etymologically incorrect. In the OJ name for Lower Keno, ^{OJ}/simo/ (cf. modern Tōkyō /šimo/ 下 'lower') was followed by the genitive particle ^{OJ}/tu/. The flower name *shimo-tsuke* (which denotes a species native to the province) appears above in sub-section 4(a), which lists examples that Lyman analyzed as N+V=N or N+V=V compounds. Thus, as noted in the comments there, Lyman must have folk-etymologized /cuke/ as deverbal, and the only possible source verb listed as a headword in H2 is /cuke-ru/ 付ける 'to attach'. The earliest

NKD attestation the flower name is from the early 10th century, implying that the final syllable of the original province name had already been lost by then. As to why ^{EMJ}/mo/ in ^{EMJ}/simotuke/ did not contract like ^{EMJ}/mi/ in ^{EMJ}/kamituke/ (the example just above), the EMJ phonological changes known traditionally as *onbin* 音便 ‘euphonic changes’ affected mostly syllables with a high vowel (Frellesvig 2010:195–196).

Kō-be (< *kami-he* ‘upper place or dwelling’)

H2: not listed

This place name is typically written (神戸). According to the *NKD* entry, it derives etymologically from a common noun meaning ‘house on shrine land’. The corresponding OJ common noun is attested, and the *Jōdai* headword is ^{OJ}/kamu+be/ (cf. ^{OJ}/kamu~/kamwi/ ‘god’, ^{OJ}/pe~/be/ ‘house’), but since none of the attestations is written phonographically, it is uncertain whether the OJ form actually had *rendaku*. Thus, Lyman was wrong about the etymology of the first element, but the folk-etymological identification of /kami/ 神 ‘god’ (cf. ^{OJ}/kamwi/) with /kami/ 上 ‘upper’ (cf. ^{OJ}/kami/) has been very persistent (Vance 1983; Martin 1987:52). The long vowel in /koHbe/ is evidence of a syllable lost after long syllables had become possible (Frellesvig 2010:191–192), but whether or not the consonant in the final syllable was voiced before the medial syllable was lost, the outcome would have been the same ([kamũ^mbe]>[kãũ^mbe]>[kɔ:be]>[ko:be] or [kamupe]>[kãũ^mbe]>[kɔ:be]>[ko:be]). Incidentally, Lyman could also have cited /koHbe/ 首 ‘head’, which appears as a headword in H2 and is etymologically a combination of elements that meant ‘upper’ and ‘side’ (Martin 1987:457). The corresponding *Jōdai* headword is ^{OJ}/kami+pye/, but since it is not attested phonographically, it is uncertain whether the OJ form actually lacked *rendaku*. We do not know if Lyman was aware of this example, since he listed only examples without *rendaku* above in sub-section 4(e). The second element, with *rendaku*, remains as a bound root in modern examples such as /umi+be/ 海辺 ‘sea-shore’ (cf. /umi/ ‘sea’).

Ō-zaka (< *ōki na saka* ‘great steep-road’) ~ *Ō-saka* (< *ōki saka*)

H2: not listed

This place name is typically written (大阪) today. *NKD* lists only /oH+saka/ as a headword, but the entry mentions /oH+zaka/ as an older pronunciation. Lyman’s *ōki na saka* is grammatical in modern Japanese, but its OJ counterpart would have been ^{OJ}/opoki no saka/ (Frellesvig 2010:80), although this phrase is not attested. The OJ counterpart of Lyman’s *ōki saka* would have been ^{OJ}/opoki+saka/, and this too should have been grammatical (Frellesvig 2010:80) but is

unattested. In any case, both the the /ki/ in the modern Tōkyō adjectival noun /oHki/ 大き 'large' and adjective /oHki-i/ 大きい 'large' is etymologically an inflectional suffix that marked the adnominal form (*rentaikei* 連体形) of an adjective (Martin 1987:838). The conclusive form (*shūshikei* 終止形) of the corresponding OJ adjective was ^{OJ}/opo-si/ 'numerous; large', and its modern Tōkyō counterpart, /oH-i/ 多い 'numerous', has a narrowed meaning. Like the modern Tōkyō bound root /oH/ 大 'large', the root of this OJ adjective was used productively as a first element in compounds, and ^{OJ}/opo+saka/ '(literally) large slope' is attested, but this name was not used for the present-day city until the 15th century. According to the *NKD* entry for *Ōsaka*, the alternative name /o+zaka/ 小坂 '(literally) small slope' was also in use, and the *rendaku* in the alternative (and now obsolete) form /oH+zaka/ presumably arose by analogy. In short, there is no reason to reconstruct an earlier form with a nasal.

hidari (? < *hi no detari*)

H2: 左 the left

Martin (1987:405) offers no etymology for /hidari/, although he suggests that the final syllable might be a separate etymological element. The *NKD* headword is not hyphenated, and the entry does not endorse any of the several proposed etymologies that are listed, a few of which relate the first syllable to /hi/ 日 'sun', as Lyman did. According to the *Jōdai* entry, there is no phonographic evidence for whether the corresponding OJ word had the first syllable ^{OJ}/pi/ or ^{OJ}/pwi/ (cf. ^{OJ}/pi/ 'sun') or for whether it had the second syllable ^{OJ}/ta/ or ^{OJ}/da/. Lyman's *detari* is presumably a classical stative/completive form of a verb corresponding to modern Tōkyō /de-ru/ 出る 'to emerge'. The base ^{EMJ}/ide/ lost its initial vowel (probably late in the EMJ period), and the inflected element that had ^{EMJ}/tar-i/ as its conclusive form (*shūshikei* 終止形) originated in EMJ as a contraction (Frellesvig 2010:238–239) and is not attested in OJ. Lyman's *no* would have to be a nominative marker, a use that is attested for ^{EMJ}/no/ (Frellesvig 2010:243) but not for ^{OJ}/no/ (Frellesvig 2010:126–131). The semantic rationale that Lyman (1894:175) provided for his etymology is that east (the direction of the sunrise) is on the left when one looks out from a dwelling facing south (the favored orientation for taking advantage of the sun's warmth in winter). Leaving aside the problem that a declarative clause is an unlikely etymological source for a noun, Lyman's *detari* did not exist in prehistoric Japanese, and the clause he proposed would have been ungrammatical. For this example to be relevant here, the /d/ in /hidari/ would have to be a reflex of the /t/ in ^{EMJ}/(i)detari/.

migi (?< *miru no o kiri/miru n kiri* ‘cutting off of seeing’ or *mi kagiri* ‘limiting of sight’ or *mi kagiri* < *kami kagiri* ‘the august setting, or the god’s setting’)

H2: 右 right

The longer form /*migiri*/ is also attested (although not used in modern Tōkyō), and the final syllable is the basis for thinking that /*ri*/ in /*hidari*/ might be an etymological element (see the comments on *hidari* just above). Since the date of the earliest citation in the *NKD* entry for /*migiri*/ is 1275, however, the case is weak for thinking that /*migi*/ originated as a truncation. It seems more likely that the final syllable of /*migiri*/ was due to contamination from /*hidari*/, as Martin (1987:477) and the *NKD* entry for /*migiri*/ both note. Another possibility that both mention but do not endorse is a connection to deverbal /*nigiri*/ (cf. /*nigi-ru*/ 握る ‘to clasp, grasp’, and this idea has been around for a long time, since Lyman (1894:175) also mentioned and rejected it. For this example to be relevant here, the /*g*/ in /*migi*/ would have to be a reflex of an earlier /*k*/ (not the ancestor of the /*g*/ in /*kagiri*/).

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Notes

Preface

1 Prototypical *jukuji-kun* represent native Japanese words, but some writers use the same term to refer to kanji that have been assigned to non-Chinese loanwords (Koike 2010:50).

Chapter 1

1 There are a few instances of word-initial voicing that exploit a phonesthetic association between voiced obstruents and negative attributes (Vance 2017b:§4.3). Compare /tama/ 玉 ‘ball’ and /dama/ ‘flour lump’. Needless to say, these two words cannot be analyzed as allomorphs of a single morpheme, since they differ both in form and in meaning. When present-day speakers see the connection, as they probably do in this pair, the word with the initial voiced obstruent can be analyzed as bimorphemic by treating the voicing of the initial consonant as a sub-phonemic morpheme. Ladd (2014:103–105) suggests the term “modulation” for such elements. Despite the potential for confusion between voicing due to this modulation and voicing due to *rendaku*, there do not seem to be any examples of a modulated form appearing as the second element in a compound. The /dama/ in /me+dama/ 目玉 ‘eyeball’, for example, clearly does not mean ‘flour lump’ and can safely be treated as an instance of *rendaku*.

2 Suzuki (2004) provides a definitive history of the technical term *rendaku* in scholarly work on the Japanese language. The original term *renjō no daku* 連声の濁 ‘sandhi voicing’ was shortened to *renjō-daku* and then to *rendaku*. At first, the term referred to what scholars today usually call *shindaku* 新濁 ‘new voicing’, i.e., voicing in Sino-Japanese elements that developed after those elements had been borrowed into Japanese (e.g., the /g/ in /čuH-goku/ 中国 ‘China’; cf. /koku/ 国 ‘country’). There is a discussion of *shindaku* in §7.3 of this book. It was only in the late 18th century that scholars began to use *renjō-daku* to refer to the voicing phenomenon that we see in native vocabulary items like those in (1) on page 2 (Suzuki 2004:20). The first appearance of the shorter form *rendaku* was in a description of the dialect of Shōnai 庄内 (the northwestern part of modern Yamagata Prefecture) written in the early 19th century by Ujiie Ryūkei 氏家竜溪, and the next appearance was in a grammar of Japanese written in the late 1880s by Ōtsuki Fumihiko 大槻文彦 (Suzuki 2004:19). The debut of *rendaku* as a headword in a dictionary was in 1925 in *Kōjirin* 『広辞林』 (Suzuki 2004:18). The phrase *wayuru rendaku* ㄨわゆる連濁 ‘so-called *rendaku*’, implying that *rendaku* was not yet established terminology, continued to appear in the scholarly literature until the late 1950s (Suzuki 2004:19).

3 The underlying difficulty here is that the distinction between affixes and bound roots is problematic. This issue will come up in §7.2.3 (see also Chapter 7 note 25).

4 According to Frellesvig (2010:201–205), ⁰/p/ remained [p] word-initially (perhaps in free variation with [ɸ]) until well into the LMJ period (see also Kiyose 1985). ⁰/p/ at the beginning of a non-initial element in a compound without *rendaku* (e.g., ⁰/asa+pi/ ‘morning sun’) also remained [p]. The romanizations in the Japanese-Portuguese dictionary of 1603–04 (Doi et al. 1980) indicate that the word-initial pronunciation had shifted completely to [ɸ] in Kyōto by the end of the LMJ period (Frellesvig 2010:311). In modern Tōkyō Japanese, [ɸ] remains in inherited words only when it immediately precedes /u/, as in [ɸune] for /fune/ 船 ‘boat’. It

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has shifted to [h] immediately preceding /e/, /a/, or /o/ and to [ç] immediately preceding /i/ or /y/, but because of recent loanwords with [ɸ] immediately preceding vowels other than /u/, the earlier phoneme has split into /f/ (realized as [ɸ]) and /h/ (realized as [h] or [ç]) (Vance 2008:79–80). The upshot is that *rendaku* paired ⁰¹/b/ with ⁰¹/p/, just as it paired ⁰¹/d/ with ⁰¹/t/ and ⁰¹/g/ with ⁰¹/k/. As explained in §1.2, the ancestors of modern Tōkyō /b d g/ were pronounced as prenasalized voiced stops in Old Japanese.

5 Among the many authors who discuss these well-known mergers are Toyama (1972:198–202) and Frellesvig (2010:384–385).

6 For speakers who have syllable-initial [ŋ] (Hibiya 1999; Vance 2008:214–222), the *rendaku* partner of /k/ is (or can be) [ŋ]. This is one more deviation from simple presence versus absence of voicing, and for these speakers, *rendaku* involves a phonetically unnatural class of voiceless segments alternating with a phonetically unnatural class of voiced segments.

7 In a few cases, an alternating English noun morpheme is also related to a verb with a stem-final voiced fricative. For example, the verb *house* is pronounced /hauz/, just like the allomorph of the noun morpheme that appears in the plural. There are also some examples of a verb stem ending in /ð/ that has a different vowel than the related noun. One of these is *bathe* /beð/, with /e/ instead of the /æ/ of *bath* /bæθ/. Given the differences in meaning, the noun and verb in such a pair cannot be analyzed as just allomorphs of the same morpheme.

8 Frellesvig (2010:163–165) discusses the historical development of the *dakuten* diacritic.

9 The historical kana spellings of these sequences reflected their pre-merger pronunciations. For example, modern Tōkyō /kuzu/ 屑 ‘scrap’ and /kuzu/ 葛 ‘kudzu’ are homonyms, but their pre-reform kana spellings were different: ⟨くづ⟩ versus ⟨くず⟩, reflecting earlier [kudzu] versus [kuzu]. These two words have the same modern kana spelling: ⟨くず⟩. The discussion of ⟨j⟩ and ⟨z⟩ in §4.6, in connection with the romanization system that Lyman (1878) proposed for Japanese, provides more information about these mergers and the modern Tōkyō pronunciations of the sequences involved.

10 Yoshida and Inokuchi (1962:667–684) reproduce the complete text of the 1946 cabinet proclamation.

11 Since non-linguists would not understand the term *rendaku*, as noted above in §1.1, the proclamation describes these exceptional cases as ⟨づ⟩ (*tsu*^u) and ⟨ぢ⟩ (*chi*^u) that “arise when two words are combined.”

12 Maeda (1977) points out that /sakazuki/ 杯 ‘wine cup’ is historically a compound.

13 Sanseidō Henshū-jo (1997) lists nine words ending in the voiceless allomorph /cuki/ of this obsolescent morpheme, but the only one of these words that is at all likely to be in the vocabulary of a present-day speaker is this /taka+cuki/. This word is the only one of the nine that appears as a headword in Watanabe, Skrzypczak, and Snowden (2003) (a large, authoritative Japanese-English dictionary) and in *NHK*.

14 This etymology (‘rice-plant spouse’) for /inazuma/ 稲妻 ‘lightning’ is from *Daijirin*.

15 The 1946 proclamation does not cite /sakazuki/, /cumazuku/, or /inazuma/ as examples, but lexicographers adopted ⟨ず⟩ (*su*^u) for /zu/ in all three. The 1986 proclamation cites all three in connection with a more careful statement of the principle involved: “In regard to items like the following, which are generally not felt to contain two words in the modern language, the basic principle is to use [⟨じ⟩ (*shi*^u) for /ji/ and ⟨ず⟩ (*su*^u) for /zu/], but it is also possible to write them with [⟨ぢ⟩ (*chi*^u) for /ji/ and ⟨づ⟩ (*tsu*^u) for /zu/]. . . .” The list that follows this statement includes /sakazuki/, /cumazuku/, and /inazuma/.

16 The word-processing software that came with an older version (9.1.4) of the Macintosh operating system converted ⟨いなずま⟩ (*i na su*^u *ma*) to ⟨稲妻⟩ with one push of the conversion

key. In response to 〈いなづま〉 (*i na tsuⁿ ma*), the first push of the conversion key produced 〈否妻〉, but with the two kanji treated as separate elements rather than as a single word. A second push of the conversion key replaced 〈否〉 with 〈稲〉. Since the software's conversion dictionary cannot list all possible compounds, this kind of experience is nothing out of the ordinary, and it is very unlikely to cause a typical user to suspect that there is something wrong with the spelling 〈いなづま〉. Newer versions of the Macintosh software convert both 〈いなづま〉 and 〈いなづま〉 directly to 〈稲妻〉.

17 Hangeul spellings of Japanese words in Korean materials dated 1492 and 1636 corroborate the Rodrigues account (Morita 1977:260–261; Martin 1987:22–24).

18 It seems very likely, as Frellesvig (2010:35) proposes, that the OJ consonants corresponding to modern voiceless obstruents were allophonically voiced word-medially (i.e., intervocally). This is why Frellesvig refers to the two OJ obstruent series as *mediae* (instead of voiced obstruents) and *tenues* (instead of voiceless obstruents). Despite the fact that the more familiar labels are potentially misleading, I have opted to retain them in this book, but there is no question that the distinctive feature in OJ was prenasalization, not voicing (Hamano 2000).

19 Hashimoto (1932:5–6) suggests some earlier examples that seem to be explainable in the same way as the one in Figure 1.1, and Frellesvig (2010:42–43) also lists a few.

20 *NKD* lists both /suzuri/ and /sumi+suri/ as headwords, and it describes /suzuri/ as a “contraction” (*ryaku* 略) of /sumi+suri/ and /sumi+suri/ as an “old name” (*koshō* 古称) for /suzuri/.

21 If we assume that the uncontracted form [sumisuri] and the contracted form [sūⁿ(d)zuri] coexisted for a time, and that the proportion of contracted forms gradually increased, this change from EMJ/sumi+suri/ to EMJ/suzuri/ is an instance of what Blevins (2004:33) calls “choice.” The greater frequency of the contracted form would lead new learners to choose the contracted form as the prototype and consequently to adopt a phonemic form different from the one adopted by their ancestors.

22 *Jōdai* (p. 641, s.v. ふみた) gives a similar sequence for the ancestor of ^{MT}/fuda/ 札 ‘card, tag’. The accepted etymology (Martin 1987:416) is ^{OJ}/pumi/ ‘writing’ + ^{OJ}/ita/ ‘board’ > ^{OJ}/pumita/ ‘piece of wood or paper with writing on it’, with the expected deletion of one of two consecutive vowels (Frellesvig 2010:39–40). If we take the *Jōdai* transcriptions as phonetic and replace [f] with [p] in the first four (see §1.1 and Chapter 1 note 4 above), the sequence is: [pumiita] > [pumita] > [pumta] > [pūda] > [fuda]. Since the vowel sequence [ii] in [pumiita] (the first form in the sequence) was phonotactically prohibited in OJ, this form would have to be pre-OJ if it ever existed. The second form, [pumita], is the inferred pronunciation of ^{OJ}/pumita/. Although *Jōdai* lists this compound as a headword, it does not actually occur in OJ texts, although it is attested phonographically in the early 9th century. The third form, [pumta], shows vowel deletion but not the expected vowel nasalization preceding a coda nasal consonant. The fourth form, [pūda], implies that prenasalization was manifested as vowel nasalization alone, with no nasal consonant transition preceding the following voiced obstruent, but it is presumably intended as the pronunciation of ^{OJ}/puda/, which I would transcribe as [pūⁿda]. This contracted form also appears as a headword in *Jōdai*, but it is not attested phonographically in OJ texts (see Chapter 1 note 31 below). The last form in the sequence, [fuda], is presumably intended to represent the pronunciation of ^{MT}/fuda/, which I would transcribe as [ɸuɖa]. Despite these differences between the *Jōdai* sequence and the sequence in Figure 1.1, the understanding of the phonological change is essentially the same.

23 Martin (1987:125) says that coda nasals were well established in the colloquial language by 1200, so it eventually did become possible to reinterpret a phonetic sequence of a nasalized

vowel (V̄) followed by a nasal consonant (N) followed by a voiced obstruent (D) as involving an underlying (i.e., phonemic) nasal consonant: [V̄ND] </VND/. Consequently, later instances of the same kind of phonetic reduction led in many cases to what is traditionally called *onbin* 音便 ‘euphonic change’, as in ^{EMJ}/yom-ite/ > ^{MT}/yoN-de/ 読んで ‘reading’. Frellesvig (2010: 185–199) provides a concise account of *onbin* phenomena, and he notes the relevance of the development of phonemic coda nasals: “Some examples in OJ of syllable loss seem to involve the same kind of phonetic reduction as was involved in *onbin*. . . The main difference between the developments . . . is that no moraic phoneme arose in the examples from OJ. . . This suggests that the phonetics which in the transition between OJ and EMJ gave rise to *onbin* already were a feature of OJ” (Frellesvig 2010:198).

24 Like Okimori (2010:245), I assume that EMJ had a more rounded high back vowel than modern Tōkyō Japanese, but this assumption is unimportant here.

25 Old Japanese /b d g z/ did not occur word-initially in inherited vocabulary. Frellesvig and Whitman (2008b:3) and Frellesvig (2010:43–44) argue that all instances of these phonemes in native OJ words go back to earlier (i.e., prehistoric) NT or NVT sequences.

26 The compound ^{OJ}/asa+gwiri/ appears as a headword in *Jōdai*, as do both its elements, ^{OJ}/asa/ and ^{OJ}/kwiri/. All three are attested phonographically (see Chapter 1 note 31 below).

27 Old Japanese forms are transcribed phonemically according to the system proposed by Frellesvig and Whitman (2008b:2–5).

28 Kupchik (2012) argues that the Eastern Old Japanese poems recorded in the *Man’yōshū* provide evidence that this kind of NVT to D contraction was an optional synchronic process in the eastern dialects and that poets could exploit it to shorten a line and make it fit the meter.

29 Many historical linguists reconstruct a pre-OJ vowel system in which the ancestor of OJ/o/ in most words was pronounced something like [ə] (Frellesvig and Whitman 2008a:16).

30 Frozen N+/no/+N combinations in modern Tōkyō Japanese are not true phrases syntactically. For instance, it is possible to insert an adjective before the second noun in a true N no N phrase, as in *te no akai aza* 手の赤いあざ ‘red mark on the hand’, but **te no akai hira* 手の赤い平 ‘red palm of the hand’ is ungrammatical. Also, accent dictionaries (*NHK, Meikai*) give /te+no⁺+hira/ as an alternative alongside /te⁺+no+hira/. In a syntactically formed phrase with *te no* modifying a following noun, the accent would have to be initial: /te⁺+no/+X. A “phrase” like *te no hira* is clearly what Di Sciullo and Williams (1987:1) would call a “listeme.”

31 The examples in Table 1.3 are all attested in phonograms in extant copies of 8th-century texts. The kanji used phonographically in OJ texts are called *man’yōgana* 万葉仮名, because they were used to write the phonographic portions of the 8th-century *Man’yōshū* 『万葉集』 poetry collection, and for the most part they represented Japanese pronunciation syllable by syllable (Lange 1973:9–20; Seeley 1991:40–58; Okimori 2006; Frellesvig 2010:14–16). Many OJ words are attested only in kanji used logographically, which means that there is no direct evidence for how they were pronounced. Of course, since we only have later copies of the principal OJ texts, the phonogram representations were susceptible to copying errors and misguided “corrections” by later scribes. The Oxford-NINJAL Corpus of Old Japanese (<https://oncoj.ninjal.ac.jp>) makes almost all OJ texts publicly available in searchable electronic form and thus enables thorough checking of the attestations of most OJ vocabulary items.

32 Martin (1987:432) and the entries in *NKD, Kōjien*, and *Daijirin* all say that the semantic basis for this compound meaning ‘maple’ is the resemblance in shape between a frog’s foot and a maple leaf. Its modern Tōkyō descendant is ^{MT}/kaede/ 楓 ‘maple’, which seems to have developed *rendaku* by analogy with other words ending in the same morpheme and then lost

its penultimate syllable, leaving it semantically opaque. There is no doubt that ^{MT}/kaede/ is synchronically monomorphemic.

33 This word meaning ‘jewel-like hand’ has not survived into modern Tōkyō Japanese. The first element, ^{OJ}/tama/ ‘jewel’, was frequently added to nouns as a kind of honorific. Rendaku never appears after the modern Tōkyō honorific prefix /o/ (Vance 2015a:432), and the same was true of the OJ honorific prefix ^{OJ}/mi/, but ^{OJ}/tama/ did not inhibit rendaku.

34 The phrase ^{OJ}/kwo+no+te/ is attested only as the first part of this tree name. The modern Tōkyō descendant of the tree name is ^{MT}/ko+no+te+gašiwa/ 児の手栢, with rendaku in the last element (cf. ^{MT}/kašiwa/ ‘oak’), and the definition in Table 1.3 (‘oriental arbor-vitae’) is the species that that modern name denotes. According to the entry in *Jōdai*, it is not clear whether the OJ name actually denoted the same species. The semantic motivation for the name was presumably a perceived resemblance between the leaves of whatever tree species it was and children’s hands. Although ^{MT}/kašiwa/ is etymologically a compound (Martin 1987:441), as indicated by the morpheme boundary in Table 1.3 (cf. ^{OJ}/kasi/ ‘oak’ and ^{OJ}/pa/ ‘leaf’), ordinary present-day speakers think of it as monomorphemic. It would have been less troublesome to use the *Jōdai* headword corresponding to the modern Tōkyō frozen phrase ^{MT}/oku+no+te/ 奥の手 ‘ace up one’s sleeve’, but the OJ item is not attested in phonograms.

35 All the OJ words cited in this paragraph are attested in phonograms, but we have to keep in mind that the distinctions between voiceless and (prenasalized) voiced obstruents were sometimes ignored in *man’yōgana* spellings (Seeley 1991:80; Frellesvig 2010:162–163). Martin (1987:103–104) notes that reduplicated words written without rendaku might actually have had rendaku that is not reflected orthographically because the spelling is morphophonemic (i.e., represents the same morpheme the same way regardless of pronunciation), but he tentatively accepts the semantic distinction between ^{OJ}/toki+doki/ and ^{OJ}/toki+toki/ and suggests that they might be contractions of earlier ^{pre-OJ}/toki ni toki/ and ^{pre-OJ}/toki to toki/ (cf. ^{MT}/to/ ‘and’). Incidentally, this pair conforms to Labrune’s (2012:118) claim (about modern Tōkyō Japanese) that a reduplicated noun in which rendaku is possible does not necessarily have rendaku if the meaning is “distributive” (see Chapter 7 note 121).

36 The source for the OJ item corresponding to ^{MT}/macuge/ ‘eyelash’ is a copy of *Daihannyakyō ongi* 『第般若經音義』 that the editors of *Jōdai* judge to be faithful to OJ pronunciation (*Jōdai*:881), but the final syllable is represented by ⟨奇⟩, which was otherwise used for ^{OJ}/ki/.

37 The consonant in the etymological genitive particle itself is voiced in ^{OJ}/mwi+du+kara/ ‘oneself’ (cf. ^{OJ}/mwi/ ‘body’, ^{OJ}/kara/ ‘character’), ^{OJ}/ono+du+kara/ ‘of its own accord’ (cf. ^{OJ}/ono/ ‘self’), and ^{OJ}/te+du+kara/ ‘with one’s own hands’ (cf. ^{OJ}/te/ ‘hand’). The corresponding modern forms (/mizukara/ 自ら, /onozukara/ 自ずから, /tezukara/ 手ずから) invite present-day speakers to analyze /zukara/ as an element, and it seems likely that even OJ speakers would not have seen a connection between ^{OJ}/du/ in ^{OJ}/du+kara/ and genitive ^{OJ}/tu/. There is no obvious historical explanation for the ^{OJ}/d/ in these three items ending in ^{OJ}/du+kara/, but it does not look like rendaku.

38 Maekawa (2010) reports meticulous, corpus-based research on the distribution of the allophones of /z/. There is a brief discussion of this question in §4.6 in connection with ⟨z⟩ in the romanization system that Lyman (1878) proposed for Japanese.

39 Miyake (1932:136) gives the relevant quotation from Ishizuka’s *Kogen seidaku kō* 『古言清濁考』, which was published in 1801. Maeda (2007a) provides a brief description of this work. As explained in §2.4, Motoori seems to have discovered (the weak version of) Lyman’s Law before Lyman.

40 *Jōdai* lists ^{OJ}/kuzu+pa+gata/ as a headword, and the entry gives a citation from the *Man'yōshū* written (久受葉我多). The (葉) representing ^{OJ}/pa/ could be either a phonogram for ^{OJ}/pa/ (*Jōdai*:898) or a logogram (cf. ^{MT}/ha/~ba/ 葉 'leaf'), but the other four characters are unambiguously phonograms, so we can be confident of the pronunciations ^{OJ}/kuzu/ and ^{OJ}/gata/. It is very unlikely that (葉) was a logogram representing ^{OJ}/ba/, since ^{OJ}/kuzu+ba/ would be an obvious violation of the strong version of Lyman's Law construed as a local effect. *Jōdai* also lists a structurally parallel headword, ^{OJ}/naga+naki+dori/ 'chicken' (cf. ^{OJ}/naga/ 'long', ^{OJ}/naki/ 'crying', ^{OJ}/tori/ 'bird'), but since it is not attested in phonograms, we cannot be sure that it had *rendaku*.

41 Unger (1975:8) says there are "few if any [OJ] morphemes which can definitely be said to contain three or more syllables." His current view (from a January 2013 e-mail message) is that ". . . we should not casually assume that OJ morphemes of three or more syllables were monomorphemic historically: most long OJ words are inflected verb or adjective forms; many nouns are compounds etymologically; some longish words are surely borrowings from Old Korean . . ."

42 *NKD* lists obsolete ^{MT}/kazari+guši/ 飾串 'decorative pin' as a headword, but the corresponding OJ word is not attested in phonograms, so we do not know for sure if it had *rendaku* (cf. ^{OJ}/kazari/ 'decoration', ^{OJ}/kusi/ 'pin'). The *NKD* entry gives a logographic citation from *Nihon shoki* 『日本書紀』 (720), but this compound is not listed as a headword in *Jōdai* and does not appear in the Oxford-NINJAL Corpus of Old Japanese (see Chapter 1 note 31 above). OJ verb elements like ^{OJ}/kazari/ are more likely than noun elements to be three syllables or longer. In modern Tōkyō Japanese, a deverbal noun derived from a simplex verb functions for all practical purposes like a single morph (see §7.4.2 and also the commentary on Lyman's subsection 3[b] in the Appendix). I assume that the same can be said of corresponding elements in OJ, so I do not divide ^{OJ}/kazari/ into a stem and an ending here.

43 Of all the proper names ending in ^{OJ}/pikwo/ 'prince' or ^{OJ}/pimye/ 'princess' (etymologically a compound of ^{OJ}/pi/ 'sun' and ^{OJ}/mye/ 'female') that are attested phonographically in *Kojiki*, Suzuki (2017:36) says that none has *rendaku* when there is a voiced obstruent in the final syllable of the first element. If the Right-Branch Condition (§7.2.3) held in OJ, we might expect that ^{OJ}/pi+kwo/ or ^{OJ}/pi+mye/ would never show *rendaku*, but the Right-Branch Condition is suspect, and even if it were not, these two elements could presumably be construed as "strict" compounds. In any case, many of the examples that Suzuki cites do have *rendaku*, although a majority do not. The *Kojiki* attestations for these proper names are in the main body of the text, not in the poems. The main body is written in a kind of Japanized Classical Chinese known as *hentai-kanbun* 変体漢文, which is almost entirely logographic except for Japanese proper names written in phonograms. The Oxford-NINJAL Corpus of Old Japanese (see Chapter 1 note 31 above) includes only the poems, which are written in OJ represented phonographically. As a result, proper names like ^{OJ}/nagisa+bikwo/ do not appear in the Oxford-NINJAL corpus.

44 The sole phonographic attestation of ^{OJ}/madara+busuma/ is in *Man'yōshū* (ca. 760), and the phonograms for the two obstruent-initial syllables in E2 ((夫) for ^{OJ}/bu/ and (須) for ^{OJ}/su/) are unambiguous, but the phonogram for the second syllable in E1 ((太) is ambiguous, sometimes representing ^{OJ}/ta/ and sometimes representing ^{OJ}/da/ in *Man'yōshū*. The headword in *Jōdai* for E1 as an independent word is given as ^{OJ}/madara/, but it is not attested phonographically. Later phonographic attestations (from Middle Japanese) all have a voiced obstruent in the second syllable, matching ^{MT}/madara/. It is thus very unlikely that the compound was pronounced ^{OJ}/matara+busuma/. If it was, it is irrelevant here.

45 The sole attestation of ^{OJ}/ni+tutuzi/ ‘red azalea’ has E2 written (管土), and the sole attestation of ^{OJ}/ipa+tutuzi/ ‘rock azalea’ has E2 written (乍自), each spelling beginning with an unusual two-syllable phonogram for ^{OJ}/tutu/. The second phonograms, (土) and (自), both represent ^{OJ}/zi/ unambiguously.

46 There is actually one small sector of the modern Tōkyō lexicon that tends to conform to the strong version of Lyman’s Law. Sugitō (1965) notes that in surnames consisting of two short syllables followed by /ta/~da/ 田 ‘rice paddy’ the /da/ allomorph is common, as in /ima+da/ 今田, but only /ta/ occurs when the preceding syllable begins with a voiced obstruent, as in /šiba+ta/ 柴田. Kubozono (2005:7–11) provides more details about these examples. Zanma and Asai (2017) report research on the behavior of other E2s in surnames.

47 There are four phonographic attestations of ^{OJ}/ipye+tutwo/~/ipye+duwto/, all in *Man’yōshū* (ca. 760). The E2-initial syllable is written with unambiguous (都) (= ^{OJ}/tu/) in two cases, with unambiguous (頭) (= ^{OJ}/du/) in one case, and ambiguous (豆) in one case. Of course, as noted above in Chapter 1 note 31, we can never be completely sure that a phonogram spelling accurately reflects actual OJ pronunciation.

Chapter 2

1 The biographical information in §2.1 comes from many readily available sources, including a book (Kuwada 1937), two journal articles (Fukumi 1990a, 1990b), several biographical dictionary entries (“Lyman, Benjamin Smith.” 1888. In *Appletons’ Cyclopædia of American Biography*, Vol. 4. New York: D. Appleton and Company; “Lyman, Benjamin Smith.” 1899. In *The National Cyclopædia of American Biography*. Vol.9. New York: James T. White & Company; “Lyman, Benjamin Smith.” 1908. *Who’s Who in American 1908–1909*. Chicago: A. N. Marquis & Company), and two newspaper articles (“Benjamin S. Lyman, Noted Geologist, Dead.” 1920. *New York Times*, August 31; “Benjamin Smith Lyman Collection of Over 4000 Books Given to Forbes.” 1922. *Daily Hampshire Gazette*, April 15).

2 It took some effort to trace enough of Lyman’s family tree to establish his exact relationships with Sophia Smith and Sara Ann Delano Roosevelt, but Internet sources made it possible.

3 My friend Wes Jacobsen, who teaches in the Department of East Languages and Civilizations at Harvard, put me in touch with the registrar’s office there. The people in the office were kind enough to confirm that no transcripts exist and to send me a photocopy of the student handbook for Lyman’s cohort.

4 Kuwada (1937:9) quotes a letter in which Lyman mentions his dissatisfaction with teaching.

5 In a biography of Lesley, Davis (1915:200–201) notes that he was quite an amateur philologist, which makes it plausible to imagine that he helped to foster Lyman’s interest in language as well as in geology.

6 According to the catalog for a special exhibit of Lyman Collection materials at the Historical Museum of Hokkaidō (Hokkaidō Kaitaku Kinenkan 1995:2), Lyman trained 13 assistants who went on to make important contributions to the development of mining in Japan.

7 The photograph in Figure 2.1 is from the Lyman Collection (see §2.2). The digital version, used here with permission, is available from the Credo online repository of the University of Massachusetts Amherst Libraries’ Department of Special Collections and University Archives.

8 I took the photograph in Figure 2.2 during my visit to the Lyman Collection in 2007 (see the Preface for a brief account of that visit). When Tōkyō was divided into wards (*ku* 区) in 1878,

Hirakawa-chō became part of Kōjimachi-ku 麹町区 (Kadokawa Chimei Daijiten Hensan linkai 1988:617). Kōjimachi-ku and Kanda-ku 神田区 were merged to form Chiyoda-ku 千代田区 in 1947. On the letter addressed to Lyman, *kawa* is written with the kanji (川), but *Hirakawa-chō* is now written (平河町). Alumni of the Inter-University Center for Japanese Language Studies who attended before the 1987 move to Yokohama will remember Hirakawa-chō as the area immediately to the east of Kioi-chō 紀尾井町. The IUC was housed in the Nihon Nōgyō Kenkyū-jo 日本農業研究所 in Kioi-chō.

9 This 1879 article from the *Chōya Shinbun* is reprinted in Yokose (1928:178). The English translation is mine.

10 Before the Meiji Restoration of 1868, Tōkyō was called Edo 江戸, and the long period during which the Tokugawa shoguns were the de facto rulers of Japan (1600–1868) is often called the Edo period.

11 Many people I have spoken to about Lyman over the years have suggested that he was gay, but given the prevailing attitudes about such matters during his lifetime, it is hard to imagine any way of verifying this possibility. On the other hand, according to Hokkaidō Kaitaku Kinenkan (1995:23), Lyman fell in love with a student at the Development Bureau Girls' School and wanted to marry her but for some reason did not. The student was Hirose Tsune 広瀬常 (1855–?), and in 1875 she married Mori Arinori 森有礼 (1847–1889). Mori had been the first Japanese ambassador to the United States, and he later became the Minister of Education.

12 This assessment of Lyman's Japanese language ability is from Hokkaidō Kaitaku Kinenkan (1995:22). According to Yanaike (1991:89), the sources that Lyman cited in an article ("An Old Japanese Standard Foot Measure," *Proceedings of the Numismatic and Antiquarian Society of Philadelphia, 1887–89*, 68–76, 1891) show that Lyman was able to read *kanbun* 漢文 (a variety of Classical Chinese used in Japan for formal writing for many centuries), but such citations cannot be taken as conclusive evidence, since Lyman's well-educated Japanese acquaintances could have helped him with *kanbun* texts.

13 The Northampton house that Lyman lived in following his return from Japan has been remodeled and is now a Smith College dormitory called Park House.

14 The photograph in Figure 2.3 is from the Lyman Collection (see §2.2). The digital version, used here with permission, is available from the Credo online repository of the University of Massachusetts Amherst Libraries' Department of Special Collections and University Archives.

15 The Lyman Collection does not contain all of Lyman's papers. Some were donated to the American Philosophical Society, and some to the Pennsylvania Historical Society (Hokkaidō Kaitaku Kinenkan 1995:3). The books that were not related to Japan or China remained at the Forbes Library.

16 Fukumi's two articles appeared in a geology journal aimed at general readers (Fukumi 1990a, 1990b).

17 Yanaike (1991:85–86) gives a brief outline of the contents of Lyman's 1878 article. Yanaike's (1991:89) list of Lyman's publications related to the Japanese language contains one more item: "The Nature of the Japanese Verb, So-called," *Proceedings of the American Philosophical Society*, 51 (no. 204), 91–102, 1912. Yanaike (1991:85) provides a brief summary of this 1912 article, but I will have nothing to say about it in this book.

18 The historian Harry Harootunian (1988:1) translates *kokugaku* 国学 as *nativism*, but the conventional English translation is *national learning*. See, for example, the entry for *kokugaku* in *Japan: An Illustrated Encyclopedia* (Reischauer 1993:816–817).

19 The entire *Kojiki-den* is available in a four-volume paperback edition, and the quoted passage is in the first volume of that edition (Motoori 1940:203). The translation is mine. *Kojiki*

itself (dated 712) was written mostly in a kind of Chinese, but it contains Japanese poems, place names, and vocabulary items written phonographically (Frellesvig 2010:24).

20 Suzuki (2017:31) reports an even earlier statement of Lyman's Law by Kamo no Mabuchi 賀茂真淵 (1697–1769) in *Goi-kō* 『語意考』, which was completed in 1769 and published in 1789.

21 Ōno (1962:540) cites the same *Kojiki-den* passage as Miyake and writes in a footnote that Ogura mistakenly attributed the discovery of the constraint to Lyman (Ōno 1962:761, n.17). Martin (1987:93) says that Ogura “was taken to task” by Ōno, but this characterization makes Ōno's comment sound harsher than it seems to me. In any case, the point is that Ogura simply did not know about the earlier statement of Lyman's Law.

Chapter 3

1 The *Japan Weekly Mail* was published from 1870 until 1917 and was then absorbed by the *Japan Times* (“*Japan wikurī meiru dai-10-kai haihon*,” Edition Synapse, <https://www.aplink.co.jp/synapse/4-86166-141-9.html>).

2 *Exercises in the Yokohama Dialect*, first published in 1873, is a booklet treating a pidgin that developed in Yokohama in the early 1860s (Kaiser 2005). In 1953, Charles E. Tuttle Co. issued a reproduction of the revised and enlarged edition of 1879.

3 I will refer to this article (Porter 1866) several times in Chapter 4 in my commentary on Lyman's 1878 article. Samuel Porter (1810–1901) was a prominent figure in deaf education in the United States (“The Death of Prof. Samuel Porter,” *New York Times*, September 4, 1901). The article appeared in the *American Journal of Science and Arts*, which later became the *American Journal of Science*. The journal was often called “Silliman's Journal” because it was founded by Benjamin Silliman (1779–1864), a Yale professor who edited it himself in its early years (*Encyclopædia Britannica*, 11th ed., s.v. “Silliman, Benjamin”).

Chapter 4

1 The first two sections of this chapter (§§4.1–2) are based closely on a journal article (Vance 2012a).

2 It appears that Jan Baudouin de Courtenay and Henry Sweet developed the phonemic principle independently of each other in the late 19th century (Seuren 1998:144–145, 168).

3 Samuel Robbins Brown (1810–1880) came to Japan as a Christian missionary in 1859 and spent most of the next 20 years in Yokohama. In 1873 he founded the Brown Academy, which later became the Tokyo Union Theological Seminary and eventually part of Meiji Gakuin University (Beauchamp 1983a; Hatano 1985). The introductory material in Brown's 1863 textbook appears on unnumbered pages. His description of the Japanese vowels appears on the first page following the table of contents. James Curtis Hepburn (1813–1911) was an American Presbyterian missionary and medical doctor who lived in Japan from 1859 until 1892. Basic biographical information on Hepburn is readily available in encyclopedia entries (e.g., Beauchamp 1983b; Doi 1985).

4 Like the transcriptions for the Northampton speaker, those for speakers in nearby Springfield and Deerfield are also *r*-less (Kurath and McDavid 1961:40, 42).

5 Kurath and McDavid (1961:23) report that a well-educated Farmington speaker was interviewed for the *Linguistic Atlas of New England* (Kurath 1939–43), but they do not include transcriptions of this speaker's vowels. They do provide transcriptions for a speaker from nearby Middletown, Connecticut, who was interviewed at age 61 in 1931 (Kurath and McDavid 1961:24, 43), and this speaker's vowels are very similar to those of the Northampton speaker described above in §4.1 (Kurath and McDavid 1961:24, 41).

6 The Parisian speaker described by Fougeron and Smith (1999:78–79) has only one low vowel phoneme, which they transcribe as [a], but they note that some speakers maintain a contrast between [a] and [a]. Dictionaries of modern French (e.g., Cousin et al. 1988) typically treat a variety that maintains the distinction as the standard and transcribe *âme* with [a] and *ami* with [a].

7 Pioneering research on the durational differences in American English vowels preceding voiced and voiceless codas was done by House and Fairbanks (1953:107–108) and by Peterson and Lehiste (1960:700).

8 The difference between [a] and [æ] is clear in the entries for *arm* and *ask* in modern dictionaries of American English (e.g., Barnhart 1947; Morris 1969).

9 In modern Tōkyō Japanese, accent has a negligible effect on the duration of short vowels (Beckman 1986:160–164).

10 *NHK* and *Meikai* agree on the modern Tōkyō accentuation of the words on Lyman's two lists. Unaccented /tacu/ 竜 'dragon' seems less likely for *tatsu*, since /ta⁺cu/ 'to stand' is much more frequent.

11 Final-accented /asa⁺/ 麻 'flax' for *asa* and unaccented /naru/ 鳴る 'sound' for *naru* seem less likely, since they are much less frequent.

12 French *jeûne* is one of the examples cited by Porter (1866:176–177), who described the vowel as one (quite long) step closer to the lips than [u] (i.e., the *oo* in *pool* and *moon*) on his constriction-location dimension, with rounding and degree 1 of openness.

13 These South Carolina speakers were interviewed between 1935 and 1946 (Kurath and McDavid 1961:27).

14 French *jeune* is another of the examples cited by Porter (1866:176–177), who described the vowel as one (quite long) step closer to the lips than [u] (i.e., the *u* in *pull* and the *oo* in *book*) on his constriction-location dimension, with rounding and degree 2 of openness.

15 The variety of French that Maurice Grammont described in the early 20th century preserves vowel length distinctions, and his examples include the near-minimal pair *tête* [tɛ:t] 'head' and *dette* [dɛt] 'debt' (Grammont 1914:37–38). The long vowel in *tête* may well have had a somewhat different aperture than the short vowel in *dette*, but we might expect the longer vowel to be higher rather than lower. Lyman's description of Japanese /e/ would make more sense if the longer vowel in *tête* had a higher tongue position than the shorter vowel in *dette*. It could be that he and Porter were simply mistaken about the longer vowel being more open.

16 Recent research on utterance-final ^{MT}/N/ (Hashi et al. 2014; Nogita and Yamane 2015) has shown that there is a great deal of unpredictable variability from speaker to speaker as to the place of articulation. The claim that the place of articulation is uvular for typical Tōkyō speakers (Vance 2008:96) is untenable.

17 There are other complications with verb citation forms ending VV/ru/ that I leave aside here (Vance 2008:165–166).

18 In the variety of modern Irish described by Ní Chasaide (1999), the apico-dentals are velarized.

19 Sawada (1974) and Reischauer (1993:1732) provide brief accounts of the Yamanote area.

20 I am grateful to Jim Unger for bringing to my attention the absence of *ts* from Lyman’s list of voiceless obstruents.

21 The original research on VOT (voice onset time) was done by Lisker and Abramson (1964).

22 Kawakami (1977:46) reports that some modern Tōkyō speakers are unable to pronounce [s] and produce [θ] instead.

23 Toki (2010:26–27) describes the allophone that occurs utterance-initially and following /N/ as [l]. This is not quite right, but [l] is a very good substitute in these environments. Of course, speakers of English dialects (like my own) that have uvularized “dark” [ɫ] (Sproat and Fujimura 1993:309) even syllable-initially may have some trouble producing a “clear” [l].

24 Overall, nouns of *n* syllables are nowhere near evenly distributed among the *n*+1 possibilities (Tanaka and Kubozono 1999:58–62; Kubozono 2006:10). For one thing, about half of all nouns are unaccented, and in nouns of more than three syllables, some of the *n*+1 theoretical possibilities are rare or nonexistent.

25 There are, however, some Tōkyō speakers who do maintain a distinction between final accent and no accent in phrase-final position (Uwano 1977:289; Sugitō 1982; Vance 1995).

26 Some linguists reject the idea of a further rise to an accented syllable (sometimes called an “accentual boost”) and instead have a level or slightly declining pitch between μ_2 and μ_a in the left panel of Figure 4.1.

27 As noted later in this section, Brown (1863), on the third (unnumbered) page following the table of contents in his textbook, said that the difference between the words for ‘chopsticks’ and ‘bridge’ was not a matter of accent but “the suppression of the final *i*” in the former (corresponding to ^{MT}/ha⁺ši/, with initial accent) but not in the latter (corresponding to ^{MT}/haši⁺/, with final accent).

28 Yamada (1893) labeled unaccented words *zenpei* 全平 ‘all level’ and specified a high mora in accented words with a number, as in *dai-ichi-jō* 第一上 ‘1st high’ for /ha⁺ši/ 箸 ‘chopsticks’ and *dai-ni-jō* 第二上 ‘2nd high’ for /haši⁺/ 橋 ‘bridge’. The modern Tōkyō forms in Table 4.1 are those listed both in *NHK* and in *Meikai*. The modern Kyōto forms are those listed by Hirayama (1960).

29 Of the 16 words in Table 4.2, 10 (5 pairs) are listed by Yamada (1893), and Yamada’s accent specifications match the modern Tōkyō forms in the table in all 10 cases. The modern Tōkyō forms are those listed both in *NHK* and in *Meikai* except for /kasa/ 瘡 ‘eruption’, which is now obsolescent and is not listed in *Meikai*. The modern Kyōto forms are those given by Hirayama (1960) except for *uchi* 打ち ‘hitting’ (LF) and *mushi* 蒸し ‘steaming’ (HL), which Hirayama does not list. The pattern on the verb form *uchi* is inferred from the corresponding inflectional form of other verbs in the same accent class listed by Nakai (2002:295). The pattern on the noun *mushi* is the older form that Nakai (2002:84) gives for this item.

30 Like Hepburn, Lyman used the *ren’yōkei* 連用形 ‘adverbial form’ of a verb as its citation form. We can infer that Lyman intended the noun (^{MT}/muši⁺/) rather than the segmentally identical verb form (^{MT}/mu⁺ši/) in Table 4.2 because he defined *uchi* (in the preceding pair) as ‘to strike’ but *mushi* as ‘steaming’.

31 Brown’s brief remarks on accent appear on the third (unnumbered) page following the table of contents in his 1863 textbook.

32 As Toyama (1972:188–189) and Frellesvig (2010:397) note, [çe] apparently had already shifted to [se] in the Kantō region (which includes present-day Tōkyō) by the early 17th century, since the Jesuit missionary Rodrigues mentions [se] as a Kantō characteristic in his *Arte da lingoa de Iapam* (1604–08). The shift from [çe] to [se] in Kyōto was much later but is hard to date

precisely. It is quite possible that it was still in progress when Hepburn was writing (Toyama 1972:243).

33 Vance (2008:165–166) provides a brief discussion of apparent exceptions to this generalization about accented citation forms of verbs.

34 Vance (2008:162–180) presents an introductory survey of the accentuation of verb and adjective forms.

35 The *ren'yōkei* ‘adverbial form’ of a verb is sometimes called the infinitive (Bloch 1946:6) or the continuative (Kuno 1973:195) in English.

36 Recent loanwords consisting of two short syllables, like /pi⁺za/ ピザ ‘pizza’, also tend to have initial accent in modern Tōkyō (Kindaichi and Akinaga 2014[appendix]:20), but such items were a negligible part of the vocabulary when Hepburn was writing.

37 Brown’s remarks on accent appear on the third (unnumbered) page following the table of contents in his 1863 textbook.

38 Most present-day Tōkyō speakers have no problem allowing a syllable with a devoiced vowel to carry accent (Nihon Onsei Gakkai 1976:748; Tsuchida 1997:23–27; Kitahara 1998; Hibiya 1999:120).

39 Yamada (1893) did not list *ikō* or *yosasō*.

40 According to Hirayama’s (1960) entry, the corresponding modern Kyōto word is also unaccented (HHHH), so Kyōto speakers presumably could not have been the source of Hepburn’s claim that *yū-meshi* had initial accent.

41 To be fair, there may well be something to the intuition that homophonous words with different spellings must be pronounced differently (at least in some cases) in the sense of exemplar theory, that is, a different statistical distribution of allophones. For example, Gahl (2008) shows that the frequent English word *time* has, on average, a shorter duration than the infrequent word *thyme*, even though both would have the same phonemic transcription and would be considered homonyms in the traditional sense.

42 Brown’s account, on the third (unnumbered) page following the table of contents in his 1863 textbook, is not detailed enough for us to be absolutely sure that he meant to claim that all segmentally identical words differed in accentuation, but this interpretation is certainly a natural one.

43 Yamada’s (1893) entry gives only the equivalent of /ana⁺ta/, although it provides both meanings.

44 It was not only foreigners who were proposing a Roman-alphabet-based writing system for Japanese in the Meiji period. As Seeley (1991:139–140) points out, Nanbu Yoshikazu 南部義籌 (1840–1917) endorsed such a system in a book published in 1869, and the *Rōmaji-kai* ローマ字会 (羅馬字会), an advocacy organization, was founded in 1885. It is not clear exactly what Lyman had in mind when he mentioned “the three or more regular systems already set up,” but he obviously was not working in a vacuum.

45 Seeley (1991:136–187) and Twine (1991) provide accounts of the mid-20th-century orthographic reforms in Japan. Another point worth mentioning here is that many texts were still written in Classical Japanese in Lyman’s day, and the movement for *genbun-itchi* 言文一致 ‘unification of spoken and written language’ was just beginning to gather momentum (Twine 1978; Habein 1984:99–103). Frellesvig (2010:2) describes Classical Japanese as “the fossilized, relatively fixed written norm which arose largely out of the language of the twelfth century and which thereafter remained the dominant form of writing in Japanese until the beginning of the twentieth century.”

46 Frellesvig (2010:157–158) provides a concise account of how *kanji-kana-majiribun* developed historically.

47 Seeley (1991:104–125) provides an overview of how pre-modern kana spelling developed.

48 Yanaike (2003) provides an entertaining history of the shift to horizontal lines in Japanese writing.

49 Books by Unger (1987, 1996b) are among the best sources for arguments in support of the claim that the Japanese writing system is unreasonably burdensome.

50 Webster's (1828) representation of the headword *zoological* begins (ZŌO). The pronunciation key in the front matter explains that (Ō) represents a “long” vowel and (O) represents a “short” vowel, and the examples provided make it clear that the intended pronunciation of these two vowels was something close to modern /õ, ə/.

51 Brown's description of vowel devoicing appears on the second (unnumbered) page following the table of contents in his 1863 textbook.

52 It is not clear what Hepburn meant by “before” here. In his 1867 first edition, the word meaning ‘person’ is romanized (h'to), but the word meaning ‘two’ is romanized (futatsz).

53 This kind of superscript (l) is what Porter (1866:176) used to mark rounding.

54 The physicist Tanakadate Aikitsu 田中館愛橘 (1856–1952) proposed Japan-style romanization in 1885, and a 1938 cabinet directive (*naikaku-kunrei* 内閣訓令) designated a modified version of it as the official system (Koizumi 1993:354–355). This 1938 version, known as *kunrei-shiki* 訓令式 ‘directive style’ (commonly referred to in English contexts as *kunrei* style), continues to compete with Hepburn romanization to this day, much to confusion of most ordinary users.

55 The pre-reform kana spellings of syllables with long vowels, including /šoH/, /šuh/, /čoH/, and /čuh/, were much less consistent than they are today (Bunka-chō 1986:11–13). Possible spellings were (しゅう) (*shi yu u*), (しう) (*shi u*), and (しふ) (*shi fu*) for /šuh/, (しよう) (*shi yo u*), (しやう) (*shi ya u*), (せう) (*se u*), and (せふ) (*se fu*) for /šoH/, (ちゅう) (*chi yu u*) and (ちう) (*chi u*) for /čuh/, and (ちよう) (*chi yo u*), (ちやう) (*chi ya u*), (てう) (*te u*), and (てふ) (*te fu*) for /čoH/. Notice that some of these do not even begin with (し) (*shi*) or (ち) (*chi*).

56 The four kana letters (じぢずづ) (in hiragana) and the four phonemically distinct syllables that they used to represent are traditionally called *yotsu-gana* 四つ仮名 in Japanese linguistics. Kindaichi, Hayashi, and Shibata (1988:951), Satō (2004:1157), and Matsumoto (2007b) provide brief introductions, including information on dialects that preserve the distinctions.

57 Seeley (1991:139–140) and Hachiya (2007:384) provide basic information on Hepburn romanization and the Rōmaji-kai. There were a few differences between Hepburn's 1886 romanization and the system recommended by the Rōmaji-kai, and I will describe these in §5.1.

58 This example sentence from Brown (1863:24) illustrates his consistent romanization of [ŋ] as (ng): 189. *Have you any work for me to do Sir?* Da-n-na wa-ta-k'-shi no i-ta-sz shi-ngo-to nga go za-ri-ma-s' ka? ダンナワタクシノイタスシゴトガゴザリマスカ

59 This way of characterizing the linguistic variants available to a community of speakers as a “population” is due to Mufwene (2001:4–6).

60 Modern Tōkyō Japanese has three easily distinguishable degrees of phonetic length in nasals: short in /koma/ [koma] 独楽 ‘(toy) top’, long in /koNpa/ [kōm:pa] コンパ ‘party’, and very long in /koNma/ [kōm::a] コンマ ‘comma’. There are only two degrees in obstruents, but longer obstruents are comparable to very long nasals, so I transcribe them with double [:], as in /kako/ [kako] 過去 ‘past’ versus /kaQko/ [kak::o] 括弧 ‘bracket’.

61 Isei-Jaakkola (2004:17) says, “there seems to be no re-articulation during the occlusion” in /N/C or /Q/C sequences.

62 The phonetic realization of “voiced geminates” in words like ^{MT}/uQdo/ is a complicated issue (Arisaka 1940:94; Kawakami 1977:90; Koo and Homma 1989; Kawahara 2006:538–539).

63 Vance (1987:155–164) provides an introductory discussion of CV~/Q/ alternations in Sino-Japanese morphemes. Hepburn (1872) also listed a headword corresponding to ^{MT}/seQ:keN/ 石鹸 ‘soap’, but he mistakenly provided the katakana spelling (セツケン) (*se tsu ke n*). The first element in this word is the morpheme meaning ‘stone’, and the correct katakana spelling was (セキケン) (*se ki ke n*). The error remained uncorrected in his third edition (Hepburn 1886).

64 Frellesvig (2010:316–319) provides a good account of how the Sino-Japanese CV~/Q/ alternations and their kana spellings developed historically.

65 In my textbook treatment (Vance 2008:84) I categorized /tu/ as a foreignism, but I hinted in an exercise in the same book (Vance 2008:94) that this categorization was open to challenge. The Brazilian-born soccer star Marcus Tullio Tanaka, who played for the Japanese national team, provides another widely-used instance of /tu/, since the name he goes by is always pronounced /turio/.

66 In Kyōto, /wi/ and /i/ had merged as /i/ and /we/ and /ye/ had merged as /ye/ by 1200 (Tsukishima 1964:29; Okumura 1972:99–102; Martin 1987:11). Frellesvig (2010:207) says these mergers were complete by about 1100 word-medially but not until about 1300 word-initially.

67 See note 66 just above on the dates of the /ye~/we/ merger. Phonemically, Frellesvig (2010:208–210) analyzes both the result of the earlier merger of /ye/ with onsetless /e/ and the result of the later merger of /ye/ with /we/ as /e/, but he agrees that it was phonetically [je].

68 Brown’s katakana chart appears on the fourth unnumbered page following the table of contents. He used ⟨e⟩ almost exclusively throughout his textbook, but there are a few instances of ⟨ye⟩, and for one item in his English-Japanese glossary, he gave both both: “Rich, (said of soil). Koete, or Koyete” (Brown 1863:230).

69 The claim that ⟨ㄨ⟩ and ⟨ㄨ⟩ did not represent different sounds appears in all of the first three editions of Hepburn’s dictionary (Hepburn 1867: x, 1872: xi, 1886: ix).

70 In his second edition, Hepburn (1872: xiv) wrote, “Sometimes, for the sake of uniformity, and to render the dictionary more easy of consultation, a *y* has been written before *e* where it was not called for, as in *hayeru*, *miyeru*.” In the third edition (Hepburn 1886: xiii), he wrote, “But in words derived from the Chinese, where the second syllable commences with ㄨ or ㄨ, the *y* is still retained, as being preferable to the hyphen; thus *ri-en*, *san-etsu*, *sho-en* are written *riyen*, *sanyetsu*, *shoyen*.” It is not clear whether “preferable” means that Hepburn thought the pronunciation was [je] immediately following a vowel or a moraic nasal in Sino-Japanese words.

71 In the Japanese-Portuguese dictionary of 1603–04 (Doi et al. 1980), the headword meaning ‘sulfur’ is romanized ⟨iuō⟩, which indicates that it was pronounced [iwo:] in Kyōto at the time (Late Middle Japanese). Long [o:] was the regular reflex of the earlier diphthong [au] and was phonemically distinct from long [o:] in LMJ (Frellesvig 2010:319–320). These two long vowels have merged as /oH/ in modern Tōkyō Japanese.

72 Some scholars give 1200 as an approximate date for the merger of /wo/ and onsetless /o/ as /wo/ in Kyōto (Tsukishima 1964:29; Okumura 1972:99–102; Martin 1987:11), but Frellesvig (2010:207) says it was completed by around 1000. Frellesvig (2010:208–210) interprets the result of the merger as /o/ phonemically, but he agrees that it was phonetically [wo].

73 Brown’s katakana chart appears on the fourth unnumbered page following the table of contents. He provided katakana for all his example sentences, but his katakana spellings often do not conform to pre-1946 norms and are sometimes inconsistent. For example, he had ⟨オトコ⟩

(*o to ko*) instead of historically correct (ヲトコ) (*wo to ko*) (Brown 1863:22; cf. ^{MT}/otoko/ 男 ‘man’), and he had (ナオル) (*na o ru*) for one inflectional form of a common verb (Brown 1863: 88; cf. ^{MT}/naor-u/ 治る ‘to recover’) but (ナヲラス) (*na wo ra nu*) for another form of the same verb (Brown 1863:3; cf. ^{MT}/naor-anu/ 治らぬ ‘will not recover’). The historically correct kana spelling of the first two syllables of this verb is (ナホ) (*na ho*).

74 In his English-Japanese vocabulary list, Brown (1863:203–243) used (oö) consistently for the long vowel corresponding to ^{MT}/oH/, but in his example sentences he used (o-o), since the second (o) corresponded to a separate katakana letter, as in (i-wo-o) matched with (イワウ) (*i wa u*) ‘sulfur’ (Brown 1863:23). Another instance of (woö)~(wo-o) is the word meaning ‘king’ (cf. ^{MT}/oH/ 王): (woö) in the vocabulary list (Brown 1863:221) but (wo-o) matched with (ワウ) (*wa u*) in example sentences (Brown 1863:23). He also used (woö)~(wo-o) in volitional verb forms like (kawoö)~(ka-wo-o) (Brown 1863:ii, 4; cf. ^{MT}/ka-oH/ 買おう ‘will/let’s buy’). The correct pre-reform kana spelling for this word was (カハウ) (*ka ha u*), but Brown had (カヲフ) (*ka-wo-fu*) corresponding to (ka-wo-o).

75 Hepburn’s claim that (ヲ) and (オ) did not represent different sounds was part of the same statement that covered (エ) and (ヱ) (Hepburn 1867:x, 1872:xi, 1886:ix).

76 In his first edition, Hepburn provided an expanded version of the fifty-sound display. He added columns for syllables beginning with a voiced obstruent or with /p/. He had (アイウエオ) romanized (a i u e o) for the *a*-line, (ヤイユエヨ) romanized (ya i yu ye yo) for the *ya*-line, and (ワキウエワ) romanized (wa i u ye wo) for the *wa*-line, and his explanatory note (Hepburn 1867: x) says, “To complete this table the syllables, イ, ウ, and エ have to be repeated.” In the second edition, he dropped the extra columns and used the traditional ten-column-by-five-row format, but he apparently had gotten confused about (エ) and (ヱ). He had (ウ) romanized (u) both in the *a*-line and in the *wa*-line, (イ) romanized (i) both in the *a*-line and in the *ya*-line, and (ヰ) romanized (i) in the *wa*-line, just as in the first edition, but he had (エ) romanized (e) in the *a*-line, (ヱ) romanized (ye) in the *ya*-line, and (ヰ) romanized (e) in the *wa*-line (i.e., (エ) and (ヰ) were transposed). Of course, this may have been just a typographical error, since (エ) and (ヰ) look very similar. There was also a typographical error in the explanatory note following the table (Hepburn 1872:xii): “To complete this table the syllables, イ, ヲ, and エ have to be repeated.” It was (ウ) (romanized (u)), not (ヲ) (romanized (o)) that appeared twice. These mistakes remained uncorrected in the third edition (Hepburn 1886:x). The second and third editions also include an additional katakana table with the letters in *i-ro-ha* order, and for some reason the transliteration of (ヲ) there was (wo) (Hepburn 1872:xi, 1886:x). Frellesvig (2010:165–169) provides a good explanation of *i-ro-ha* order.

77 Books produced to help children learn kana often provide fifty-sound displays with the *ya*-line and the *wa*-line as described here, usually with parentheses around each of the gap-filler letters. Some textbooks for non-native learners of Japanese do the same. Tohsaku (1994:27) is unusually helpful in explaining to his readers that “を falls on the *w* line because historically it was pronounced **wo**.”

78 Of course, /woHkumaN/ ‘Walkman’ is a well-known example of *wasei-eigo* 和製英語 ‘made-in-Japan English’ and not strictly speaking a loanword.

79 The loanword /peNširu/ has since been supplanted by Sino-Japanese /eN-picu/ 鉛筆 ‘pencil’, but it survives in compounds, including /šaHpu+peNširu/ シャープペンシル ‘mechanical pencil’. The earliest citations in *NKD* are 1875 for /peNširu/ and 1876 for /eN-picu/ in its modern meaning.

80 The romanization in Hepburn’s 1872 edition is actually ⟨penshir⟩, but this is presumably just a typographical error, since the accompanying katakana are ⟨ペンシル⟩ and the 1886 edition has ⟨penshiru⟩.

81 As Habein (1984:103) says, “it was only after World War II that *katakana* was prescribed for *gairaigo*,” although there were precedents for this and other italic-like uses of *katakana* (Kindaichi, Hayashi and Shibata 1988:570). As noted in the Preface, the term *ateji* is used very broadly in this book to include not just phonogram (pronunciation-based) uses of kanji but also meaning-based uses.

82 According to Irwin (2011:34–35), the most likely source of this loan was Spanish *xabon* ‘soap’, although Portuguese *sabão* ‘soap’ is also a possibility. The earliest *NKD* attestation for the form corresponding to MT/šaboN/ is 1631.

83 Sino-Japanese /seQ-keN/ is the everyday word for ‘soap’ in Tōkyō today, but the loan survives in ^{MT}/šaboN+dama/ シャボン玉 ‘soap bubble’.

84 Ordinary native speakers do not recognize /teNpura/ as a loan, and it is often written ⟨天麩羅⟩ or ⟨天ぷら⟩ even today in restaurants. Irwin (2011:34–35) gives the source as Portuguese *temperar* ‘to season’ or *tempero* ‘seasoning’, and the earliest *NKD* citation is 1748.

85 Most dictionaries list only /piano/ ピアノ, but the spelling ⟨ピヤノ⟩ (*pi ya no*) is quite common.

86 I am assuming, of course, that /miyage/ ‘gift’ and /miage/ ‘looking up’ have the same accent pattern. The former is unaccented, but both *NHK* and *Meikai* say that the compound verb /mi+age-ru/ 見上げる ‘to look up’ can be either unaccented or accented (i.e., /miage⁺ru/, although *Meikai* marks this form as “new”). As mentioned above in §4.4, Hepburn used the *ren’yōkei* 連用形 ‘adverbial form’ of a verb as its citation form. The general pattern is that this form matches the modern citation form in accent (Martin 1975:883), so both unaccented /miage/ and accented /mia⁺ge/ are possible.

87 Hepburn, too, probably pronounced both C/iy/ and C/y/ as C/iy/. One of the items on Lyman’s list is *riyō*, which could be any of several words that Hepburn romanized as (riyō) in the first two editions of his dictionary. Most of these correspond to modern Tōkyō words pronounced /ryoH/, but the 1872 second edition lists the headword (ri-yō), with the hyphen marking the morpheme division (cf. ^{MT}/ri-yoH/ 利用 ‘use’), in between the headwords corresponding to ^{MT}/ryoH/ 量 ‘quantity’ and ^{MT}/ryoH/ 良 ‘good’. The implication is that all three words had the same pronunciation. As already noted, the romanization in the 1886 third edition follows the system adopted by the *Rōmaji-kai* (see note 49). Hepburn (1886:iii) said that these changes were “somewhat against his own judgment,” although we cannot be sure whether this remark applied to the practice of distinguishing ⟨Ciy⟩ from ⟨Cy⟩. In any case, the third edition has (riyō) for /ri-yoH/ ‘use’ and (ryō) for /ryoH/ ‘quantity’ and /ryoH/ ‘good’.

88 Lyman’s 1894 article actually had “hiyooro–”, indicating a short vowel just before /kata/, but this was just an error (see the Appendix).

89 An additional complication, ignored here, is that ⟨ぢや ぢよ ぢゆ⟩ were also possible hiragana spellings for /ja̠ jo̠ ju̠/ (see §1.1).

90 The obscure Sino-Japanese word /ši-yo/ 賜与 ‘bestowing’ occurs in the text of the Japanese constitution adopted in 1946.

91 There was also a fourth possible spelling for /juH/: ⟨ヂュウ⟩ (see §1.1).

92 Although pronouncing /o̠u/ instead of /oH/ is described here as “unnatural,” there is reason to believe that a phonological change motivated by spelling pronunciation may be under way (Vance 2018a).

93 The item ^{MT}/uN·juH+kicu/ ‘Wēnzhōu orange’ appears as a headword in Hepburn’s 1872 second edition and 1886 third edition, romanized as ⟨unjūkitsu⟩, but the katakana spelling in both entries is incorrect: ⟨ウンジユ キツ⟩ (*u n ji yu ki tsu*). As explained earlier, the spelling ⟨ジユ⟩ (*ji yu*) could only have represented /ji_yu/ or /ju/, not /juH/.

94 The raised numeral 2 in the Cantonese phonemic transcriptions represents the lowest of the three contrastive tones that are possible on syllables ending in a voiceless stop.

95 The contrasting term for moras beginning with a voiceless obstruent (other than /p/) is *seion* 清音. Frellesvig (2010:34) gives the translations “muddy sounds” for *dakuon* and “clear sounds” for *seion*. Both terms are borrowed from traditional Chinese phonological analysis (Nihon Onsei Gakkai 1976:471–472).

Chapter 5

1 Yanaike (1991:93) gives a detailed account of the different forms in which Lyman’s article appeared. The page numbers in the citations in this book are those in the *Oriental Studies* version (listed in the References). The photocopy I received via interlibrary loan (see the Preface) seems to have been a stand-alone pamphlet rather than an offprint, since the pages are numbered 1–17. The Internet Archive provides online access to the *Oriental Studies* volume (<https://archive.org/details/orientalstudiess00orierich/page/n5/mode/2up>).

2 Yanaike (1991:66–79) provides a complete Japanese translation of Lyman’s article.

3 The abstract of Lyman’s 1883 presentation was published in 1885 (*Journal of the American Oriental Society* 11: cxlii–cxliii). Suzuki (2017:29–30) provides a detailed comparison of the 1885 abstract and the 1894 article.

4 As noted in §4.6, it is not clear whether Hepburn thought that the words in question were ever pronounced with /ye/.

5 As explained in §4.6, all three editions of Hepburn’s dictionary also had word-medial (wō) in a few cases where modern Tōkyō /oH/ developed historically from earlier /wau/.

6 These words for ‘leopard’ and ‘bale’ are both accented in modern Tōkyō: /hyo⁺H/. They also had the same pre-reform kana spelling: ⟨へう)⟩ (*he u*).

7 Engelbert Kaempfer (1651–1716) was a German-born scientist who served as the doctor for the Dutch trading post at Nagasaki for two years (1690–92). His *History of Japan* was published posthumously in 1727–28. Boxer (1983) provides a concise biography of Kaempfer.

8 The claim that there are no headwords containing /eH/ presupposes that /ei/ and /eH/ are distinct. The precise nature of this distinction is a difficult issue in a phonological analysis of modern Tōkyō Japanese (Vance 2008:63–67) and will not be taken up here. For words that can be analyzed as containing /ei/, Hepburn consistently used ⟨ei⟩ in all the editions of his dictionary, and Lyman did the same.

9 In Hepburn’s 1867 first edition, these two verb forms appear as headwords, romanized as ⟨omō⟩ and ⟨szkū⟩. The 1872 second edition and 1886 third edition have ⟨omou⟩ but ⟨sukū⟩ (listed as inflectional forms under the headwords romanized as ⟨omoi⟩ and ⟨sukui⟩; on Hepburn’s citation forms for verbs, see §4.4 and the commentary on Lyman’s sub-section 3[a] in the Appendix).

10 Of the words listed in the 1885 Rōmaji-kai instructions as requiring ⟨ii⟩, the only one that does not go back to an earlier form with /i/C/i/ is the place name corresponding to ^{MT}/kiH/ 紀伊. This could be a kind of spelling pronunciation, since the two kanji make it look as if there

are two morphemes (cf. ^{MT}/ki-i/ 奇異 ‘strange’). The modern Tōkyō forms of two of the other items on the list are /iH+wake/ 言い訳 ‘excuse’ (/iH/ < /ii/ < /iwi/ < /ipi/) and /hiH-te/ (/hiH/ < /hii/ < /hiki/), the gerund of the verb /hik-u/ 引く ‘to pull’. Early Middle Japanese /p/ changed into [w] word-medially and merged with EMJ /w/ in the late 10th century in the “standard” Kyōto dialect (Frellesvig 2010:202), and then, as we saw in §4.6, word-medial /wi/ and /i/ merged as /i/ by about 1100 (Frellesvig (2010:207). The loss of /k/ in the last syllable of a verb stem (as in /hii/ < /hiki/) is one of changes known as *onbin* 音便, and forms without /k/ are attested (originally as colloquial alternatives) from the beginning of EMJ around 800 (Frellesvig 2010:192–194).

Chapter 6

1 Ogura later published a revised version (Ogura 1916), and the revision appeared again a few years later with a different title (Ogura 1920). He omitted many of his examples in this revised version.

2 The URL for Kokugakuin University’s English-language website is: <https://www.kokugakuin.ac.jp/en/about/introduction/p1>.

3 This Prof. Fujioka is Fujioka Katsuji 藤岡勝二 (1872–1935), who held the chair in linguistics at the University of Tōkyō from 1907 until 1933 (Hattori 1955:793). The pamphlet version of Lyman’s 1894 article that Ogura had was probably the same as what I received in response to my interlibrary loan request (see the Preface). The pages are numbered 1–17, but the text is identical to that in the Oriental Club of Philadelphia anthology.

4 As explained in §5.1, the term *surd* denotes a voiceless segment, and the term *sonant* denotes a voiced segment.

5 Ogura quoted Lyman’s 1894 text here by providing a Japanese translation. Here and in all subsequent quotations of this kind in this chapter, Lyman’s original text appears, since there is no point in translating Ogura’s Japanese translations back into English. Ogura seems to have understood Lyman correctly in every case. Ogura did not give page numbers, so these have been added in brackets.

6 According to the entry in Ueda et al. (2001:137), Ishigane Otonushi 石金音主 (?–1860) was a national learning scholar (*kokugaku-sha* 国学者) who studied under Motoori Ōhira 本居大平 (1755–1833), Motoori Norinaga’s adopted son. In 1827, Ishigane published a book on the pronunciation of ancient Japanese. Ogura actually used the traditional terms *seion* 清音 and *dakuon* 濁音 throughout his article. (See the last paragraph of §4.6 for more on these terms.) A *seion* is a mora beginning with a voiceless obstruent, and a *dakuon* is a mora beginning with a voiced obstruent. Since literal English translations of these terms would be clumsy and unhelpful, modern phonetic terminology is used here instead.

7 Portions enclosed in double brackets are English translations of Ogura’s interpolations; they do not correspond directly to anything in Lyman’s original text. Ogura enclosed interpolated examples in parentheses, but he did not mark interpolations that simply served to make his Japanese translations of Lyman’s text understandable in the absence of Lyman’s surrounding context.

8 As noted in §5.1, the second edition of Hepburn’s dictionary is Hepburn 1872 (abbreviated hereafter as H2).

9 Lyman’s original text has only “amagappa” here, and Ogura’s translation has only “雨合羽.” For all example words of this kind, here and in the other quotations from Lyman that appear later in Chapter 6, I have inserted a bracketed addition. This addition usually consists of (1) a romanization, with a hyphen showing the boundary between the two elements of the compound; (2) a typical representation in present-day Japanese orthography; and (3) a close-to-literal English gloss. I have omitted the romanization (1) when it would be identical to what Lyman himself provided. As for the Japanese orthography (2), I have used current kanji rather than Ogura’s older (pre-1949) character forms, and I have added *okurigana* in several examples where Ogura gave only kanji. The English gloss (3) is only approximate in most cases, and it is followed by a less literal gloss in parentheses if the literal one is bizarre or misleading. Seeley (1991:156–157) provides a brief account of the new character forms (*shin-jitai* 新字体) adopted in 1949. I touch on *okurigana* (the kana that, roughly speaking, spell out inflectional endings) in my commentary at the beginning of the Appendix.

10 As explained in Chapter 2 note 18, the term *national learning* is a conventional translation of *kokugaku* 国学.

11 Many of the examples that Ogura cited as modern Japanese words are now obscure or obsolete.

12 The example *kawa-yanagi* is irrelevant, since the initial consonant in /yanagi/ ‘willow’ is not a voiceless obstruent.

13 *Kojiki* 『古事記』 (712) and *Nihon shoki* 『日本書紀』 (720) contain the oldest substantial written records of Japanese that still survive. As Frellesvig (2010:23–24) explains, these two histories are written mostly in Chinese, but the poems they contain, together with those in *Man’yōshū* 『万葉集』 (the latest of which is dated 759), constitute the “main corpus for OJ.”

14 In these and all subsequent examples from *Kojiki* and *Nihon shoki*, the kanji are what Ogura provided. Ogura inserted a hyphen in each example to mark the break between the two elements of the compound. The romanizations and English glosses have been added. (The glosses are close to literal, and a less literal gloss follows in parentheses if the literal one is bizarre or misleading.) The kanji used as phonograms in 8th-century texts are called *man’yōgana* 万葉仮名, and for the most part they represented Japanese pronunciation syllable by syllable (see Chapter 1 note 31). Ogura highlighted a syllable (phonogram) in each example by placing a mark (↘) to its right. This highlighted syllable is the one containing the voiced obstruent that purportedly prevents *rendaku*. (As explained in §1.2, these obstruents were prenasalized as well as voiced in OJ.) The consonant of that syllable is bolded here in the corresponding romanization. The romanizations for all OJ examples follow the system proposed by Frellesvig and Whitman (2008b:3–5). This romanization distinguishes *kō-rui* 甲類 ‘Type A’ from *otsu-rui* 乙類 ‘type B’ syllables, but the modern understanding that these orthographic distinctions reflect OJ phonological distinctions (Hashimoto 1917; Shibatani 1990:125–139; Frellesvig 2010:26–30) was still in the future when Ogura was writing. The example words are cited in the form listed in *Jōdai*. (Most, but not all, are listed as headwords.) Ogura often included a small amount of preceding or following context in his examples, but this context has been omitted in this translation, and only the word of interest is given in each case.

15 *Jōdai* gives this word (*kamu-pogi* 加牟-菩岐 ‘divine celebrating’) with ^{0j}/ki/ as the last syllable, although the phonogram 岐 can represent either ^{0j}/ki/ or ^{0j}/gi/ in *Kojiki* (*Jōdai*:892). Ogura presumably would not cite it here if he were writing today.

16 ^{0j}/ama+sibwi/ is not listed in *Jōdai* and seems to be unattested.

17 I have omitted these parenthetical notes from the translation. Even if a reader wanted to check the sources that Ogura used (which seems highly unlikely), a volume number alone is not much help. As mentioned in §2.4, *Kojiki-den* 『古事記伝』 is Motoori Norinaga’s 44-volume commentary on *Kojiki*. (The last volume appeared in 1822.) *Nihon shoki tsūshaku* 『日本書紀通釈』 is a 70-volume commentary on *Nihon shoki* by another national learning scholar, Iida Takesato 飯田武郷 (1827–1900). (The last volume appeared in 1909.) Ogura also included a kanji gloss along with the volume number for each word on the two lists. For example, just after the *man’yōgana* “爾波–須受米” for *nipa-suzume* ‘garden sparrow’ on the *Kojiki* list, Ogura added “庭雀 四二” in parentheses. The first two kanji are used to write the modern Tōkyō cognates of the two elements in the OJ compound and thus provide a literal gloss: /niwa/ 庭 ‘garden’ and /suzume/ 雀 ‘sparrow’. The other two kanji indicate that Ogura took this example from volume 42 of *Kojiki-den*.

18 This example (*zen-pai~zen-hai* ‘previous cohort’) is the only word listed in H2 that fits Lyman’s description. Both pronunciations are attested according to the entry in *NKD*, but the word is not listed at all modern comprehensive dictionaries (*Kōjien*, *Daijirin*). Ogura’s text actually has “gen-hai” and “gem-pai” here, given only in romanization, but there is no headword with either of these pronunciations in H2, and no headword with the pronunciation /geNhai/ in *NKD*. Presumably “gen-hai” and “gem-pai” are just misprints.

19 Although modern dictionaries (*Kōjien*, *Daijirin*) list /kaNbaku/ as an alternative pronunciation, /kaNpaku/ is at present the usual pronunciation for the word meaning ‘chief advisor (to the emperor)’.

20 As explained in the Appendix in the commentary on Lyman’s list 4[a], he used Hepburn’s citation form, the adverbial form (*ren’yōkei* 連用形), for verbs. Just as in the Appendix, I have substituted the modern citation form, the conclusive form (*shūshikei* 終止形), here in my bracketed additions (see Chapter 6 note 9 above) to make it clear that the compounds under discussion are verbs.

21 What Ogura presumably meant here is that in some cases the item on list 3[b] can be treated as an inflectional form of a verb (the adverbial form) rather than as a true noun. This problem is noted in the in the commentary on Lyman’s list 3[b] in the Appendix.

22 As noted in the Appendix in the commentary on Lyman’s list 3[c], he consistently used ⟨dzu⟩ to romanize /zu/. Ogura cited all examples of a Sino-Japanese element combined with the verb meaning ‘do’ in their classical form: X+/zu/ or X+/su/.

23 Ogura’s text has ⟨辯ず⟩ (/beN+zu/ ‘to speak’) here, but he cited this same word below as one of his additional examples, so he presumably meant to cite ⟨辨ず⟩ (/beN+zu/ ‘to discriminate’) in one place and ⟨辯ず⟩ (/beN+zu/ ‘to speak’) in the other. H2 lists both these verbs in the same entry, headed by *benji*. Both kanji were replaced by ⟨弁⟩ when the new character forms were adopted in 1949 (see Chapter 6 note 9 above).

24 As noted in the Appendix in the commentary on Lyman’s list 3[c], these examples have two alternative conclusive forms in modern Japanese: a more colloquial one ending in /jiru/ (as in /haN+ji~ru/ 判じる) and a more formal one ending in /zuru/ (as in /haN+zu~ru/ 判ずる). As also noted in the Appendix, Lyman sometimes, but not always, included the colloquial ending “ru” along with “zuru” in parentheses.

25 H2 lists two different words with the form /taN+zu~ru/, so Ogura mentioned both. However, the second of these, written with ⟨彈⟩, is listed as /daN+zu~ru/ in modern dictionaries, although the *NKD* entry says it often had initial /t/ in medieval times.

26 Ogura's text has (捨ず), and this kanji has the reading /hoH/, but no verb /hoH+zu-ru/ or /hoH+zu/ written with the kanji (捨) is listed in *NKD*, so (捨ず) is presumably just a misprint for (焙ず).

27 Ogura's list includes (投ず), but this must be a misprint. The word /toH+zu-ru/ 投ずる 'to cast' appears on Lyman's list 3[c] just above, and the Sino-Japanese initial element does not end in a nasal.

28 As mentioned in Chapter 6 note 22 above, Ogura cited all examples of a Sino-Japanese element combined with the verb meaning 'to do' in their classical form: X+/zu/ or X+/su/. Here and below, when the corresponding modern form, X+/zuru/ or X+/suru/, is listed in *NKD*, suggesting that the word is still in use, I have given the romanization X+(zuru) or X+(suru).

29 Ogura's text has (嘆ず), which is not listed in modern dictionaries and is probably just a misprint.

30 The kanji (准) is just an alternative way of writing (準), so /juN+zu-ru/ 准ずる (on Ogura's list of additional examples) is the same word as /juN+zu-ru/ 準ずる (on Lyman's list).

31 Only the form /seN+su-ru/, without *rendaku*, is listed as a headword in *NKD*, but the entry says that /seN+zu-ru/ is also attested.

32 See Chapter 6 note 23 above.

33 Needless to say, the Sino-Japanese element in this word (*fū-zuru* 'to seal') does not end with /oH/ (romanized (ō)), but Ogura listed it here. He marked both /fuH+zu/ 封ず 'to seal' and /hoH+zu/ 封ず 'to grant a fief' with *furigana*, so it is not just a mistaken repetition of the same word. Of course, the fact that these two words are written with the same kanji may have triggered the error.

34 Several of the Sino-Japanese elements on the list that follows have the form C/ai/, and such sequences are usually considered to be one long syllable rather than two short syllables in modern Tōkyō Japanese (Vance 2008:133–138). Since Ogura claimed that *rendaku* never occurs when the Sino-Japanese element in SJ+'to do' has two syllables, he must have regarded the Sino-Japanese elements followed by /z/ in his earlier examples as monosyllables. In particular, in contrast to (C)/ai/ elements, he treated (C)V/N/ and (C)/ei/ elements as monosyllabic, and several more such elements appear as examples of monosyllables on lists later in Ogura's article.

35 Ogura's original text has (發) (the old form of (発)) here, but this must be a misprint, since /haQ+su-ru/ 発する 'to emit' belongs on the list following Lyman's 3[d] below. Since Ogura cited /haQ+su-ru/ there, he must have intended something else here. The Sino-Japanese elements in the immediately preceding example and in the immediately following example both have the form /hai/, so I have substituted /hai+su-ru/ 背する 'to turn one's back'. Another possibility is /hai+su-ru/ 敗する 'to be defeated'. Both are obscure or obsolete, but they are listed as headwords in *NKD*.

36 Ogura's original text has (憶) rather than (臆), but /oku+su-ru/ 'to be afraid', which is listed today as a headword even in small dictionaries, is written with the latter. *NKD* does not list a headword written (憶する).

37 Ogura did not specify the pronunciation of this example with *furigana*, but *NKD* lists not only /ši+su/, with a short vowel, but also /šiH+su/ and /šiH+su-ru/, with a long vowel. The entry for /šiH+su-ru/ identifies the long vowel as a colloquial pronunciation (*kan'yō-yomi* 慣用読み), and the citation dates suggest that this had long been the form in use (to the extent that any form was really in use) by the time Ogura was writing.

38 *NKD* does not list a word of the appropriate form written with the kanji (次). This example might be an error for /ji+su-ru/ 侍する 'to serve' or /ji+su-ru/ 持する 'to hold'.

39 Although Ogura listed /fu+su-ru/ 附する and /fu+su-ru/ 付する separately, they are usually treated as the same word in modern Tōkyō Japanese.

40 According to the *NKD* entry for /yoH+su-ru/ ‘to require’, the form /yoH+zu/, with *rendaku*, is also attested.

41 According to the *NKD* entry for /koH+su-ru/ ‘to serve’, the form /koH+zu/, with *rendaku*, is also attested.

42 According to the *NKD* entry for /roH+su-ru/ ‘to labor’, the form /roH+zu/, with *rendaku*, is also attested.

43 *NKD* does not list a word of the appropriate form written with the kanji 諒. This example might be a misprint for /ryoH+su-ru/ 諒する ‘to acquiesce’.

44 On the distinction between /ei/ and /eH/ in present-day Tōkyō, see Chapter 5 note 8.

45 Ogura’s original text actually has 僻す here, but this represents /heki+su/ ‘to be warped’. It must be a misprint, since /heki/ clearly has two syllables and does not end in what would be romanized as (ei) (or (ē)). I have substituted /hei+su/ 嬖す, since it is listed as a headword in *NKD* and is written with a similar kanji.

46 In the historical kana spelling in use until 1946, the Sino-Japanese initial elements in /kaN+su-ru/ 緘する ‘to close’ and /kaN+zu-ru/ 感ずる ‘to feel’ were spelled かん (romanized (kan)), and those in /kaN+su-ru/ 関する ‘to concern’ and /kaN+zu-ru/ 観ずる ‘to observe’ were spelled くわん (romanized (kwan)). As noted in §5.1, the pronunciation distinction between /ka/ and /kwa/ had disappeared by the late 19th century in Tōkyō.

47 The word /beQšite/ is an adverb, and it clearly contains the gerund form /ši-te/ of the verb meaning ‘to do’ (/beQ+si-te/), but there is no corresponding verb /beQ+su-ru/.

48 As noted in the comment on *ge-seru* in the Appendix, it is etymologically just the potential form of the immediately following example (*ge-su*), although it appears as a separate headword in *NKD*.

49 Ogura used the term *sokuon* 促音 here. I discuss the moraic obstruent briefly in §4.6.

50 As explained in §4.6, before the 1946 kana spelling reform, most instances of the moraic obstruent /Q/ were spelled with the same full-size letter as /cu/: (つ) (*tsu*) in hiragana.

51 Ogura’s original text has 齲 rather than 齲 (the kanji that Hepburn used), but this is probably just a misprint. The representation 齲齒 for the technical term /u-ši/ ‘decayed tooth’ is easily confusable with 齲齒, which *NKD* gives as a possible representation for /osoi+ba/.

52 The only close-to-literal English gloss in my additions to these six examples is the one for /miči+no+be/. These examples raise so many problems that such glosses would not be much help here. I discuss these problems in the comments added to these items in the Appendix.

53 The frozen phrase /u+no+hana/ is also used to mean ‘bean curd dregs’.

54 The frozen phrase /oku+no+te/ is cited above in Chapter 1 note 34.

55 The frozen phrase /kame+no+ko/ is also used to mean ‘turtle-shaped scrubbing brush’.

56 The frozen phrase /koto+no+ha/ is obsolete. The item in use in Tōkyō today is /koto+ba/ 言葉 ‘word’, and as Ogura noted in parentheses in his original text, this form lacks the genitive particle /no/ and shows *rendaku*.

57 The frozen phrase /mago+no+te/ is normally used figuratively to mean ‘back scratcher’.

58 Although /inošiši/ ‘wild pig’ is etymologically a phrase, modern speakers may well think of it as unanalyzable.

59 Ogura marked the phonogram representing the syllable containing the consonant of interest with ◡ if the consonant seems to have been voiceless and with ◃ if the consonant seems to have been voiced, but using boldface for voiced and outline for voiceless seems more iconic.

60 Although the OJ distinctions between voiceless and voiced (prenasalized) obstruents were usually reflected in 8th-century *man'yōgana* usage, these distinctions were sometimes ignored (Martin 1987:84; Seeley 1991:80; Frellesvig 2010:162–163).

61 ^{OJ}/patuse/ is a place name, but ^{OJ}/patuse+no+gapa/ is not listed in *Jōdai*. *NKD* lists only modern Tōkyō /hacuse+gawa/, with no genitive particle between the place name and the noun meaning 'river'. The attestation for the corresponding OJ form is not written in phonograms, but even if it did have *rendaku*, it does not contradict Ogura's generalization, since it was not a phrase.

62 *NKD* lists a headword corresponding to modern Tōkyō /kawa+no+be/, with *rendaku*, but the citation is from the Japanese-Portuguese dictionary of 1603–04 (Doi et al. 1980). Both *NKD* and *Jōdai* list a headword with the OJ form ^{OJ}/kapape/, but it is irrelevant to Ogura's generalization, since it does not have a genitive particle and does not show *rendaku*.

63 ^{OJ}/pimuka/ is a place name. Both *NKD* and *Jōdai* give an OJ citation containing the phrase ^{OJ}/pimuka+no+kwoma/ under the headword corresponding to ^{OJ}/kwoma/ (modern Tōkyō /koma/ 駒 'colt').

64 ^{OJ}/womura+no+take/ looks like a proper name, but it is apparently not attested. There is no headword matching it in *Jōdai* or in *NKD*, and there is nothing like it in the *Jōdai* entry for ^{OJ}/take/ either. (The corresponding modern Tōkyō morpheme /take~/~/dake/ 岳 'tall peak' does not occur as an independent word and appears only in the names of mountains.)

65 ^{OJ}/yura/ is a place name, and ^{OJ}/yura+no+two/ appears in a citation under the headword ^{OJ}/two/ in *Jōdai*. The corresponding modern Tōkyō word is /to/ 戸 'door'. ^{OJ}/two/ had a broader meaning that included 'gate' and, figuratively, 'narrows'.

66 *Jōdai* lists this word as ^{OJ}/puna+no+pe/, without *rendaku*, in accord with Ogura's generalization. The *Jōdai* entry includes the same citation as the one Ogura gave, but the modern consensus is that the *man'yōgana* (倍) in *Nihon shoki* represented ^{OJ}/pe/, not ^{OJ}/be/.

67 The last character (弓) in Ogura's example is not a phonogram; it is a logogram for ^{OJ}/yumi/ 'bow'. Both *Jōdai* and *NKD* lists this item as a headword in a form implying ^{OJ}/ma+kagwo+yumi/, with a voiced obstruent in the third syllable, but both dictionaries note that the phonogram (古) in the *Kojiki* citation that Ogura gave represented ^{OJ}/kwo/, not ^{OJ}/gwo/. According to the *Jōdai* entries for this word and for ^{OJ}/ma+kagwo+ya/ (a word denoting the corresponding arrow), ^{OJ}/kakwo/ and ^{OJ}/kagwo/ probably coexisted in OJ, but it is not at all clear whether this element is etymologically the same as ^{OJ}/ka+kwo~/~/ka+gwo/ 'deer; fawn'.

68 It is clear from the entries for ^{OJ}/ma+gupapi/ in *Jōdai* and *NKD* that modern lexicographers see the initial element ^{OJ}/ma/ as an allomorph of the noun meaning 'eye' (cf. modern Tōkyō /me~/~/ma/ 目 'eye') rather than the prefix meaning 'real' that occurs in the other examples listed here. If this modern consensus is correct, this word is not an exception to Ogura's claim that *rendaku* usually does not occur following a prefix.

69 No headword of the form ^{OJ}/ma+pirak-u/ appears in *Jōdai* or in *NKD*, and there seems to be no accepted interpretation of the passage from which this example is taken.

70 This ^{OJ}/mi/ is an honorific prefix. See Chapter 1 note 33.

71 This ^{OJ}/i/ prefix was added to OJ verbs and, according to the entry in *NKD*, it carried some kind of emphatic meaning. At the beginning of each example is the inflectional form that Ogura cites. If this is not the conclusive form, I have added the conclusive as listed in *Jōdai*, and the gloss is for this conclusive form.

72 The hiragana (ゝ) in these examples represents the second mora of the long vowel /oH/ in modern dialects. Unger (2004:328–329) provides an account of how these now non-standard

gerund forms developed. Ogura actually cited entire clauses as examples, but only the relevant verb form in each case is given here.

73 These three examples (*kobi-te*, *sabi-te*, *nobi-te*) are gerunds of verbs whose ancestors were in the upper bigrade (*kami-nidan* 上二段) conjugation class. The stems of their OJ counterparts ended in ^{OJ}/bwi/ (^{OJ}/kobwi/, ^{OJ}/sabwi/, ^{OJ}/nobwi/), whereas the stems of the OJ counterparts verbs in the quadrigrade (*yodan* 四段) conjugation class ended in ^{OJ}/bi/ (as in ^{OJ}/yobi-te/ ‘calling’). As Frellesvig (2010:192–194) explains, stems ending in ^{OJ}/Cwi/ did not undergo the *onbin* 音便 ‘euphonic changes’ that affected stems ending in ^{OJ}/Ci/.

74 The ancestor of /sugi-ru/ too was in the upper bigrade conjugation class. See note 73 just above.

75 Ogura was assuming that Tōkyō Japanese typically had syllable-initial [ŋ] rather than [g] word-medially, which was certainly true at the time. This question is discussed in §4.6. The historical development of /de/ in the forms on the right side of this list involved prenasalization (which also figured crucially in the historical development of *rendaku*, as explained in §1.2). For example, in the case of /kai-de/ 嗅いで ‘smelling’, ^{OJ}/kagi-te/ was pronounced something like [kã^ŋgite], with ^{OJ}/g/ realized as a prenasalized voiced obstruent. One of the *onbin* 音便 ‘euphonic changes’ was the deletion of ^{OJ}/g/, but the nasalization on the preceding vowel presumably remained and spread rightward, resulting in EMJ [kã^ŋde], which Frellesvig (2010: 189–199) analyzes phonemically as ^{EMJ}/kaĩde/ (where /I/ and /ĩ/ were contrasting moraic vowels). The nasal vowel triggered postnasal voicing (see §7.3.5). Subsequently, the merger of nasal vowels with oral vowels (Frellesvig 2010:309–310) and the loss of prenasalization (Frellesvig 2010:307) led to modern [kaide] /kai-de/, in which there is no phonetic motivation for the voicing of /d/.

76 Ogura actually cited entire clauses as examples, but only the relevant verb form in each case is given here. The modern Tōkyō forms are /širuši-te/ 記して ‘writing down’, /saši-te/ 刺して ‘stabbing’, and /kaQ-te/ 買って ‘buying’.

77 Relevant examples of the moraic obstruent appear in the modern Tōkyō forms /maQ-te/ 待って (cf. ^{OJ}/mati-te/) ‘waiting’ and /toQ-te/ 取って (cf. ^{OJ}/tori-te/) ‘taking’.

78 Ogura used the same kanji for /čarumera/ ‘street vendor’s flute’ as Hepburn did: (喇叭). As noted in the comment added to this item in the Appendix, these kanji are ordinarily used to write /raQpa/ ‘bugle’, not /čarumera/.

79 The *NKD* entry for /furo+fuki/ gives ‘scraping dirt off a person in a bath’ as an earlier meaning but provides no help in understanding how the ‘well-boiled radish’ meaning developed.

80 This gloss for /čiri+čiri/ is what appears in the H2 entry. As noted in the comment added to this item in the Appendix, *NKD* lists /čiri+čiri/ as a headword with this meaning, but it also lists /čiri+čiri/ as a separate headword with a cross-reference to /čiri+čiri/, implying that the form without *rendaku* is an alternative pronunciation. As also noted in the Appendix, there is a reduplicated mimetic word /čiri+čiri/ ちりちり ‘frizzle-frizzle’, and Ogura cited it later on his list of “pairs of words that have parallel structure but differ in meaning depending on the presence or absence of *rendaku*.”

81 According to the entry in *NKD*, this /či+ji/ may not have originated as a reduplication; the second syllable /ji/ may be etymologically identical to the /či/ in modern Tōkyō /hatači/ ‘20 years old’, which would make the reduplication interpretation a folk etymology. But to Ogura, and to literate a modern speaker who knows /či+ji/, it seems safe to say that it is synchronically an example of reduplication.

82 *NKD* lists only the classical conclusive form /furu+buru+ši/ as a headword, implying that this adjective is obsolete.

83 I have used *verb bases* here to translate Ogura's “動詞の種々なる活用段” (*dōshi no shuju naru katsuyō-dan*). In traditional Japanese grammatical analysis, every verb has six bases (or stems), some of which can occur as independent words and some of which must be followed by a suffix (Ikeda 1975:26–27; Vance 1987:178–179; Shibatani 1990:221–225). Most of the examples that Ogura cited on his list reduplicate the adverbial form (*ren'yōkei* 連用形), which is one of the six traditional bases and (as noted in the my commentary on Lyman's list 3[a] in the Appendix) the form that Hepburn and Lyman used as the citation form for a verb. But in the word corresponding to modern Tōkyō /kaes-u+gaes-u/ ‘truly’, the repeated element is the conclusive form (*shūshikei* 終止形) – the form normally used as the citation form today. Incidentally, the modern Tōkyō transitive verb /kaes-u/ 返す means ‘to give back’, and according to the *NKD* entry for /kaes-u+gaes-u/, it used to have the more literal meaning ‘repeatedly’. One example on Ogura's list (/kana+gana/) is problematic; see note 84 just below.

84 Ogura gave the *furigana* (ガナ) (*ga na*) for the second half of this example, so there is no question that this is the form he intended, but there is no headword with an appropriate meaning and the pronunciation /kana+gana/ listed in *NKD*. In any case, the stem of the intransitive verb /kana-u/ 叶う ‘to be granted’ is /kanai/, and the stem of its transitive counterpart /kanae-ru/ 叶える ‘to grant’ is /kanae/. No traditional stem has the form /kana/.

85 There is a discussion of quasi-mimetic /šimi+jimi/ in §7.5.2.

86 The English glosses provided for these and all other mimetic items are only crude approximations. As Hamano (1998:5) notes, “Accurate translation is always extremely difficult to achieve. . . .”

87 The examples on this list are sound-symbolic but not onomatopoeic. In the terminology that Shibatani (1990:154) uses, they are phenomimes (conveying “states, conditions, or manners of the external world”) or psychomimes (conveying “mental conditions or sensations”). At least some of these items do seem to be related to non-mimetic items etymologically. Hamano (1998:61) cites /toro-i/ とろい ‘sluggish; stupid’ as an example of an adjective derived from a mimetic root (cf. Ogura's *toro-toro*), and there must be a connection between the verb /kutabire-ru/ くたびれる ‘to get tired’ and Ogura's *kuta-kuta*, and between the verb /ter-u/ 照る ‘to shine’ and Ogura's *tera-tera*.

88 All the items that Ogura cited in this sentence except for the third (cf. modern Tōkyō /cura+cura/) seem to have non-mimetic etymologies. (The *NKD* entry for /cura+cura/ does not offer any definite etymology.) Ono (1984:293) lists /hiya+hiya/ as mimetic, and Hamano (1998:224) lists it as possibly mimetic (marked with a question mark). Hamano (1998:226) lists /cura+cura/ without a question mark, but Ono does not list it at all. As mentioned in the Appendix in the commentary on Lyman's list 4(b), the synchronic boundary between mimetic and non-mimetic is fuzzy (Hamano 1998:6–7).

89 *Jōdai* lists ^{OJ}/toki+doki/, with *rendaku*, as a headword and cites the same *Nihon shoki* example as Ogura to show that the form ^{OJ}/toki+toki/ is also attested. The *Jōdai* entry suggests that there may have been a semantic difference between the two forms (see §1.2 and Chapter 1 note 35).

90 According to the entry in *NKD*, the etymology of this /yuyu/ is uncertain. I discuss adjectives with modern citation forms ending in /ši-i/ in the Appendix in the commentary on Lyman's list 4(c).

91 It seems strange to classify /ana+kašiko/ as a coordinate compound, but as noted in the commentary on this item in the Appendix, there is no way to know how Lyman interpreted it.

As also mentioned in that commentary, Lyman actually had “anakashiki” here. Ogura corrected this error without comment.

92 This example (/toya+kaku+to/ ‘this and that’) is problematic, as noted in the comment on it in the Appendix.

93 The modern Tōkyō form /oši/ is not in current use, except perhaps as an archaic poetic word. Its OJ counterpart ^{OJ}/wosi/ is attested with the meaning ‘mandarin duck’, and Martin (1987:512) suggests that it is etymologically the stem of the adjective ^{OJ}/wosi/ ‘dear, loveable’ (corresponding to modern Tōkyō /oši-i/ 惜しい ‘regrettable’). This etymology makes sense because mandarin ducks are the “lovebirds” of Japanese culture. To a present-day Tōkyō speaker, the /oši/ in /oši+dori/ is something like the *cran* in English *cranberry*, but a folk-etymological identification with /oši/ 押し ‘pushing’ is likely, since the notion of lovebirds pushing against each other provides a plausible semantic rationale.

94 Etymologically, this element /ka~/ga/ is a native Japanese morpheme meaning ‘place’ (Martin 1987:431, 435) that did not occur as an independent word even in OJ. *NKD* lists the modern Tōkyō form /ka/ as a headword and gives the kanji (処). Ogura’s text actually has (隠所) for /kakure+ga/, but modern dictionaries usually give (隠れ処) and/or (隠れ家). Both (所) and (処) can represent native Japanese /tokoro/ ‘place’, and (家) can represent Sino-Japanese /ka/ ‘house’. Using (家) for the /ga/ in /kakure+ga/ makes it look as if this Sino-Japanese morpheme has undergone *rendaku*, but in fact, etymologically genuine instances of this morpheme never show *rendaku*. In short, (家) in (隠れ家) is a case of *ateji*, and Ogura’s choice of (所) indicates that he knew the etymology. He had also cited /kakure+ga/ above in connection with Lyman’s list 2(b) as an example in which Lyman had mistakenly identified the second element as Sino-Japanese (see Table 7.16 in §7.3.4).

95 The OJ counterpart of /sana+da/ is attested, and there is no dispute that modern Tōkyō /da/ is etymologically the morpheme meaning ‘paddy’. The *NKD* entry for /sana+da/ says that its OJ ancestor contained ^{OJ}/sa/ ‘narrow’ and that ^{OJ}/na/ was a genitive marker, but the *Jōdai* entry for ^{OJ}/sana+da/ expresses skepticism about this explanation. The surname /sana+da/ 真田 is common in Japan today. The earliest attestation in *NKD* for /sana+da/ with the meaning ‘braid’ is 1767, and it was a clipping of /sana+da+himo/ 真田紐 ‘Sanada cord’, which originally denoted a particular style of braiding associated with a person named Sanada. It could be that Ogura intended the surname rather than the common noun here, but either way, it is a relevant example, even though a present-day speaker is not likely to connect /sana/ with anything else in the modern language.

96 According to the *NKD* entry, this item is attested as a common noun both with and without *rendaku*: /aki+da~/~/aki+ta/. In Tōkyō today, it is used only as a place name or a surname and has the form that Ogura gave, without *rendaku*.

97 This /hasu+da/ is defined in *NKD* both as a common noun and as a place name, but it is used only as a place name in Tōkyō today.

98 This /icu+te/ is obsolete, but it is listed as a headword in *NKD*. One definition is ‘five pairs of oars’ (or ‘five boats equipped with a pair of oars’). The entry also gives ‘five times’ as an older meaning.

99 Ogura’s original text has the kanji (生取) for /ike+dori/, but this word is typically written (生け捕り) today.

100 *NKD* lists only /iji+bari/, with *rendaku*, as headword, and the entry does not mention an alternative pronunciation.

101 *NKD* lists only /haya+fune/ as a headword, but the entry gives /haya+bune/ as an alternative pronunciation.

102 The *Jōdai* entry for ^{OJ}/isu+kupasi/ says that the meaning is unclear. The *NKD* entry agrees and says that it is uncertain whether the second element actually was the adjective ^{OJ}/kupasi/.

103 ^{OJ}/tatu+gomo/ is puzzling. If the first element was the adnominal form (*rentaikei* 連体形) of the OJ verb corresponding to modern Tōkyō intransitive /tac-u/ 立つ ‘to stand’, then the combination would be a phrase, and *rendaku* would be unexpected. Martin (1987:544) analyzes it this way. The adnominal form of the OJ verb corresponding to modern Tōkyō transitive /tate-ru/ 立てる ‘to stand’ was ^{OJ}/tat-uru/, and both OJ verbs had the conclusive form (*shūshikei* 終止形) ^{OJ}/tat-u/. *Jōdai* lists ^{OJ}/tatu+gomo/ in the entry for the transitive verb (not the intransitive verb), but there is no explanation for why the conclusive form would have combined with a following noun. Comprehensive dictionaries list an obscure noun with the modern Tōkyō form /tacu/ meaning ‘upright’ (of the sort used in building a Japanese-style wooden ship), but the earliest citation in the *NKD* entry is from the Japanese-Portuguese dictionary of 1603–04 (Doi et al. 1980).

104 ^{OJ}/o+saka/ is a place name. *Jōdai* does not list it as a headword, but the entry for the corresponding modern Tōkyō form /o+saka/ in *NKD* gives the same *Kojiki* citation as Ogura.

105 ^{OJ}/opo+saka/ is a place name. It does not appear as a headword in *Jōdai*, although it is listed under ^{OJ}/opo/ as an example containing that element. The *NKD* entry for the corresponding modern Tōkyō form /oH+saka/ does not give any phonogram citations, so ^{OJ}/opo+saka/ apparently is not attested in phonograms.

106 ^{OJ}/panipu+zaka/ is a place name. The corresponding modern Tōkyō form is not listed as a headword in *NKD*, but the OJ word appears in *Jōdai* in one citation under ^{OJ}/panipu/ and in another citation under ^{OJ}/saka/. In the former, ^{OJ}/panipu/ is written with phonograms and ^{OJ}/zaka/ with a logogram, and in the latter, ^{OJ}/panipu/ is written with logograms and ^{OJ}/zaka/ with phonograms. Ogura’s source (*Kojiki-den*) seems to have created a composite of these two attestations.

107 The examples that Ogura listed here under ^{OJ}/tat-u/ are various inflected and derived verb forms. The final element in some of these compounds is based not on the intransitive OJ verb corresponding to modern Tōkyō /tac-u/ 立つ ‘to stand’ but on the transitive OJ verb corresponding to modern Tōkyō /tate-ru/ 立てる ‘to stand’. Both OJ verbs had the conclusive form (*shūshikei* 終止形) ^{OJ}/tat-u/. The English gloss in each case is a crude translation for the dictionary form of the compound.

108 No headword matching ^{OJ}/pike-ta/ is listed in *Jōdai* or in *NKD*. It seems to be unattested.

109 *Jōdai* lists only ^{OJ}/ti+dori/, with *rendaku* (cf. modern Tōkyō /či+dori/ 千鳥 ‘plover’). Ogura also included ^{OJ}/ti+dori/ on his list (the fourth item after ^{OJ}/ti+tori/). In the comment following his *Kojiki* examples ending with ^{OJ}/tori~/dori/ ‘bird’, Ogura correctly pointed out that the *man’yōgana* (登) almost always represented ^{OJ}/to/, but the *Jōdai* entry cites the same *Kojiki* example as Ogura and interprets (登) as representing ^{OJ}/do/. As explained below in Chapter 6 note 154, I have omitted the comments like this one from the translation.

110 ^{OJ}/kibwi+pito/ does not appear as a headword in *Jōdai*. It is listed as a compound in the entry for ^{OJ}/pito/, but there is no citation, so it is not clear whether it is actually attested in phonograms. The compound is not listed in *NKD*, although the first element (^{MT}/kibi/) is, but with no citation.

111 ^{OJ}/pisa+kata/ is listed as a headword in *Jōdai* and in *NKD*, but it was a so-called *makura-kotoba* 枕詞, i.e., a conventional descriptive phrase, and its meaning and etymology are uncertain. It survives in modern Tōkyō /hisakata+huri/ 久方ぶり ‘for the first time in a long while’, in which /hisa/ is obviously identified with the etymological root in the modern Tōkyō

adjective /hisaši-i/ 久しい ‘long-continuing’. In the *NKD* entry for ^{MT}/hisa+kata/, the earliest citation with this kind of meaning is from the Japanese-Portuguese dictionary of 1603–04 (Doi et al. 1980), so it is not clear whether ^{OJ}/pisa/ in ^{OJ}/pisa+kata/ is etymologically the same as this element meaning ‘long time’. Nonetheless, if the ^{OJ}/kata/ in ^{OJ}/pisa+kata/ is etymologically the same as ^{MT}/kata/ 方 ‘way’ or ^{MT}/kata/ 形 ‘form’, ^{OJ}/pisa+kata/ is a relevant example for investigating OJ *rendaku*.

112 ^{OJ}/pira+kata/ is a place name. *Jōdai* does not list it as a headword or as an example under either ^{OJ}/pira/ or ^{OJ}/kata/, and the entry for the corresponding modern Tōkyō form /hira+kata/ in *NKD* does not give an OJ citation, so it apparently is not actually attested in OJ.

113 ^{OJ}/asuka+gapa/ is the name of a river, but the OJ citation in both the *Jōdai* entry and in the corresponding *NKD* entry (from *Man’yōshū*) is not in phonograms, so this item appears to be unattested in phonograms.

114 ^{OJ}/yama+siro+gapa/ looks like the name of a river, but it seems to be unattested. It does not appear as a headword in *Jōdai*, and it is not listed as an example under ^{OJ}/yama+siro/ or ^{OJ}/kapa/ either. *NKD* does not list the corresponding modern Tōkyō form /yama+širo+gawa/ as a headword, although it does list the place name /yama+širo/ 山城 (but with no OJ citation).

115 See Chapter 6 note 102 above.

116 ^{OJ}/awo+pito+kusa/ appears as a headword both in *Jōdai* and in *NKD*, and the literal meanings of the morphemes involved are ‘green’, ‘person’, and ‘grass’.

117 The examples that Ogura listed under ^{OJ}/komor-u/ are inflected verb forms. The English gloss in each case is a crude translation for the dictionary form of the compound.

118 The two words ^{OJ}/tuma+gomor-i/ and ^{OJ}/tuma+gomor-u/ are different inflectional forms of the same compound.

119 See Chapter 6 note 104 above.

120 ^{OJ}/yomo+tu+pira+saka/ is a mythical place name denoting a hill on the boundary between this world and the netherworld. It consists of ^{OJ}/yomo/ (-^{OJ}/yomwi/) ‘Hades’, genitive ^{OJ}/tu/, and the compound ^{OJ}/pira+saka/ ‘flat hill’ (the relevant portion for present purposes). There is no entry for ^{OJ}/pira+saka/ alone either in *Jōdai* or in *NKD*.

121 See Chapter 6 note 105 above.

122 The *Jōdai* entry for ^{OJ}/muka+sakur-u/ says that ^{OJ}/sakur-u/ is etymologically related to ^{OJ}/sakar-u/, although it is not exactly clear how ^{OJ}/sakur-u/ developed. In any case, it makes sense to list this compound under ^{OJ}/sakar-u/. ^{OJ}/sakur-u/ ‘to scoop up’ is attested as an independent word but is presumably a different etymon.

123 *Jōdai* lists ^{OJ}/ama+zakar-u/, with *rendaku*, as a headword, but one of the citations in the entry is this same example, and *Jōdai* agrees with Ogura that the pronunciation was ^{OJ}/ama+sakar-u/. The corresponding *NKD* entry says that the form with *rendaku* and the form without *rendaku* both existed.

124 ^{OJ}/apadi+sima/ is a place name, and it does not appear in *Jōdai* either as a headword or as an example under ^{OJ}/sima/. The *NKD* entry for the corresponding modern Tōkyō form /awaji+šima/ does not give any phonogram citations, so ^{OJ}/apadi+sima/ apparently is not attested in phonograms.

125 ^{OJ}/aduki+sima/ is a place name, and it does not appear as a headword in *Jōdai*, but it is listed under ^{OJ}/aduki/ as an example containing that element, along with the same *Nihon shoki* citation that Ogura gave.

126 ^{OJ}/akidu+sima/ is a place name (another name for *Yamato*), and it does not appear in *Jōdai* either as a headword or as an example under ^{OJ}/sima/, but the *NKD* entry for the corresponding modern Tōkyō form /akizu+šima/ includes OJ phonogram citations.

127 The example Ogura actually cited here had the *man'yōgana* (瀨灘會虛赴), which represent ^{OJ}/minasokopu/. This item is listed as a headword in *Jōdai* and in *NKD*, but it was a so-called *makura-kotoba* 枕詞, i.e., a conventional descriptive phrase, and its meaning is uncertain, although it has been suggested that it might contain ^{OJ}/mi+na+soko/ ‘bottom of a body of water’. I have substituted an example here from *Man'yōshū* (rather than *Nihon shoki*) that is uncontroversially an instance of ^{OJ}/mi+na+soko/.

128 The ^{OJ}/na/ in ^{OJ}/ta+na+soko/ and in ^{OJ}/mi+na+soko/ just above appears only in lexicalized items and is usually described as a genitive particle that was already obsolete, although it is not certain that this characterization is correct (Frellesvig 2010:131). In his comments above on Lyman’s remark about phrasal examples, Ogura noted that that *rendaku* was unexpected following the OJ genitive particles ^{OJ}/no/, ^{OJ}/ga/, and ^{OJ}/tu/, but he did not say anything about ^{OJ}/na/ except to mention that Lyman apparently took ^{MT}/na/ in ^{MT}/unabara/ 海原 ‘open sea’ as an altered form of genitive ^{MT}/no/. Whatever the origin of ^{OJ}/na/, we see an etymological instance of *rendaku* following it in the obsolescent modern Tōkyō word /ta+na+gokoro/ 掌 ‘palm of the hand’ (cf. /te/~/ta/ 手 ‘hand’, /kokoro/ 心 ‘heart’). Modern speakers who know this word may not analyze ^{MT}/na/ as a separate element, but a corresponding OJ word is attested, although not in phonograms. *Jōdai* does not list ^{OJ}/ta+na+gokoro/ as a headword, but the entry for ^{OJ}/ta+na+ura/ ‘palm of the hand’ (cf. ^{MT}/ura/ 裏 ‘inner surface’) mentions ^{OJ}/ta+na+gokoro/ as another word with the same meaning, although there is no citation. There is a *Nihon shoki* citation in the *NKD* entry for ^{MT}/ta+na+gokoro/, but ^{OJ}/ta+na+gokoro/ is not written in phonograms, so we cannot be sure that it had *rendaku*. Nonetheless, it seems fair to say that Ogura was right not to group this ^{OJ}/na/ with ^{OJ}/no/, ^{OJ}/ga/, and ^{OJ}/tu/. Recall, incidentally, that one of Lyman’s phrasal examples was ^{MT}/ama+no+gawa/ 天の河 ‘Milky Way’, and the corresponding OJ item had *rendaku* following ^{OJ}/no/: ^{OJ}/ama+no+gapa/ (Vance 2007:164–165). See the comment on this problematic example in the Appendix.

129 See Chapter 6 note 107 above.

130 *Jōdai* lists ^{OJ}/ko+dati/ (corresponding to modern Tōkyō /ko+dači/ 木立ち ‘stand of trees’) as a headword, but it agrees with Ogura that the *man'yōgana* in this *Nihon shoki* example represented ^{OJ}/ko+tati/. The entry in *NKD* cites the same example and says that a form without *rendaku* used to exist as an alternative to the form with *rendaku*.

131 *Jōdai* does not list ^{OJ}/kata+tati/ as a headword, but it appears as an example under ^{OJ}/kata/ ‘one of two’ (cf. ^{MT}/kata/ 片), written with the *man'yōgana* that Ogura gave. The *Jōdai* entry does not give a definition, and *NKD* does not list a corresponding headword, so the gloss is just a surmise.

132 ^{OJ}/se+ta/ is a place name, and it does not appear in *Jōdai* either as a headword or as an example under ^{OJ}/se/ or ^{OJ}/ta/. The *NKD* entry for the corresponding modern Tōkyō form /se+ta/ 瀬田 does not give any phonogram citations, so ^{OJ}/se+ta/ apparently is not attested in phonograms.

133 Ogura provided no kanji and no gloss for ^{OJ}/ozapye+ta/, and there is no attested OJ element that begins ^{OJ}/ozapye/. This example appears to be an error.

134 No headword matching ^{OJ}/wono+pe+ta/ is listed in *Jōdai* or in *NKD*. It seems to be unattested. Ogura’s kanji gloss is (尾上田), implying that first element in the compound is ^{OJ}/wono+pe/ ‘mountain top’.

135 ^{OJ}/nikitatu/ is a place name. It does not appear as a headword in *Jōdai*, and it is not listed as an example under ^{OJ}/niki/ or ^{OJ}/tu/. Its modern Tōkyō counterpart /nikitacu/ 熟田津 does appear as a headword in *NKD* (segmented as /nikita+cu/), but it is not represented in phonograms in the OJ citation in the entry (from *Man'yōshū*). For ^{OJ}/nikitatu/ to be relevant here, we have to follow Ogura and assume that ^{OJ}/ta/ is etymologically the morpheme meaning ‘paddy’, but the kanji (田) in the modern spelling is not much to go on, since place names are often written with *ateji*.

136 No headword matching ^{OJ}/pa+da/ is listed in *Jōdai* or in *NKD*. It seems to be unattested. Ogura did not give a kanji gloss, but his source (*Nihon shoki tsūshaku*; see Chapter 6 note 17 above) apparently had (葉田), implying that first element in the compound is ^{OJ}/pa/ ‘leaf’. However, no such item appears as an example in *Jōdai* under ^{OJ}/pa/ ‘leaf’ or ^{OJ}/ta/ ‘paddy’.

137 This emphatic prefix *i* attached to OJ verbs (see Chapter 6 note 71 above).

138 ^{OJ}/sas+take/ is listed as a headword in *Jōdai* and in *NKD*, but it was a so-called *makura-kotoba* 枕詞, i.e., a conventional descriptive phrase, and its meaning is uncertain. It was added to nouns connected with the imperial court, and the *NKD* entry suggests that E2 was ^{OJ}/sas-u/, an intransitive verb meaning ‘to grow out’, since the vigorous growth of bamboo (i.e., ‘flourishing’) makes sense as an honorific expression. If this explanation is correct, this example was not a compound but the phrase ^{OJ}/sas-u take/, with the adnominal form (*rentaiki* 連体形) of the verb modifying the noun ^{OJ}/take/ ‘bamboo’, and *rendaku* would not be expected. See Chapter 6 note 103 above.

139 *NKD* lists the corresponding modern Tōkyō form /tari/ as a headword and describes it as a suffix. *Jōdai* lists ^{OJ}/mi+tari/ ‘3 people’ and ^{OJ}/yo+tari/ ‘4 people’ as headwords. The obvious analysis for the two forms in this series that remain in use in modern Tōkyō is to treat ^{MT}/ri/ as a morph: ^{MT}/hito+ri/ ‘1 person’, ^{MT}/futa+ri/ ‘2 people’.

140 As the *NKD* entry for ^{MT}/tari/ says, since the usual realization of the OJ morpheme meaning ‘two’ was ^{OJ}/puta/, it is not clear whether ^{OJ}/putari/ ‘2 people’ should be analyzed as ^{OJ}/puta+ri/ or ^{OJ}/pu+tari/. It could be an example of haplology.

141 ^{OJ}/ya+tari/ is listed in the index in *Jōdai*, but it does not appear as a headword or in any of the examples under ^{OJ}/ya/ ‘eight’. The first *NKD* citation (under the corresponding modern Tōkyō form /ya+tari/ 八人) is from 1170, which suggests that ^{OJ}/ya+tari/ is not actually attested.

142 The examples that Ogura listed here under ^{OJ}/tar-u/ are inflected verb forms. The English gloss in each case is a crude translation for the dictionary form of the compound.

143 ^{OJ}/si+dar-u/ appears as a headword in *Jōdai*, and the entry gives the same *Nihon shoki* citation as Ogura, but the earliest citation in *NKD* is post-OJ. It is not clear what the initial element ^{OJ}/si/ is etymologically. Martin (1987:750) suggests a connection to ^{OJ}/sinap-u/, which corresponds to ^{MT}/šina-u/ 撓う ‘to bend’.

144 As explained in Chapter 6 note 14 above, the romanization I am using for Old Japanese distinguishes *kō-rui* 甲類 ‘Type A’ from *otsu-rui* 乙類 ‘type B’ syllables, but it is uncertain whether the first syllable in the root of the verb meaning ‘to take’ was *kō-rui* or *otsu-rui*. The *Jōdai* entry for the verb notes that there was already confusion in the *Kojiki* and *Nihon shoki* phonogram spellings, so I have just parenthesized the (w) that indicates *kō-rui*, following Martin (1987:771).

145 Ogura provided no gloss for ^{OJ}/not(w)ori/, and it does not match any attested OJ word. It appears to be an error.

146 The *Jōdai* entry for ^{OJ}/tuma+d(w)ori/ says that it is uncertain whether E1 is the noun meaning ‘hem’ or the noun meaning ‘wife’, but Ogura’s gloss has (褰) (cf. ^{MT}/cuma/ 褰 ‘kimono skirt/hem’), and this is how the *NKD* entry interprets it. The *Jōdai* and *NKD* headwords both have *rendaku*, but *NKD* uses katakana (ト) (*to*) to indicate the pronunciation of the phonogram (怒) in the *Nihon shoki* example that Ogura cited. This is presumably just a misprint.

147 No headword matching ^{OJ}/atwo+t(w)ori/ is listed in *Jōdai* or in *NKD*, but the *Nihon shoki* example that Ogura cited appears in both under ^{OJ}/atwo/ (^{MT}/ato/ 跡 in *NKD*) ‘foot end when sleeping’ (the antonym of ^{OJ}/makura/ in Ogura’s next example). It appears that this example was actually a phrase rather than a compound.

148 No headword matching ^{OJ}/makura+t(w)ori/ is listed in *Jōdai* or in *NKD*, but the *Nihon shoki* example that Ogura cited appears in both under ^{OJ}/makura/ (^{MT}/makura/ 枕 in *NKD*) ‘head end when sleeping’ (the antonym of ^{OJ}/atwo/ in Ogura’s previous example). It appears that this example was actually a phrase rather than a compound.

149 ^{OJ}/tare+ya+si+pito/ is listed as a headword in *NKD*, but the entry describes it as probably a set phrase rather than a compound and says that ^{OJ}/ya/ and ^{OJ}/si/ are OJ particles. It is not listed as a headword in *Jōdai*.

150 ^{OJ}/nanipa+pito/ appears as a headword in *Jōdai*, but it is not written in phonograms in the citation (from *Man’yōshū*). It is not listed as a headword or as an example under ^{MT}/naniwa/ (a place name) in *NKD*.

151 The *Nihon shoki* citation that Ogura gave appears in the commentary in the *Jōdai* entry for the verb ^{OJ}/nigipap-u/ ‘to thrive’ (corresponding to ^{MT}/nigiwa-u/ 賑わう ‘to bustle; to thrive’). The last kanji in the *Nihon shoki* representation of ^{OJ}/nigipaya+pi/, (饒速日), implies that ^{OJ}/pi/ is etymologically ‘sun, day’, as Ogura assumed.

152 ^{OJ}/iri+bikwo/ does not appear in *Jōdai* either as a headword or as an example under ^{OJ}/pikwo/. It does appear as a headword in *NKD*, with the same *Nihon shoki* citation that Ogura gave, and according to the entry, the meaning of ^{OJ}/iri/ is unclear, although ^{OJ}/bikwo/is probably the *rendaku* form of ^{OJ}/pikwo/ ‘boy’.

153 These two examples (^{OJ}/osi+pirak-i/ and ^{OJ}/osi+pirak-ane/) are both forms of the same verb (corresponding to Modern Tōkyō /oši+hirak-u/ 押し開く ‘to push open’). Frellesvig (2010:56) describes OJ verb forms ending in ^{OJ}/ane/ as optatives.

154 In this part of Ogura’s original text, each set of *Kojiki* or *Nihon shoki* examples involving the same final element is followed by a note, set in smaller type, about the phonograms used to write the initial syllable of that element. The note gives a count of how many instances of each phonogram seem to have represented a syllable beginning with a voiceless obstruent and how many seem to have represented a syllable beginning with a voiced obstruent (not including the examples that Ogura actually listed). I have omitted all these notes in the translation. As Ogura said, the numbers were only approximate even when he gave them, and later scholarship has made it pointless to include them here. *Jōdai* includes an appendix (pp. 890–903) showing what each phonogram represented in each OJ source.

155 The compound ^{OJ}/koto+ba/ (corresponding to modern Tōkyō /kotoba/ 言葉 ‘word’) is attested, but the phrase ^{OJ}/koto no pa/ apparently is not. It is not listed as a headword in *Jōdai*, and the earliest citation in the *NKD* entry for ^{MT}/koto+no+ha/ is from ca. 900. It is possible, of course, that the ancestor of this set phrase existed in OJ and is just unattested. In any case, as we saw in §1.2, etymologies like the one Ogura suggested here for ^{OJ}/koto+ba/ assume the existence of a prehistoric phrase containing the genitive particle, and it does not matter whether the phrase and the compound co-existed in OJ. *Jōdai* does list the set phrase ^{OJ}/pi+ni+pi+ni/ ‘every day’ as a headword.

156 Yanaike (1991:63, note 36) suggests that Lyman may have been hinting at an etymology for the obsolete negative verbal suffix /de/ ‘not V-ing’, which is listed as a headword in H2. Yanaike speculates that Lyman could have seen it as a contraction of /N/ (as in /nom-aN/ ‘not drink’ < adnominal ^{EMJ}/nom-anu/) and gerundive /te/. As Martin (1987:111) notes, this /de/ appeared in the Heian Period as a substitute for the sequence /zu/ followed by /te/, in which /zu/ is the last syllable of negative conclusive forms (e.g., ^{EMJ}/nom-azu/ ‘not drink’), and the H2 entry explicitly links /de/ and /zute/. Martin mentions that some scholars have proposed that /de/ originated as a contraction of an unattested ancestor that contained a nasal, but it is hard to imagine that this is what Lyman had in mind.

157 Ogura’s translation of this excerpt from Lyman’s pamphlet actually had “アキノヒト” (^{MT}/aki no hito/) for Lyman’s “*akinai no hito*” here, and this change was an improvement, as noted in the comment added to this example in the Appendix. The *NKD* entry for ^{MT}/akiNdo/ 商人 ‘trader’ says that it goes back to an earlier form /akibito/, and ^{OJ}/aki+bito/ and ^{OJ}/aki/ ‘trading’ are both listed as a headwords in *Jōdai*. Lyman was presumably led astray by the fact that ^{OJ}/aki/ did not survive as an independent word. The modern Tōkyō noun /akinai/ 商い ‘trading’ is derived from the adverbial form of the verb /akina-u/ 商う ‘to engage in trade’. This verb is a derivative of the obsolete noun (^{OJ}/aki/), and it already existed in OJ. The earliest citation in the *NKD* entry for the ancestor of ^{MT}/akinai/ is from ca. 900.

158 Ogura’s translation of this sentence actually had (クロンボ) (*ku ro n bo*), representing ^{MT}/kuroNbo/ (with a short final vowel), whereas Lyman had “kuromboo” (with /oo) representing a long vowel). On the other hand, Ogura gave (バウ) (*ba u*), representing /boH/ (with a long vowel), for the last syllable of each of the other two examples in this sentence. As noted in the comments added to these items in the Appendix, *NKD* lists both a form with long /boH/ and a form with short /bo/ as headwords for all three. Ogura’s choices indicate that this variability was already established in 1910.

159 As noted in the comment added to this item in the Appendix, Lyman’s pamphlet actually had “kadzu” and “koodzu” here, but it seems clear that he was interested in words meaning ‘paper mulberry’. The word in use in modern Tōkyō is /koHzo/ 楮, although dictionaries list /kazo/ as an alternative form. Ogura’s translation of Lyman’s passage gave (カツ) (*ka tsu*“) and (カウツ) (*ka u tsu*“), representing modern Tōkyō /kazu/ and /koHzu/, but he added the kanji (麴) in parentheses, implying that Lyman intended words meaning ‘malt’ (cf. ^{MT}/koHji/ 麴 ‘malt’). It is not surprising that Ogura was confused by Lyman’s “kadzu” and “koodzu” here, but his “correction” is puzzling, since the *NKD* entry for /koHji/ 麴 ‘malt’ does not give /kazu/ or /koHzu/ as an alternative pronunciation. Of course, it could be that the kanji (麴) in Ogura’s text was a typographical error.

160 Ogura inserted a parenthetical comment at this point in his translation of this quotation, noting that it does not seem appropriate to describe ^{MT}/ji/ 路 ‘road’ or ^{MT}/de/ で ‘at; with’ as a word beginning with a voiced obstruent. There is no question that he was right about /ji/. *NKD* lists it as a headword, but the entry describes it as suffix-like, and it never appears word-initially. Locative/instrumental /de/ is more problematic. Like all case particles, it clearly is not a suffix, but it is less independent than a prototypical word, and it is not easy to decide whether it should be called a clitic (Vance 1993).

161 Ogura annotated the kanji (角篋) with the *furigana* (ツノベラ) (*tsu no be ra*), so there is no doubt that he intended a compound containing the elements ^{MT}/cuno/ ‘horn’ and ^{MT}/hera/ ~/bera/ ‘spatula’, but no such headword appears in *NKD*. Assuming such a word was in use when Ogura was writing, any definition I might offer would be sheer speculation.

162 The alternative pronunciations /aši+hara/, /sasa+hara/, and /suna+hara/ are also listed as headwords in *NKD*, and these headwords are followed by full entries. The headwords with /w/ (the forms that Ogura cited) are just followed by cross-references to the headwords with /h/, implying that the forms with /h/ are now the preferred pronunciations. Ogura also included 篠原 on his list, but I have omitted it. These kanji could represent /sasa+hara/, but if so, this item is a duplication. The same kanji could also represent /šino+hara/, but *NKD* does not give an alternative pronunciation with /w/ for this word, so it would be irrelevant here. (The modern Tōkyō nouns /sasa/ and /šino/ denote very similar plants.)

163 Ogura annotated the kanji 側 with the *furigana* 片端し, representing the modern Tōkyō pronunciation of the classical adjective /katawa+ši/ 片端し ‘disabled’, but this adjective is a derivative involving the suffix /ši/, which I discuss briefly in the Appendix in my commentary on Lyman’s list 4(c). The word /kata+wa/ 片端 is still in use, and according to the entry in *NKD*, it is etymologically a compound of elements corresponding to modern Tōkyō /kata/ 片 ‘incomplete’ and /ha/ 端 ‘edge’. It is the /w/ that is relevant, so I have substituted /kata+wa/ here in the translation.

164 This word is pronounced /kehai/ in modern Tōkyō, and it is usually written 気配 (*ateji* for which the earliest *NKD* attestation is 1916). The earliest attestation under the headword ^{MT}/kewai/ in *NKD* is from the late 10th century, spelled with the hiragana けはひ (*ke ha hi*) and presumably pronounced [kewawi] at the time. The *NKD* entry says that the etymology is uncertain. As mentioned briefly in §4.6, [w] subsequently disappeared in most environments, remaining only when immediately followed by ^{MT}/a/, so /kewai/ is the expected modern Tōkyō form. But the hiragana けはひ could just as well have represented /kehai/, and this pronunciation is listed as a headword in the 1886 third edition of Hepburn’s dictionary. In any case, since we do not know the etymology of ^{MT}/kewai/, there is no way to know for sure whether it is a relevant example here, although it is easy to understand why Ogura thought it was.

165 The alternative pronunciation /ki+hada/ is also listed as a headword in *NKD*, and this headword is followed by the full entry. The headword with /w/ (the form that Ogura cited) is just followed by a cross-reference to the headword with /h/, implying that the form with /h/ is now the preferred pronunciation.

166 The second element in /sugiwai/ is probably the same etymologically as what we see in /saiwai/ 幸い ‘good fortune’, /nigiwai/ 賑わい ‘liveliness’, and /nariwai/ 生業 ‘livelihood’, the last of which is a synonym of /sugiwai/ and is typically written with the same kanji. *NKD* lists /wa-u/ as a headword and describes it as a suffix that is added to nominal elements to form verbs. Martin (1987:784) describes it as a “bound verb” that had the OJ form ^{OJ}/pap-u/, and he suggests that it might be etymologically identical to ^{OJ}/pap-u/ ‘to creep’, corresponding to modern Tōkyō /ha-u/ 這う. The connection between the noun /nigiwai/ and the verb it is derived from (/nigiwa-u/; see Chapter 6 note 151 above) is obvious to a modern Tōkyō speaker. The OJ counterpart of the noun /saiwai/ is attested as ^{OJ}/saki+papi/, and so is the related verb ^{OJ}/saki+pap-u/ ‘to have good fortune’. Both the noun and the verb are attested without /k/ in Early Modern Japanese, but the verb is now obsolete. The OJ counterpart of the noun /nari+wai/ is attested as ^{OJ}/nari+papi/, and Martin (1987:732) lists the related verb as a reconstructed form (^{OJ}/nari+pap-u/), but it is unattested. Etymologically, the /nari/ in /nariwai/ is related to the modern Tōkyō verb /nar-u/ 成る ‘to become’. As for /sugiwai/ (the item that Ogura gave as an example), the earliest citation in the *NKD* entry is from 1746, and the historical kana spelling in use before 1946 was すぎはひ (*su gi ha hi*), but Martin (1987) does not list it, and the *NKD* entry

does not suggest an etymology. A connection to the modern Tōkyō verb /sugi-ru/ 過ぎる ‘to pass by; to elapse’ seems plausible, so this might be what Ogura had in mind.

167 *NKD* lists /kašiwa+bara/ only as a place name, not as a common noun, so I am assuming that this is what Ogura had in mind here. It is also used as a surname.

168 Actually, modern Tōkyō /ha⁺ra/ 原 ‘field’ and /hara⁺/ 腹 ‘belly’ differ in accent, so they are not exact homophones, but it is not unusual even for linguists to describe Japanese words that differ only in accent as homophonous.

169 *NKD* lists a headword with the modern Tōkyō form /he/ (corresponding to this OJ *pye*), but it does not exist as an independent word. In fact, according to the entry in *Jōdai*, it was already “suffix-like” in OJ (see the comments on *michi-no-be* in the Appendix).

170 The word given here as *i-o* (implying ^{MT}/io/) is obsolete, and so is its second element, which would be ^{MT}/ho/, although it is not attested as an independent word even in OJ. *NKD* lists both as headwords, with these pronunciations, but these forms are anachronistic. In OJ, this word for ‘500’ was ^{OJ}/ipo/, but most instances of word-medial ^{OJ}/p/ had weakened to [w] and merged with OJ/w/ by the late 10th century in the “standard” Kyōto dialect. (Word-medial ^{OJ}/p/ disappeared completely before /u/, since /wu/ was phonotactically prohibited.) As mentioned briefly in §4.6, [w] subsequently disappeared almost everywhere, remaining only before ^{MT}/a/. Word-initial ^{OJ}/p/ developed into [ϕ] and then later into the allophones of ^{MT}/h/: [h] before ^{MT}/e/, ^{MT}/a/, and ^{MT}/o/, and [ç] before ^{MT}/i/ and ^{MT}/y/, remaining [ϕ] only before ^{MT}/u/. (For a more detailed explanation of the changes that ^{OJ}/p/ has undergone, see Frellesvig 2010:201–210.) The forms ^{MT}/io/ for ‘500’ and ^{MT}/ho/ for ‘hundred’ exist only in the sense that this is how modern Tōkyō speakers studying pre-modern Japanese read these obsolete words aloud.

171 Ogura’s description of these phonological changes is essentially correct, but he just used katakana to represent the syllables of interest: ⟨ヒ⟩ (*hi*) for ^{MT}/hi/ 火 ‘fire’, ⟨ヘ⟩ (*he*) for anachronistic ^{MT}/he/ 辺 ‘area’ (see Chapter 6 note 169 above), and ⟨ホ⟩ (*ho*) for anachronistic ^{MT}/ho/ 百 ‘hundred’ (see note 170 just above) and ^{MT}/ho/ 穂 ‘(grain) ear’. Consequently, we cannot tell whether he thought that the consonant involved used to be a bilabial stop. Lyman, on the other hand, noted explicitly that the ancestor of 19th-century Tōkyō /h/ had once been pronounced something like [p]. In the introductory portion of his article on *rendaku* (Lyman 1894:162), he described /h/ as “representing an ancient surd labial” (see §5.2).

172 As mentioned in Chapter 6 note 75, when Ogura was writing, Tōkyō Japanese typically had syllable-initial [ŋ] rather than [g] word-medially (see §4.6 for details). The “standard” pronunciations of the Sino-Japanese morpheme meaning ‘music’ would have been the same as those prescribed in *NHK*: [g] word-initially, as in /gaku-daN/ 楽団 ‘orchestra’, but [ŋ] word-medially, as in /oN-gaku/ 音楽 ‘music’.

173 Yamada Yoshio 山田孝雄 (1873–1958) was a prominent scholar whose work on the Japanese language was very influential (Tsukishima 1955), and his 1904 article is listed in the references at the end of this book. Despite Ogura’s generous assessment, Yamada’s article does not provide much of interest for a modern linguist working on *rendaku*.

Chapter 7

1 Several wide-ranging introductory surveys emerged from the NINJAL Rendaku Project (Vance 2015a, 2016, 2017; Vance, Kaneko, and Watanabe 2017a). The articles in the two project anthologies (Vance and Irwin 2016; Vance, Kaneko, and Watanabe 2017b) treat many aspects of rendaku in detail and provide extensive bibliographies, but interest in rendaku has inspired so much research, especially in the last 50 years, that a truly comprehensive survey would be a mammoth undertaking.

2 Strictly speaking, *nigori* denotes either the pronunciation of a *dakuon* or the *dakuten* 濁点 diacritic that represents it in kana spelling, as in (た^ん) for /da/ versus (た) for /ta/. In terms of kana spelling, rendaku is just the addition of *dakuten*, as explained in §1.1. Native speakers of Japanese do not ordinarily think in terms of segment-sized units, and linguists writing in Japanese about Japanese often find it convenient to use terms like *dakuon*, as Ogura did (see Chapter 6 note 6). Lyman, of course, did think in terms of consonants and vowels, as we saw in §4.5. In any case, in the context of Lyman's 1894 article, the mismatches between Japanese and English terminology are harmless.

3 When a Sino-Japanese morpheme that appears word-initially with /h/ or /f/ occurs as the second element in a binom immediately following /N/, if /b/ does not appear instead of /h/ or /f/, then /p/ usually does, although not absolutely consistently (McCawley 1968:77–78; Kubozono 2005:18–19). One of the rare exceptions is /zeN-haN/ 前半 ‘first half’, (cf. /haN-gaku/ 半額 ‘half price’), but the alternative pronunciation /zeN-paN/ is also in use. As explained below in §7.3.3, it might well be preferable not to treat any binom-medial voiced obstruents as instances of rendaku, and the same logic would apply to binom-medial /p/. Lyman, however, did not hesitate. To give just one example, he cited /hoN-goku/ 本国 ‘native country’ (cf. /koku-hoH/ 国宝 ‘national treasure’) as an instance of rendaku (Lyman 1894:163).

4 Frellesvig (2010:201–210) provides a more detailed explanation of the changes that ^{OJ}/p/ has undergone. See also Chapter 1 note 4 and Chapter 6 note 170.

5 This /teQ-poH/ is the only Sino-Japanese binom with medial /p/ that appears with rendaku in compounds that an ordinary modern speaker is likely to know. The comparable examples with other second elements that I have found are listed below in Table 7.2. Although not given in pronunciation dictionaries (*NHK*, *Meikai*), /mizu+teQ-poH/ for the last item in Table 7.1, without rendaku, seems to be gaining ground. Some of my undergraduate students have told me that they use the form without rendaku, and I have seen water pistols for sale in toy stores with (みずてっぼう) (*mi zu te^{tsu} po u*) on the packaging.

6 The *NKD* entry for /mizu+deQ-poH/ does not mention the meaning ‘syringe’, but it does say that the word was used in the 19th century to refer to a kind of water cannon, that is, a device used in firefighting. A water cannon involves a pump, of course, and the kanji (唧筒) were used as *ateji* for the Dutch loan /poNpu/ ポンプ ‘pump’ and also for /mizu+hajiki/ 水弾き ‘hand-operated firefighting pump’, which the *NKD* entry for /mizu+deQ-poH/ offers as a synonym. The upshot is that using (唧筒) to represent /mizu+deQ-poH/ made sense in the 19th century. Hepburn marked /mizu+deQ-poH/ as colloquial in his 1886 third edition, and this annotation gives us a hint about his definition. It seems very likely that /mizu+deQ-poH/ was slang for ‘syringe’, and since Hepburn was a doctor, it could well be that he knew only this meaning of the word and was unaware of its more literal meanings. The source for the *ateji* was presumably a Chinese word (cf. modern Mandarin *jītǒng* 唧筒 ‘pump’, written with a variant of the first character). The kanji (唧筒) have also been used for /soku-toH/~/šoku-toH/

‘pump’, but this Sino-Japanese binom appears to have been coined simply by combining Sino-Japanese morphemes that can be represented by the two kanji. The dates of the first attestations in *NKD* are ca. 1800 for /poNpu/ and sometime in the 1850s for /soku-toH/).

7 Two examples were excluded from Table 7.2 because the earliest attestation dates in their *NKD* entries suggest that they were not coined before 1872 (when H2 was published): /de+zuQpari/ 出突っ張り ‘being on stage continuously’ and /ama+zuQpa-i/ 甘酸っぱい ‘sweet and sour’. The E2s, /cuQ+pari/ ‘prop(ping)’ and /su+Qpa-i/ ‘sour’ are both listed as headwords in H2. The normative kana spelling for /de+zuQpari/, however, is <でずっぱり> (*de su^{tsu} pa ri*), with *dakuten* added to the letter for /su/ rather than /tsu/, suggesting that present-day speakers do not see the connection to the etymological E2 (see §1.1).

8 It seems safe to say that none of the longer compounds in Table 7.2 is in common use, since none of them is listed in Kondō and Takano (1986) (a medium-size Japanese-English dictionary) or in *NHK* (the Japanese public broadcaster’s pronunciation dictionary).

9 See §4.4 for an explanation of accent phrases.

10 Vance (2008:192–195) provides a brief introduction to accentually non-unified compounds. According to Kubozono’s pioneering treatment of such compounds, which he calls “prosodically non-unified compounds” (Kubozono 1993:9), if one or both elements in a coordinate compound is longer than two moras, the compound is likely to be accentually non-unified (Kubozono 1993:19–20). Thus, since /hiH·ki+heN·pa/ consists of two three-mora elements, if it were still in use today, it would probably be accentually non-unified, just like the other two longer compounds in Table 7.3.

11 It is fairly easy to do a thorough, systematic search using a reverse-lookup dictionary, because any Sino-Japanese binom with a medial /p/ will match this template: . . . {/N/ or /Q/} /p/ V ({/V or /H/ or /N/}). Aside from Sino-Japanese binoms with medial /p/, /šiQ+po/ 尻尾 ‘tail’ (native Japanese), /haN+pa/ 半端 ‘halfway’ (Sino-Japanese + native Japanese), /teNpura/ 天麩羅 ‘tempura’ (borrowed from Portuguese), and /taNpopo/ 蒲公英 ‘dandelion’ (uncertain etymology; possibly mimetic) are also listed as headwords in H2, although none of them occurs as E2 in any compound listed in H2. Even if we look at compounds listed in *NKD*, /šiQpo/ does not occur in any as E2, /haN+pa/ occurs only in /čuH·to+haN+pa/ 中途半端 ‘half-done’ (earliest *NKD* attestation 1906), and /teNpura/ occurs only in /za·šiki+teNpura/ 座敷天麩羅 ‘tempura in a Japanese-style room’ (earliest *NKD* attestation 1925). *NKD* lists seven compounds with /taNpopo/ as E2, but none is common enough to appear in Kondō and Takano (1986) or in *NHK*. Two are attested before 1872: /murasaki+taNpopo/ 紫蒲公英 ‘purple dandelion’ (1847) and /yanagi+taNpopo/ 柳蒲公英 ‘willow dandelion’ (1809).

12 I will not go into the details of how an OCP(-like) interpretation of Lyman’s Law might be implemented in a theoretical treatment, since doing so would require a long digression that would do nothing more than summarize the readily available accounts in the literature (e.g., Itō and Mester 1986, 2003:36–38; Kawahara and Zamma 2016:18–26).

13 Like an E2-initial /p/ or E2-initial voiced obstruent, an E2-initial sonorant (/m n r y w/) also makes *rendaku* impossible, as in /hito+mae/ 人前 ‘where people can see’ (cf. /hito/ ‘person’, /mae/ ‘front’). These sonorant phonemes are all realized ordinarily as voiced, but aside from one eccentric and little-known article (Miller 1984), no one has suggested grouping them with voiced obstruents in connection with *rendaku*. There is, of course, no diacritic to suggest a parallel in the kana spelling of sonorant-initial moras, but, more important, there is ample evidence in the existing vocabulary that an E2-medial sonorant does not inhibit *rendaku*.

14 Researchers who have suggested that the inhibiting effect of a voiced obstruent is limited to the second mora of E2 include Okumura (1955), Nakagawa (1966:302), Sakurai (1966:41), and Maeda (1977). Martin (1952:48), on the other hand, takes the same position as Lyman.

15 Iwanami Shoten Jiten Henshūbu (1992), a large reverse-lookup dictionary that includes many obscure and obsolete words among its entries, lists 26 words ending in /suzume/ 雀 ‘sparrow’, 19 ending in /kujira/ 鯨 ‘whale’, 9 ending in /tokage/ 蜥蜴 ‘lizard’, and 4 ending in /hucuji/ 羊 ‘sheep’. There are no entries ending in the hypothetical voiced allomorphs of these four morphemes: */zuzume/, */gujira/, */dokage/, */bicuji/.

16 Some Optimality Theory accounts of Lyman’s Law see it as a consequence of a constraint interaction that limits voiced obstruents to one per morph (e.g., Itô and Mester 2003:36–38). Leaving aside the difficulties caused by polymorphemic E2s, these accounts depend crucially on the premise that a non-initial voiced obstruent anywhere in an E2 inhibits *rendaku*.

17 The three-element compounds in Figure 7.1 are both listed in *Kōjien* and *Daijirin*. The entry for ⁰¹/kagari/ in *Jōdai* suggests that it is etymologically related to the verb /kagar-u/ 繻る ‘to sew’. The morpheme /hači~/bači/ 鉢 ‘bowl’, is etymologically Sino-Japanese.

18 In fact, some dictionaries (e.g., *Daijirin*) list /hacu+gao/ 初顔 as a synonym for /hacu+kao+awase/ 初顔合わせ ‘first meeting’, and I have heard announcers on NHK TV *sumō* broadcasts use /hacu+gao/ in this meaning. It is interesting that the voiced allomorph /gao/ appears in a compound consisting of the same morphemes as the first two elements of /hacu+kao+awase/. Needless to say, /gao/ is on a right branch in /hacu+gao/. A problem here is that some speakers accept /hacu+gao+awase/; I am grateful to Seiji Watanabe and Momoko Ushiki for bringing this fact to my attention.

19 Kubozono (2005:11–15) relates the Right-Branch Condition to the idea that the right-branching structure {A{BC}} cross-linguistically disfavors phonological indicators of unification (such as *rendaku*) across the boundary between A and B. See §7.8.

20 As for graduate students in my classes over the years, the percentage claiming to have the predicted intuitions about the Right-Branch Condition has been consistently higher for students in linguistics than for students in Japanese studies. The reactions of students who lack the intuitions have ranged from skepticism to bewilderment.

21 The examples in Table 7.5 are not obscure words. All five are listed in a medium-size Japanese-English dictionary (Kondō and Takano 1986).

22 The etymology of /furo/ is uncertain, but according to the entry in *NKD* it is not Sino-Japanese, so the two kanji (風呂) are *ateji* (used as phonograms). The oldest attestation is from 1345. The semantic rationale for the compound /furo+šiki/ is that it was used to wrap clothes before taking a bath. The three-element compound /oH+buro+šiki/ is usually encountered in the idiom *ō-buroshiki o hirogeru* 大風呂敷を広げる ‘to tell a tale’ (literally ‘to open a big wrapping cloth’). Native speakers will accept /oH+buro/ in the meaning ‘big bath’, but {{/oH+buro/}+/šiki/} is clearly the wrong constituent structure for the meaning ‘big wrapping cloth’.

23 There is an extensive literature on the accent of compounds in modern Tōkyō Japanese, including Hirayama (1960:907–912), McCawley (1968:157–172), Tsujimura and Davis (1987), Satō (1989:234–252), Kubozono, Itō, and Mester (1997), and Matsumori (2016).

24 *Meikai* recognizes both pronunciations: /kita+a⁺merika/~kita+ame⁺rika/.

25 My feeling is that /ya/ ‘house’ and /ko/ ‘small’ are too “lexical” (i.e., not “grammatical” enough) to be considered affixes, but the distinction between an affix and a bound root is problematic. One way of defining a root is to say that it is a morph that realizes a lexical (or content) morpheme, and one way of defining an affix is to say that it is a bound morph that realizes a grammatical (or function) morpheme (Allerton 1979:213). Given these definitions, a root can be either free or bound, and we have to decide whether a morpheme realized by a

bound morph is lexical or grammatical before we can identify that morph as a root or an affix. The problem, of course, is that the distinction between lexical and grammatical morphemes is not clear-cut (Lyons 1968:435–438), so neither is the distinction between bound roots and affixes.

26 These terms are translations of terms that are often used in Japanese language research: *hifuku-kei* 被覆形 ‘covered form’ and *roshutsu-kei* 露出形 ‘exposed form’. The /e/~~/a/ alternation (as in /ame/~~/ama/) is the most common of the exposed–covered alternations that have survived (at least arguably) as synchronic alternations in modern Tōkyō Japanese, but fewer than 20 morphemes are involved.

27 *Sanseidō Henshū-jo* (1997) lists 54 compounds with this E2, all with *rendaku*: {A+{/ja+ya/}}. Most of these 54 longer compounds are obscure or obsolete, but {{/ši+bai/}+{/ja+ya/}} and {/sumoH+{/ja+ya/}} appear both in a medium-size dictionary (Kondō and Takano 1986; s.v. /čä+ya/) and in *NHK*.

28 Another example of a single kanji for an etymological compound is (卵) for /tama+go/ ‘egg’, which can also be written (玉子) (cf. /tama/ 玉 ‘ball’, /ko/ 子 ‘child’). If Lyman’s Law applies at each layer of compounding, as suggested above, then of course the Right-Branch Condition is beside the point in the case of compounds ending with /tama+go/. For example, /tama+go/ is E2 at the outer layer in {/nama+{/tama+go/}} ‘raw egg’ (cf. /nama/ 生 ‘raw’).

29 It is not at all clear to what extent writing an etymological compound with a single kanji fosters monomorphemicization. As noted in the Appendix, even linguists who are native speakers of Japanese have told me that they think of /niwatori/ 鶏 ‘chicken’ as monomorphemic, despite its seemingly obvious (and etymologically correct) analyzability into /niwa/ 庭 ‘garden, yard’ and /tori/ 鳥 ‘bird’.

30 Another example in Lyman’s sub-section 4(a) that is relevant here is /mimi+ko(+)/suri/ 耳擦り ‘whispering into someone’s ear’, assuming this example is correctly identified in the Appendix as what Lyman intended. *Rendaku* would violate the Right-Branch Condition if the verb from which /kosuri/ ‘rubbing’ derives (/kosur-u/ 擦る ‘to rub’) is analyzed as a semantically obscure first element combined with the verb /sur-u/ 擦る ‘to rub’ (i.e., as /ko+sur-u/). If /kosuri/ is a compound, it would certainly be considered a strict compound, and it would not be surprising if it were susceptible to *rendaku*, but E1 in /mimi+ko(+)/suri/ is semantically the direct object of the verb on which E2 is based, and as explained below in §7.4.5, there is a tendency for compounds of this type to resist *rendaku*.

31 This item (/fu+cuki+ai/) does not appear as a headword in *NKD*, although Hepburn listed it in all of the first three editions of his dictionary.

32 The meaning ‘lack of preparation’ (essentially what Hepburn gave) is obsolete, and so is the meaning ‘preparation’ for /te+mawari/. The words /fu+te+mawaši/ 不手回し and /te+mawaši/ 手回し are used instead (cf. /mawas-u/, the transitive counterpart of /mawar-u/).

33 The entries in *NKD* say that /fu+soroi/ and /fu+harai/, without *rendaku*, are also attested. As for present-day Tōkyō speakers, *NHK* gives only the forms with *rendaku* for both words, but *Meikai* gives /fu+soroi/ as an alternative pronunciation for the former.

34 The word Ogura cited is ^{OJ}/ma+kakwo+yumi/ ‘true (deer?) bow’ (Ogura 1910:19). See Chapter 6 note 67 for details.

35 *Sanseidō Henshū-jo* (1997) lists 16 compounds ending with the element meaning ‘ladder’, all with *rendaku*, that is, all ending with /bašigo/.

36 This compound also appears as a sub-entry under the headword /hi-naN/ in a medium-size Japanese-English dictionary (Kondō and Takano 1986). It is written (避難梯子), but the hiragana “reading” (ばしご) /bašigo/ is provided for the E2.

37 I informally polled nine native speakers raised in the Tōkyō area, and six responded that only /hi-naN+bašigo/, with *rendaku*, sounds correct. The other three said that /hi-naN+hašigo/ is also possible, but two of these three said they prefer the pronunciation with *rendaku*, and only one expressed a preference for the pronunciation without *rendaku*. Kana spelling is not always a reliable reflection of pronunciation, but in this case, the *dakuten* on the last letter (ご) (*go*) makes it hard to imagine that the person who made the sign intended (は) (*ha*) to represent /ba/. Omitting *dakuten* from a letter used to spell a mora beginning with a voiced obstruent can give an archaic flavor to a sign, since early kana did not reflect the voiced/voiceless distinction. As mentioned in §4.6, *dakuten*-like diacritics have a long history (Seeley 1991:134–135; Frellesvig 2010:163–165), but it was not until the 20th century that consistent use of *dakuten* became the norm in kana spelling.

38 Even if we treat /hašigo/ as a compound and also accept the Right-Branch Condition (§7.2.3) as a genuine constraint on *rendaku*, {/nawa/+{/baši+go/}} would presumably violate Lyman’s Law but not the Right-Branch Condition, since /haši+go/ would certainly be categorized as a “strict” compound. Incidentally, it is likely that all of the three-syllable second elements in Table 7.4 in §7.2.2 had morphologically complex ancestors, but even under the implausible assumption that that they are synchronic compounds, Lyman’s Law, applied at each layer of compounding, predicts that they should resist *rendaku*. Compare the etymological compounds /koto+ba/ 言葉 ‘language’ (cf. /koto/ ‘word’, /ha/ ‘leaf’), which is probably about as hard for a modern Tōkyō speaker to analyze as /haši+go/, and /tama+go/ 卵 ‘egg’ (cf. /tama/ 玉 ‘ball’, /ko/ 子 ‘child’), which is often written in etymologically transparent fashion as (玉子) (see Chapter 7 note 28 above). As Lyman’s Law predicts, these two items do not show *rendaku* as E2s in longer compounds, as in {/kuči/+{/koto+ba/}} 口言葉 ‘spoken language’ (cf. /kuči/ ‘mouth’) and {/nama/+{/tama+go/}} 生卵 ‘raw egg’ (cf. /nama/ ‘raw’).

39 When the initial element ends in the moraic nasal /N/, as /keN/ does, /zaburoH/ always appears (Vance 2017a:35–36).

40 Since all the other elements in these names for sons are Sino-Japanese, we could treat the names as Sino-Japanese binoms, marking the division between morphs with a dot instead of a plus. It is not obvious whether it is appropriate to analyze numeral+counter combinations like /go+kai/ 五回 ‘five times’ as having the same structure as “ordinary” Sino-Japanese binoms. If we treat /sabu~/zabu/ as Sino-Japanese, they are unique morphs. No other two-syllable Sino-Japanese morph has a consonant other than /k/ or /c/ before a final /u/. Unger (2004:332) explains the origin of /sabu/.

41 According to the *NKD* entry, the form without *rendaku*, /nobori+haši/, is also attested.

42 Regardless of whether adding /go/ to form a diminutive was ever really a productive pattern, it is certainly not productive in Tōkyō Japanese today. Martin (1987:115) notes that the entry for *faxigo* (which corresponds to modern Tōkyō /hašigo/) in the Japanese-Portuguese dictionary of 1603–04 (Doi et al. 1980) gives the alternative form *faxinoco*. There is no frozen phrase corresponding to the latter in modern Tōkyō Japanese, but if there were, it would be /haši no ko/, with genitive /no/ and the noun /ko/ ‘child’ functioning semantically as a diminutive. Suzuki (2017:34) also cites this frozen phrase as the ancestor of /hašigo/.

43 The compound /nawa+baši/ 縄橋 ‘rope bridge’ is not frequent in modern Tōkyō Japanese and is listed only in very large dictionaries, but it is semantically transparent and does not seem to be obsolete. An Internet search will yield links to websites containing descriptions and pictures of rope bridges that tourists can visit.

44 *NKD* lists /fuN/ as a headword, labels it a prefix, and gives this etymology (i.e., < /fumi/; cf. /fum-u/ ‘to step on’), citing /fuN+jibar-u/ as an example.

45 Rice (2005:3–34) proposes that the /j/ in /fuN+jibar-u/ can be attributed to postnasal voicing rather than to *rendaku*. If Lyman’s Law prevents *rendaku* but does not prevent postnasal voicing, this example could be removed from the list of exceptions, but in §7.3.5 below I will argue against the idea that postnasal voicing is an active synchronic process in modern Tōkyō Japanese. Martin (1987:115) suggests that /fuN+jibar-u/ developed from an earlier (but unattested) form /fuN+jimar-u/ (cf. /šimar-u/ 締まる ‘to become tightly tied’), noting the frequent confusion of /m/ and /b/. As noted below in §7.5.2, many words varied between a form with medial /m/ and a form with medial /b/ in Early Middle Japanese (Martin 1987:30–31; Unger 2004:331–332).

46 The morpheme /šira/~/širo/ ‘white’ exhibits a covered–exposed vowel alternation (§7.2.3) other than /a/~e/: /a/~o/.

47 Toda (1988:90) notes that H3 also contains the headword /fuN+batagar-u/, which is now obsolete. Hepburn marks it as colloquial and defines it as “to straddle; to strut; to walk with a proud gait; to swagger.” The E1 is clearly from /fumi/ (cf. /fum-u/ 踏む ‘to step on’), but the E2 is problematic. The verb /hadakar-u/ 開かる ‘to become open wide’ is not frequently used in Tōkyō today, although it is listed in *NHK*. (The compound /tači+hadakar-u/ 立ちはだかる ‘to stand with one’s legs wide apart’ seems to be more common and is listed in more dictionaries; cf. /tac-u/ ‘to stand’.) The alternative pronunciation /hatakar-u/, with /t/ instead of /d/, is also attested, but /hatagar-u/, with /g/ instead of /k/, is not. Consequently, /fuN+batagar-u/ cannot simply be categorized as an example of *rendaku* that violates Lyman’s Law. Authoritative dictionaries that list a corresponding headword (*NKD* and *Kōjien*) give the form /fuN+batakar-u/, which can be analyzed as a straightforward case of *rendaku* with no Lyman’s Law violation, assuming that E2 is based on /hatakar-u/. The form /fuN+badakar-u/ is also attested, however, and this pronunciation involves a clear violation of Lyman’s Law, since it contains the medial /d/ that occurs in the more common pronunciation of E2. If /fuN+badakar-u/ was coined first and then altered to /fuN+batakar-u/ to repair the Lyman’s Law violation, /hatakar-u/ may be a kind of back formation, but it is not possible to reconstruct the sequence of events from the entries in *NHK*. H1 and H2 both list /fuN+batakar-u/ as a headword instead of the /fuN+batagar-u/ that appears in H3. As for E2 as a word on its own, /hadakar-u/ appears as a headword in all three editions of Hepburn’s dictionary. So does /hatakar-u/, with a cross-reference to /hadakar-u/ and no definition. Lyman listed /fuN+batakar-u/ in sub-section 3[a] of his 1894 article (see the Appendix), treating it as a straightforward example of *rendaku* in a verbal E2.

48 As noted in §2.3 and §5.1, Lyman says in his 1894 article that it is based on a presentation done in 1883 (see the first paragraph in §5.2), that is, before H3 was published in 1886.

49 As explained in §1.3, it appears that a different version of Lyman’s Law (the so-called “strong version”) held in OJ.

50 Mimetics are native, but they are separated from the non-mimetic vocabulary on the basis of semantic and grammatical characteristics as well as phonological behavior. Mimetics are taken up in §7.5 in connection with reduplication. As for recent loanwords, Irwin (2011:10) surveys all morphemes adopted into Japanese after the mid-16th century, but in most accounts of vocabulary

strata, the recent loan (i.e., *gairaigo* 外来語) stratum excludes the few borrowings from Chinese during this period.

51 Itô and Mester (1999) propose a core–periphery model that provides a constraint-based account of the fuzziness of the traditional stratum categories.

52 Most sources say that the donor language for /kaQpa/ was Portuguese (as I did above in §7.2.1), but as Irwin (2011:35) notes, it can be hard to tell whether a loan is from Portuguese or from Spanish.

53 In H3, the entry for /karuta/ includes a cross-reference to the alternative pronunciation /karita/, and the entry for /karita/ (which is not listed in H2) says it is derived from Portuguese *carta*.

54 The traditional division into three or four “waves” (sketched briefly in Vance 1987:167–169) greatly oversimplifies the long and convoluted history of borrowing from Chinese into Japanese. Frellesvig (2010:258–292) provides more details and references pertaining to Sino-Japanese vocabulary items. See also Chapter 7 note 60 below.

55 None of these 200 elements contained a medial voiced obstruent, and none of the compounds were coordinate. For details on the absence of *rendaku* in coordinate compounds, see §7.6.

56 The word /na+tane+zuyu/ 菜種梅雨 ‘early rainy spell’ contains the compound /na+tane/ 菜種 ‘rapeseed’. Rape plants typically blossom in late March and early April, and the Japanese rainy season called /cuyu/ normally begins in June.

57 The modern Tokyo words for ‘rainy season’ and ‘dew’ differ in accent: unaccented /cuyu/ 梅雨 ‘rainy season’ versus initial-accented /cu⁺yu/ 露 ‘dew’. Martin (1987:558) says they go back to the same etymon, but given the difference in accent, there is certainly no reason for a modern speaker to treat them as different senses of a single lexeme.

58 On binom-medial voiced obstruents as instances of *rendaku*, see also Chapter 7 note 3 above.

59 Okumura (1955) and Kikuta (2007) provide concise explanations of the distinction between original and new voicing.

60 Many basic descriptions of the layers (or “waves”; see §7.3.2) of borrowing from Chinese into Japanese are readily available (e.g., Miller 1967:103–104; Tōdō 1977:129–130; Miyake 2003:104–106; Frellesvig 2010:275–276). See also Chapter 7 note 54 above.

61 As explained in §1.1, I use ⟨tsu^h⟩ for ⟨つ⟩ (/zu/) and ⟨su^h⟩ for ⟨す⟩ (/zu/) in romanized transliterations of kana spellings.

62 In non-binom compounds, voiced-initial /boN/ always appears after an E1 that is three moras or longer, and voiceless-initial /hoN/ almost always appears after an E1 that is one or two moras (Ohno 2000:161).

63 It is worth noting that most Sino-Japanese binoms with the second element /saN/~/zaN/ ‘calculation’ have /saN/, without new voicing, as in /kaN·saN/ 換算 ‘conversion calculation’ and /soku·saN/ 速算 ‘rapid calculation’. Only a minority have /zaN/, as in /aN·zaN/ 暗算 ‘mental calculation’ (Table 7.12) and /šu·zaN/ 珠算 ‘abacus calculation’. As noted above in this section, /zaN/ in these binoms is unambiguously new voicing. Although the relevant binoms are inconsistent, some ending in /zaN/ but most ending in /saN/, only /zaN/ appears as a monom. The fact that this Sino-Japanese element behaves consistently as a monom but not as a second element in binoms is another argument for excluding such binom-medial voiced obstruents from the domain of *rendaku*.

64 This second example (/šū-gyoH+ja/ ‘ascetic practitioner’) is not frequently used today and is not even listed in *NHK*. The entry in *Meikai* gives /šū-gyoH+ša/, without new voicing, as an alternative pronunciation.

65 The list under (学) in the reverse-lookup counterpart of *Daijirin* (Sanseidō Henshū-jo 1997) shows that there are no *Daijirin* headwords containing /kaku/ written (学), but this reading is attested in the ancestor of /sai-kaku/ 才覚 ‘quick wits’, which was originally written (才学) but came to be written with a different second kanji after a semantic shift (Okimori 2010:191). Nonetheless, the /g/ in /koH-gaku/ ‘pursuit of learning’ is almost certainly original voicing.

66 The kanji (財) almost never represents /sai/, but it does in the very common word /sai-fu/ 財布 ‘wallet’. Even so, odds are that the /z/ in /saN-zai/ ‘squandering’ is original voicing.

67 The kanji (治) represents /ji/ word-initially in a few attested examples, but none of these is in common use today. Consequently, the /j/ in /hei-ji/ 平治 ‘quelling’ and /toH-ji/ 湯治 ‘hot-spring cure’ looks rendaku-like to a present-day speaker, even though it might be original voicing.

68 Since /seN/ written with (前) is extremely rare, the /z/ in /doH-zeN/ ‘ditto’ is probably original voicing.

69 As explained in the comments on /seN-zeN/ in the Appendix, Hepburn’s 1872 second edition lists a headword with this form and the kanji (前々) (implying reduplication), so this is presumably the word that Lyman intended. *NKD* lists a headword with this meaning and written this way with the phonological form /zeN-zeN/, but the entry says that /seN-zeN/ is an alternative pronunciation. The /seN/ and /zeN/ represented by the kanji (前) are a genuine doublet (see §7.3.3), but the /seN/ “reading” is extremely rare, otherwise occurring only in the obscure binom /seN-zai/ 前栽 ‘garden-front plants’ as far as I know. In any case, the word /seN-zeN/~zeN-zeN/ is now obsolete.

70 The list under (籐) in the reverse-lookup counterpart of *Daijirin* (Sanseidō Henshū-jo 1997) shows that in the very few *Daijirin* headwords written with this kanji in initial or final position, (籐) never represents /doH/ word-initially and always represents /doH/ word-finally. Word-initial /toH/ consistently means just ‘rattan’ (as in /toH+i-su/ 籐椅子 ‘rattan chair’), but words ending with /doH/ all denote a bow with some kind of rattan wrapping. Consequently, the /d/ in /šige+doH/ 重籐 ‘rattan-wrapped bow’ seems unlikely to be original voicing and probably looked rendaku-like to a late-19th-century speaker who knew this now obsolete word.

71 As mentioned in the comments on this item in the Appendix, Watanabe et al. (2003) list both /yaki+baN/ and /yaki+haN/. *NKD* lists only the form /yaki+haN/, but the date of the first citation is 1960. Since a headword with the same meaning corresponding to modern Tōkyō /yaki+baN/ appears in all of the first three editions of Hepburn’s dictionary (Hepburn 1867, 1872, 1886), something is amiss.

72 According to the *NKD* entry for /goH-buku/, the /b/ is original voicing. This word for ‘surrender’ is obsolete. It has been replaced by /koH-fuku/, that is, a binom consisting of the doublet partners of the same two kanji.

73 For the kanji (食), /šoku/ is much more frequent than /jiki/, and the former has been spreading at the expense of the latter. In Tōkyō today, the ordinary words for ‘meat eating’ and ‘coarse food’ are /niku-šoku/ 肉食 and /so-šoku/ 粗食, and these are the only forms listed in *NHK*.

74 Some kanji dictionaries (e.g., Kobayashi 1995) give /či/ as a reading of (痔), /soH/ as a reading of (造), and /haku/ as a reading of (縛). But the lists under (痔), (造), and (縛) in the reverse-lookup counterpart of *Daijirin* (Sanseidō Henshū-jo 1997) show that there are no *Daijirin* headwords containing /či/ written (痔), /soH/ written (造), or /haku/ written (縛). Each

of these voiceless-initial morphs seems to be what Miller (1967:106) calls a “lexicographical ghost,” that is, a “prescriptive reading” constructed by philologists rather than recorded in actual use (Frellesvig 2010:280). It is difficult, however, to be absolutely certain that such morphs are lexicographical ghosts; see the explanation for /kaku/ 学 in Chapter 7 note 65 above.

75 Lyman also listed /teNdeN/ てんでん ‘individually’ in his sub-sub-section 2(ab), which means that he took it to be Sino-Japanese, but since Hepburn’s dictionary entry does not give any kanji, we do not know whether Lyman took it to be reduplicated. *Kōjien*, *Daijirin*, and *NKD* all suggest that this item is etymologically a contraction of the phrase /te ni te ni/ ‘(literally) to hand to hand’ (cf. native Japanese /te/ 手 ‘hand’). Lyman’s error is understandable; /teN/ is a possible shape for a Sino-Japanese morph, but there is no native morph with this form.

76 The element /ka~/ga/ ‘place’ does not occur free in modern Tōkyō Japanese, and its OJ counterpart did not occur free either. For details, see Chapter 6 note 94.

77 The modern Tōkyō word for ‘deer’ is /šika/ (which contains /ka/ ‘deer’ etymologically); /ka/ is obsolete as an independent word (Martin 1987:430).

78 The form in use in present-day Tōkyō is /sa+ʃiki/, without the moraic nasal /N/. (This is the only form listed in *NHK*.) Martin (1987:593) says that this /sa+ʃiki/ is etymologically the same as the obsolete word /sa+zuki/ 仮廬 ‘temporary wooden shelf’. He identifies the second element with an obsolete verb meaning ‘to prop’, and he tentatively accepts an early form of Sino-Japanese /saN/ 棧 ‘ledge’ as the source for the first element.⁰¹ /sa+zuki/ is attested, so it was coined at a time when the nasal in the Sino-Japanese element would have been interpreted as prenasalization on the following obstruent, inducing rendaku (in line with the account of the origin of rendaku in §1.2). If this etymological explanation for /sa+ʃiki/ is correct, then the connection to the verb /šik-u/ ‘to lay out’ implied by the kanji (敷) is a folk etymology, but it is probably the right synchronic analysis. In any case, the /ʃiki/ in this example is not Sino-Japanese. We can understand the /N/ in the form that Lyman cited (following Hepburn) as a kind of spelling pronunciation, based on literate speakers’ knowledge that (棧) normally represents /saN/, not /sa/.

79 Modern Mandarin morphs are generally reliable indicators of whether or not the Chinese source for a Sino-Japanese morph ended in a nasal, although syllable-final [m] and [n] have merged as [ŋ], romanized as ⟨n⟩ in pinyin. Mandarin syllable-final [ŋ] is romanized as ⟨ng⟩.

80 On the change from [au] to [ɔ:] in LMJ, see Frellesvig (2010:320).

81 Of the seven examples in Lyman’s section 2 with new voicing following a first element that never ended in a nasal, one is /do-bei/ 土塼 ‘earthen wall’ (cf. modern Mandarin *tǔ* 土 ‘earth’). The second element in this word is /hei~/bei/ 塼 ‘fence’, and the kanji (塼) is a *kokuji* 国字, i.e., a character created in Japan. It could be that this /hei/ is based on the ancestor of modern Mandarin *píng* 屏 ‘screen’, with the new character created in Japan to distinguish the extended meaning from the original meaning. Another possibility, suggested by Martin (1987:404), is that this /hei/ might have same Chinese source as Sino-Japanese /heki/ 壁 ‘wall’, since word-medial [k] immediately preceding a high vowel disappeared from many words in Early Middle Japanese (Frellesvig 2010:192–197). Either way, it seems appropriate to treat /do-bei/ as a Sino-Japanese binom, and whether or not the Chinese ancestor of /hei~/bei/ ended in a nasal is irrelevant for present purposes.

82 One can argue that this diachronic connection between new voicing and a preceding nasal increases the likelihood that some of the uncertain examples in Table 7.14 above in §7.3.4 are original voicing. There was no final nasal in the Chinese source of /sui/ ‘water’ (cf. modern Mandarin *shuǐ*) in /sui-jiN/ 水神 ‘water god’ or /dai/ ‘great’ (cf. modern Mandarin *dà*) in /dai-jiN/

大臣 ‘minister’ (E2 in both /u+dai-jiN/ ‘minister of the right’ and /sa+dai-jiN/ ‘minister of the left’).

83 In Optimality Theory treatments, this alleged absence of /N/ immediately followed by a voiceless obstruent is attributed to a constraint (often abbreviated as *NT or *N_C) that prohibits sequences of a nasal immediately followed by a voiceless obstruent (Kager 1999:61).

84 The number of relevant examples is actually very small. I searched systematically through a dictionary for elementary-school children (Saeki and Mabuchi 1987) for vocabulary items that present-day Tōkyō speakers are likely to know and that contain a morpheme-internal sequence of /N/ immediately followed by an obstruent in an element that is at least arguably non-mimetic and native (i.e., not known to be Sino-Japanese or borrowed from some language other than Chinese). I found fewer than 20 clear examples with a voiced obstruent (including /kaNgae/ ‘idea’), as opposed to five examples with a voiceless obstruent (including /yaNča/ やんちゃ ‘naughty’ but not /iNčiki/, which the dictionary compilers probably considered too slangy). Many of the synchronic morphemes containing /N/ immediately followed by a voiced obstruent are etymologically contractions of compounds (e.g., /kaNzaši/ 簪 ‘ornamental hairpin’; cf. /kami/ 髪 ‘hair’, /sas-u/ 挿す ‘to insert’).

85 Okumura (1955:962) gives only a single pair of examples to illustrate: the verb /wakači+kak-u/ 分かち書く ‘to write with spaces between words’ and the noun /wakači+gaki/ 分かち書き ‘writing with spaces between words’ (cf. /wakac-u/ ‘to divide’, /kak-u/ ‘to write’). These examples suggest that V+V=V compounds tend not have rendaku, in contrast to V+V=N compounds. Since Okumura used the term *yōgen* 用言 ‘inflected word’, which includes both verbs and adjectives, it is reasonable to interpret his claim to mean that rendaku is unlikely in any compound that contains two inflected word elements and is itself an inflected word. Incidentally, the noun /wakači+gaki/ is a well-established word that is listed even in a dictionary for elementary-school children (Saeki and Mabuchi 1987), but the verb /wakači+kak-u/ seems to be a nonce creation, since it does not appear as a headword in *NKD* or in any other dictionary that I know of.

86 There are good reasons for sub-categorizing V+V=V compounds into different types (Shibatani 1990:246–247). Martin (1975:438–439) distinguishes between compounds like those in Table 7.17 and cases where the second verb is what he calls an auxiliary. Kageyama (1999:301–303) draws the same distinction and calls the two types lexical compound verbs and syntactic compound verbs. A V+V=V compound of the second type co-occurs with the same NPs as the initial element, has a completely predictable meaning, and can be created on the spot rather than stas in the lexicon, since the pattern is productive. Also, as Kageyama (1999:302–303) clearly explains, the two types show quite different behavior in a number of syntactic tests. Most of the V+V=V examples cited in this section are unmistakably the lexical type, but the distinction between lexical and syntactic does not seem to be relevant to rendaku.

87 Tagashira and Hoff (1986:8–9) propose categorizing non-transparent V+V=V compounds as idiomatic, fused, or simple, but they caution that these distinctions are not clear-cut.

88 I briefly discuss the citation forms of verbs in the Appendix in my commentary on Lyman’s sub-section 3[a]. As noted there, the plain nonpast affirmative is called the conclusive form (*shūshikei* 終止形) in traditional Japanese grammar.

89 As noted in the Appendix in the commentary on Lyman’s sub-section 3[a], Bloch (1946:6) calls the adverbial form the infinitive, and Kuno (1973:195) calls it the continuative. Hepburn and Lyman used this form of a verb as its citation form.

90 For an account of the sentence-conjoining use of the adverbial form, see Kuno (1973:195–199). For a comprehensive treatment of this form, see Martin (1975:392–455).

91 The consonant-stem verbs correspond to the quinquigrade verbs (*godan katsuyō dōshi* 五段活用動詞) of traditional Japanese grammar, and the vowel-stem verbs to the monograde verbs (*ichidan katsuyō dōshi* 一段活用動詞).

92 The adverbial form itself also has very noun-like uses, as in the purposive construction V [adverbial] /ni ik-u/ ‘to go in order to V’ (Martin 1975:401–407). For details on the accentuation of adverbial forms and corresponding nouns, see Martin (1975:883–885).

93 The account of the origin of *rendaku* that I sketched in §1.2 provides a natural explanation for the rarity of *rendaku* in compounds of this type (Vance 1982:340). There is no reason to suppose that the two elements in a V+V=N compound verb were ever connected by a genitive particle or any other NV syllable in earlier stages of Japanese.

94 Okumura (1955:862) invites the inference that the pattern in Table 7.23 is typical by citing a pair of words that fit this pattern as his only examples. See Chapter 7 note 85 above.

95 Martin (1975:445) lists /toHs-u/ with this kind of meaning as an auxiliary, suggesting that /ki+toHs-u/ would be a syntactic compound verb for Kageyama (1999:301–303). See Chapter 7 note 86 above.

96 Vance (2005a:93–98) reports a systematic study of the frequency of *rendaku* in V+V=V and V+V=N compounds. Of the 234 relevant pairs collected, 202 (86%) do not have *rendaku* either in the V+V=V compound or in the V+V=N compound, 22 (9%) show the pattern in Table 7.23, and 10 (4%) show *rendaku* in both compounds.

97 Two other unpaired V+V=N compounds appear in Table 7.33 above: /tači+yomi/ 立ち読み ‘reading while standing in a store’ and /omoi+de/ 思い出 ‘memory’. But since neither /yom-u/ 読む ‘to read’ nor /de-ru/ 出る ‘to come out’ begins with a voiceless obstruent, these two unpaired compounds are irrelevant to *rendaku*.

98 Neither *Meikai* nor *NHK* gives /nori+gae/ as an alternative pronunciation.

99 Textbooks for non-native learners suggest that the *rendaku* in the verb /ki+gae-ru/ is a recent development in Tōkyō. Jordan and Chaplin (1962:45) give /ki+kae-ru/, without *rendaku*, as the only pronunciation for this item, but Jordan and Noda (1988:301) give /ki+kae-ru/ and /ki+gae-ru/ as alternative pronunciations. *NHK* lists both forms, and Shioda (1999:94) provides some relevant survey data.

100 There were two inflectional classes of adjectives in OJ (Frellesvig 2010:81) and in classical (i.e., Early Middle) Japanese (Ikeda 1975:45–46), although the difference between the two classes was slight. The only irregular adjective in modern Tokyo Japanese is /i-i/ いい ‘good’, which has the root/stem /yo/ in all its inflectional forms except for the nonpast (the citation form), and the regular nonpast form /yo-i/ remains in common use as a formal alternative. The endings other than nonpast /i/ and adverbial /ku/ are etymologically derived from contractions of the adverbial followed by a form of the ancestor of the verb /ar-u/ ある ‘to be’ (Frellesvig 2010:232–234). For example, the past-tense ending /kaQta/ goes back to ^{EMJ}/ku aQta/. It is tempting to analyze modern /kaQta/ into /kaQ/ followed by the past-tense /ta/ that occurs in verbs, although this leaves /kaQ/ as the realization of a meaningless morpheme. I will not pursue this question here and will simply treat the adjective endings as monomorphemic.

101 Martin (1975:455–470) provides details on the uses of the adjectival /ku/ form. He notes that a few nouns have been derived by conversion from adverbials, e.g., /čikaku/ ‘vicinity’ 近く (cf. /čika-i/ ‘near’) (Martin 1975:398). A literal translation of the traditional term *ren’yōkei* 連用形 ‘adverbial form’ is more appropriate for this adjective form than for the corresponding verb form. Martin follows Bloch (1946:15–17) and calls the /ku/ form of an adjective the infinitive.

102 I exclude the noun /yoši+aši/ 善し悪し ‘good and bad’, which is a coordinate compound containing the classical conclusive forms of two adjectives. The first corresponds to modern

Tōkyō /yo-i/ 良い ‘good’ (~i-i/; see Chapter 7 note 100 above). The second would have the modern citation form /aši-i/, but it is obsolete. In any case, *rendaku* is impossible in the compound.

103 As far as I know, all V+/daka/ compounds involve the meaning ‘amount’ rather than ‘high’ or ‘expensive’, as in /agari+daka/ 上がり高 ‘proceeds’ (cf. /agar-u/ ‘to accrue’) and /kasegi+daka/ 稼ぎ高 ‘earnings’ (cf. /kaseg-u/ ‘to earn’). Diachronically, there is little doubt that the noun /taka/ 高 ‘amount’ was derived from the root of the adjective /taka-i/ ‘high’ rather than the other way around. The earliest citations in *NKD* are 720 for the ancestor of /taka-i/ and 1695 for the ancestor of /taka/. Synchronically, modern Tōkyō speakers seem to feel that the adjective is basic and the noun derived.

104 Kikuta (1971) notes that a word compounded from a verb and an adjective is likely to show *rendaku*. For data to back up the claim that compounds containing an adjective component strongly favor *rendaku*, see Toda (1994) and Vance (2005a:98–99).

105 As noted in the Preface, phonemic transcriptions of modern Tōkyō forms in this book follow Vance 2008, but problems arise in analyzing long vowels (Vance 2008:56–61). Here in §7.4, I transcribe nonpast adjective forms ending in a long vowel with /i-i/ rather than with /i-H/. Choosing /i-i/ makes it clear that all nonpast adjective forms have the same inflectional ending, namely /i/. The choice of /i-i/ rather than /i-H/ does not imply that there is a syllable boundary where the hyphen appears. The nonpast inflectional ending /i/ always forms a long syllable with the preceding mora (Vance 2008:173–174).

106 The other inflectional endings in question are all etymologically related to past-tense /ta/~da/. Bloch (1946:7) uses the label “stopped endings” for those that show the /t/~d/ alternation.

107 Frellesvig (2010:195–199) provides an account of the sound changes that led to modern Tōkyō /da/.

108 Okumura (1955) and Sakurai (1966:41) describe non-DO elements as “adverbial modifiers” (*fukushi-shūshoku-kaku* 副詞修飾格). What exactly counts as an adverbial modifier is not entirely clear, but subject elements are presumably excluded. Examples involving the subject of a transitive verb are rare, although a few are in common use, including /muši+kui/ 虫食い ‘worm damage’ (cf. /muši/ ‘worm’, /ku-u/ ‘to eat’) and /kami+kakuši/ 神隠し ‘spiriting away’ (cf. /kami/ ‘god’, /kaku-u/ ‘to hide’). Examples involving the subject of an intransitive verb are relatively common, and Kindaichi (1976:12) suggests that Subject+V=N compounds resist *rendaku* regardless of whether the verb element is transitive or intransitive, but Sugioka (1986:108, n. 24) disagrees. Intransitive-verb examples like /mizu+tamari/ 水溜まり ‘water puddle’ (cf. /mizu/ ‘water’, intransitive /tamar-u/ ‘to accumulate’) versus /hi+damari/ 日溜まり ‘sunny spot’ (cf. /hi/ ‘sun’) show that *rendaku* is not predictable in such cases, but there may be tendencies (see §7.9).

109 There is no need to worry about coordinate N+V=N compounds, since coordination seems to demand category identity (N+N or V+V, but not N+V). The only possible example I have come across is /iro+koi/ 色恋 ‘sex and love’, which can be analyzed as containing a second element based on the now infrequently used verb /ko-u/ 恋う ‘to yearn for’. Notice, however, that /koi/ as an independent word is written without *okurigana* (i.e., the kana that spell out inflectional endings; see the introductory discussion in §A.2 in the Appendix), suggesting that it has parted company with the verb it is derived from and is basically a noun. Similar examples include /hanaši/ 話 ‘story; talk’ (cf. /hanas-u/ 話す ‘to speak’), /širuši/ 印 ‘mark’ (cf. /širus-u/ 記す/印す ‘to write down’), and /tatami/ 畳 ‘mat’ (cf. /tatam-u/ 畳む ‘to fold up’).

110 A revised version of this small database of N+V=N compounds is available online at <http://www.ninjal.ac.jp/rendaku/database/>.

111 Sugioka (2005:217–218) says that *rendaku* always occurs when it is possible in newly coined nonDO+V=N compounds but seldom occurs in newly coined DO+V=N compounds. Kozman (1998) reports experimental results suggesting that this pattern has no psychological reality for newly coined items, but Nakamura and Vance (2002) found that it seemed to be playing a role in a different experimental task. Nakagawa (1966:312–313) suggests that DO+V=N compounds denoting an action involving the direct object tend to have *rendaku*, while those denoting a person whose occupation involves the direct object tend to lack *rendaku*. As far as I know, this suggestion has never been thoroughly investigated, but ambiguous examples like /hebi+cukai/ 蛇使い ‘snake charmer; snake charming’ (cf. /hebi/ ‘snake’, /cuka-u/ ‘to use’) make it hard to believe that it will stand up to scrutiny.

112 Yamaguchi describes the N+V=N compounds she investigated as having E1s that are arguments or adjuncts (see §7.9), but the argument-type examples in her database are all DO+V=N compounds (Yamaguchi 2011:121).

113 The suggestion that there might be such a correlation between *rendaku* and unaccentedness, independent of the semantic relationship between the N and V components, goes back to Okuda (1971:176), who cites a small number of relevant examples.

114 When such alternative case frames are possible for the two elements in N+V=N, Hirano (1974:33–35) suggests that if *rendaku* occurs, E1 is a “pseudo-object” (i.e., the relevant case frame is the one with a particle other than accusative /o/.)

115 Faint traces of the second accent often remain in realizations that are typically described as single accent phrases (Kubozono 1993:112–113), and Maekwawa (1997) is skeptical that the second accent ever disappears completely.

116 Lyman would have done better to use H1 (Hepburn’s 1867 first edition) or H3 (Hepburn’s 1886 third edition) for N+V=V compounds in which E1 is a single Sino-Japanese morpheme and E2 is /su-ru/. For example, H2 lists /šoH+zu-ru/ 生ずる ‘to arise’ as a headword (with the citation form *shōji*) but gives /šoH+su⁺-ru/ 称する ‘to name’ only within the entry for the headword /šo⁺H/ ‘name’ (*shō*). (The independent noun /šo⁺H/ ‘name’ occurs in modern Tōkyō Japanese but is not frequently used; Hepburn did not give it a part of speech label in H2 and gave examples only for forms of /šoH+su⁺-ru/.) In contrast to H2, H1 lists both compound verbs as headwords (with the citation forms *shōji* and *shō-shi*). Hepburn reverted to this earlier consistent treatment in H3.

117 Ogura categorized some etymologically non-mimetic items as mimetic or mimetic-like. See Chapter 6 note 88 for details on some of these examples and §7.5.3 below for the notion of quasi-mimetic words.

118 *NKD* lists reduplicated /gyuN+gyuN/ ‘tightly constricted’ and phrasal /gyuN to/ ‘strongly attracted; strongly constricted’ as headwords, but not /kyuN to/ or /kyuN+kyuN/. In contrast, *Kōjien* lists only /kyuN to/, and *NHK* lists only /kyuN to/ and /kyuN+kyuN/.

119 Martin (1975:790–791) briefly discusses the small number of words (all of which are adverbs) that follow this pattern of reduplicating the conclusive form of a verb. As he notes, another example that has *rendaku* and belongs to this group historically is /cuku+zuku/ つくづく ‘intently’. The etymological base is the classical conclusive form of the modern Tōkyō verb /cuki-ru/ 尽きる ‘to get used up’, but there is no synchronic connection to a verb for an ordinary speaker today, which is why the reduplicated word is usually written in hiragana.

120 In this discussion of reduplicated nouns, I am also ignoring the distinction between ordinary nouns and adjectival nouns (*keiyō-dōshi* 形容動詞). For example, /sama+zama/ ‘various’ in Table 7.37 is an adjectival noun.

121 Labrune (2012:118) says that a reduplicated noun always shows *rendaku* (as long as Lyman’s Law is not violated) if the meaning is “plural or iterative” but not necessarily if the meaning is “distributive.” The number of distributive examples is small, and the two unambiguous ones in Table 7.37, /cuki+zuki/ and /sore+zore/, have *rendaku*, although the *NKD* entries for these words give /cuki+cuki/ and /sore+sore/ as alternative pronunciations. The word /hi+bi/, also listed in Table 7.37, can mean either ‘day by day’ (distributive) or ‘days’ (plural), but only the form with *rendaku* is attested. As Labrune notes, we find /hito+ri+hito+ri/~hito+ri+bito+ri/ 一人一人 ‘one person at a time’ (cf. /hito+ri/ ‘one person’), and a similar example that behaves the same way is /hito+cu+hito+cu/~hito+cu+bito+cu/ 一つ一つ ‘one thing at a time’ (cf. /hito+cu/ ‘one thing’), but the two forms with *rendaku* (/hito+ri+bito+ri/ and /hito+cu+bito+cu/) are obsolescent.

122 In earlier work (Vance 1987:147) I cited /cuči/ 土 ‘soil’ and /šio/ 潮 ‘tide’ as native noun elements immune to *rendaku*, but these two examples are problematic. There is a brief discussion of /cuči/ below in §7.7.1. As for /šio/, the reverse dictionary based on the 1991 4th edition of *Kōjien* (Iwanami Shoten Jiten Henshūbu 1992) lists five obscure compounds ending with the allomorph /jio/, and some native speakers that I consulted knew the word /wasure+jio/ 忘れ潮 ‘water remaining in puddles after the tide goes out’ (cf. /wasure-ru/ ‘to forget’).

123 The number of compounds ending in /kase/ ‘shackles’ is very small, but there is no real doubt about its immunity to *rendaku* in modern Tōkyō Japanese. Lyman (1894:169) listed /aši+kase/ ‘leg shackles’, /kubi+kase/ 首枷 ‘cangue’ (cf. /kubi/ ‘neck’), and /te+kase/ 手枷 ‘manacles’ (cf. /te/ ‘hand’) in his sub-section 4(e), but as noted in the comments on these items in the Appendix, the corresponding headwords in his primary source of examples (H2) are all listed with *rendaku*. The *NKD* entries list the forms without *rendaku* as headwords and give /aši+gase/ and /te+gase/ as alternative pronunciations, but not /kubi+gase/. The implication is that the apparent immunity of this morpheme today is a relatively recent development. The only other clearly relevant *NKD* headword is obsolete /širi+kase/ 尻枷 ‘plow harness’ (cf. /širi/ ‘buttocks’). Obscure /kase/ 枙 ‘bobbin, reel’ is attested with *rendaku* in /o+gase/ 麻枙 ‘linen reel’, and Martin (1987:441) identifies /kase/ ‘shackles’ as etymologically the same morpheme, although most lexicographers do not. In any case, even for a speaker who knows both there is presumably no synchronic connection.

124 All the compounds in common use that end with /kaNmuri/ denote kanji radicals that form the top portion of a character. The grass radical {艹} appears in many kanji, including {草}, which can represent /kusa/ ‘grass’.

125 As I pointed out in earlier work (Vance 1987:147), /saki~/zaki/ 崎 ‘promontory’ also goes back to the same etymological source as /saki/ ‘tip’ (Martin 1987:517). The semantic connection is obvious, but the different kanji encourage literate native speakers to see /saki~/zaki/ ‘promontory’ as a different morpheme from /saki/ ‘tip’. Another factor is that /saki/ as an independent word meaning ‘promontory’ is obsolete, and the kanji {崎} represents /saki~/zaki/ only in proper names such as /naga+saki/ 長崎 ‘Nagasaki’ and /miya+zaki/ 宮崎 ‘Miyazaki’. The modern Tōkyō word for ‘promontory’ is /misaki/ 岬, which (according to the entry in *Jōdai*) is etymologically /saki/ preceded by an honorific prefix. Of course, the single kanji {岬} conceals the connection. In short, it seems reasonable to claim that /saki~/zaki/ ‘promontory’ is not the same morpheme as /saki/ ‘tip’. Martin actually treats /saki/ ‘tip’ separately from /saki/ ‘ahead’ and suggests that there is some doubt about the identification of the two as the same

etymon, but the entries in *Jōdai* and *NKD* show no such hesitation on the part of Japanese lexicographers.

126 On the realization of the initial consonant of ^{EMJ}/pibo/ as [p] (corresponding to modern Tōkyō [h]), see §1.1, and Chapter 1 note 4.

127 Large dictionaries list several compounds ending in /zamura/ (cf. /samurai/ 侍 ‘samurai’), although none of these words is common enough to be listed in smaller dictionaries like Kondō and Takano 1986 (a medium-size Japanese-English dictionary) or Saeki and Mabuchi 1987 (a dictionary for elementary-school children). The EMJ ancestor of ^{MT}/samurai/ is attested with ^{EMJ}/b/. One of the compounds is /inaka+zamura/ 田舎侍 ‘rustic samurai’ (cf. /inaka/ ‘countryside’), but *NKD* also lists /inaka+saburai/ as a headword, and the entry gives the alternative pronunciation /inaka+zaburai/ – another violation of Lyman’s Law.

128 The X+X+/ši-i/ pattern seems to be at least slightly productive synchronically. For example, semantically transparent /fuyu+buyu+ši-i/ 冬々しい ‘wintry’ (cf. /fuyu/ ‘winter’) does not appear in dictionaries, but some native speakers use it.

129 Martin (1987:849) identifies the base /fute/ with the root of the adjective /futo-i/ 太い ‘fat’. The *NKD* entry for obsolete /futo+buto+ši-i/ 太々しい ‘very fat’ says that it is attested as a synonym for /fute+bute+ši-i/. The oldest citations for /futo+buto+ši-i/ are 1724 for the meaning ‘very fat’ and 1825 for the meaning ‘impudent’, and it seems likely that the similarity in pronunciation led speakers to confuse these two words. The verb /fute-ru/ seems semantically more plausible as the etymological source of the base in /fute+bute+ši-i/. The *NKD* entry for /fute-ru/ says that it was sometimes written <不貞る> or <太る> but that these kanji are *ateji*. The oldest *NKD* citation for /fute-ru/ is late 14th century, and the oldest for /fute+bute+ši-i/ is 1737. Although /fute-ru/ is obsolete, it is preserved in the frequently used compound /fute+kusare-ru/ ふて腐れる ‘to get sulky’ (cf. obsolete /kusare-ru/ ‘to rot’; modern Tōkyō /kusar-u/ 腐る ‘to rot’).

130 The noun /haka/ is obsolete, and even though the frequently used verb /hakador-u/ 捗る ‘to make progress’ is etymologically a combination of this /haka/ with /tor-u/ 取る ‘to take’, ordinary speakers do not analyze it this way synchronically.

131 According to the *NKD* entry for the noun /kai/ ‘worth’, it is derived etymologically from the ancestor of the verb /ka-u/ 買う ‘to buy’. In modern Tōkyō Japanese it appears mostly as /gai/ (i.e., with *rendaku*) as the second element of a compound with a verbal first element, as in /iki+gai/ 生き甲斐 ‘reason for living’ (cf. /iki-ru/ ‘to live’).

132 The adjective /take-i/ is obsolete, but its classical dictionary form /take-ši/ survives, with accent on the initial syllable (/ta⁺keši/), as a popular given name for men. According to the *NKD* entry, the form /take-i/ was used in the Muromachi period (1333–1568).

133 Unaccented verb bases give unaccented reduplications, as in /naki+naki/ 泣き泣き ‘while crying’ (cf. unaccented /nak-u/ ‘to cry’, adverbial /naki/). An unaccented reduplication like this is ambiguous between dephrasal accent and compound accent, but it seems reasonable to take the accented cases as decisive and treat all reduplications of this type as instances of dephrasal accent.

134 Several native speakers have told me that /kani+gani/, with *rendaku*, would have to mean something like ‘many crabs’, probably still alive.

135 The H2 entry gives the kanji (籍) for /seki+seki/, but this is an error (although people in the mid-19th century may very well have used this kanji as an *ateji*). *NKD* lists four different Sino-Japanese binoms of the form /seki-seki/, none of which seems to be in common use in present-day Tōkyō Japanese. One of these four is obsolete /seki-seki/ 籍々 ‘loudly gossipy’. See §7.5.4 for a brief discussion of such Sino-Japanese words.

136 As mentioned in the comments on /k_{ira}+k_{ira}+š_i-i/ in the Appendix, *NKD* lists only classical /k_{ira}+k_{ira}+š_i/.

137 Martin (1987:840) does not offer an etymology for /sewa/, but Hamano (1998) and Ono (1984) do not treat it as mimetic. As mentioned in the comments on /sewa+sewa+š_i-i/ in the Appendix, the same root also appears unreduplicated in /sewa+š_i-i/ 忙しい ‘busy’.

138 Martin (1987:832) says that this /k_{ira}/ is mimetic, and both Hamano (1998:233) and Ono (1984:78) list it.

139 For details, see the comments on /k_{ira}+k_{ira}+š_i-i/ in the Appendix.

140 On the other hand, as mentioned in §1.2, the strong tendency favoring redaku in non-mimetic reduplicated words that we see in modern Tōkyō Japanese does not seem to have been true of OJ.

141 See Chapter 7 note 69 above for details about /seN·zeN/. Lyman also listed /teNdeN/ てんでん ‘individually’ in his sub-sub-section 2(ab), which means that he took it to be Sino-Japanese, but see Chapter 7 note 75 above.

142 There is one example that clouds the picture for /saN/ 散. The word /zaN+giri/ ‘close cropping of hair’ (cf. the native verb /kir-u/ 切る ‘to cut’) is typically written 散切り today. Etymologically, the first element is probably Sino-Japanese /zaN/ 残 ‘remaining’. The *NKD* entry gives 残 as an alternative first kanji, and Hepburn gives 残切 for the corresponding headword in all of the first three editions of his dictionary (H1, H2, and H3). It seems likely that the replacement of 残 with 散 was a result of confusion with the word /saN·pacu/ 散髪 ‘hair-cutting’. According to the *NKD* entry for /saN·pacu/, both words were used to refer to the new hairstyle that came into vogue after the Meiji government banned the traditional style that had previously been the norm for samurai.

143 I know of only one example of a reduplicated Sino-Japanese binom without new voicing followed by /š_i/: /č_oH·č_oH+š_i-i/ 喋々しい ‘talkative’. This word is too obscure to be listed in small dictionaries.

144 I am grateful to Satoshi Kinsui for pointing out the problem with the reduplicated base in /soH·zoH+š_i-i/. The etymology is uncertain (Martin 1987:840), but the entries in *Daijirin* and *NKD* agree that whatever it may have been, it was not Sino-Japanese /soH/ 騒 ‘noise’. Leon Serafim has suggested to me that the reduplicated base in /fuku·buku+š_i-i/ might be etymologically related to native Japanese /fuku/ in /fuku+yoka/ 膨よか ‘plump’.

145 Strictly speaking, /hotoke/~/botoke/ is not native Japanese. The *NKD* entry for /hotoke/ says that /ke/ is etymologically identical to Sino-Japanese /ke/ 気 ‘appearance’ and was combined with an element meaning ‘Buddha’, but Martin (1987:416) says the source of /hotoke/ was probably the Korean (presumably Paekche) form of a Chinese original that was later borrowed into Japanese again in the standard Sino-Japanese form that is the ancestor of the modern Tōkyō /buQ·tai/ 仏体 ‘the Buddha’s body’. In any case, /hotoke/ does not look Sino-Japanese and is almost certainly not recognized as a borrowing by ordinary native speakers.

146 Sakurai (1966:41) cites /ue+š_ita/ 上下 ‘above and below’ as one example of the resistance of coordinate compounds to redaku. In earlier work (Vance 1987:145) I claimed that this example was irrelevant, since I had not been able to find any non-coordinate compounds containing the morpheme meaning ‘below’ realized as /j_ita/. The availability of reverse dictionaries now makes it possible to check such claims more carefully, and it turns out that my criticism of Sakurai’s example was unfair. Neither of two small reverse dictionaries (Tajima and Niwa 1987; Kitahara 1990) lists any examples ending in /j_ita/, but a much larger reverse dictionary (Iwanami Shoten Jiten Henshūbu 1992) lists three. One of these three is reduplicated

/šita+jita/ 下々 ‘the lower classes’. As we saw in §7.5.2, however, there are elements that show *rendaku* when reduplicated but are otherwise immune, so if /šita+jita/ were the only example ending in /jita/, we might still want to disregard /ue+šita/. The other two examples ending in /jita/ are /gu.soku+jita/ 具足下 ‘clothing worn under armor’ and /haku+jita/ 箔下 ‘undercoat for metal leaf’. Both are obscure, and the second is not even listed in *Daijirin*; it is listed in *Kōjien*, of course, since Iwanami Shoten Jiten Henshūbu 1992 is based on an earlier edition of *Kōjien*. It is very unlikely that either of these last two examples would be in the vocabulary of an ordinary native speaker, so it seems safe to say that the morpheme meaning ‘below’ is for all practical purposes immune to *rendaku*.

149 Etymologically, /suQpa-i/ 酸っぱい ‘sour’ contains the noun /su/ 酢 ‘vinegar’ plus the unproductive adjective formant /Qpa/, but the different kanji in the usual spellings obscure the connection, and present-day Tōkyō speakers typically do not see the relationship.

148 *Daijirin* defines /suji+bone/ as ‘sinews and bones’. *Kōjien* gives this as the first definition but also gives ‘cartilage’ as a second (non-coordinate) definition. Watanabe et al. (2003) give only ‘sinews and bones’.

149 A likely guess for the meaning of /suji+bone/ is non-coordinate ‘bone that goes through the center of the body’, by analogy with /suji+gane/ 筋金 ‘metal reinforcement rod’ (cf. /kane/ ‘metal’). My thanks to Shōko Hamano for sharing her real-life experience with this word.

150 I am indebted to Mark Irwin for bringing /mie+gakure/ to my attention.

151 *Daijirin* and *NHK* list /mie+kakure/ as a headword, but the entries note that /mie+gakure/ is also possible. In contrast, *Kōjien* and *Meikai* list /mie+gakure/ as a headword, and the entries do not mention /mie+kakure/ as an alternative pronunciation.

152 I am grateful Nobue Suzuki for calling my attention to /aši+de+matoi/.

153 *Kōjien* and *Daijirin* list both /aši+te/ ‘feet and hands’ and /te+aši/ ‘hands and feet’. Smaller dictionaries, such as Kondō and Takano 1986 and Saeki and Mabuchi 1987, list only /te+aši/.

154 Both *Kōjien* and *Daijirin* list /aši+te+matoi/ (without *rendaku*) as a compound under the headword /aši+te/ and give /aši+de+matoi/ (with *rendaku*) as an alternative pronunciation. Smaller dictionaries (Kondō and Takano 1986; Saeki and Mabuchi 1987) list /aši+de+matoi/ (and not /aši+te+matoi/) as a headword.

155 I owe this example to Wayne Lawrence. It is accentually non-unified, i.e., pronounced as two accent phrases: /geN·ki*⁺N|ji·doH+azuke+bara*⁺i+ki/ (with | marking the boundary between the two accent phrases as in Vance 2008:192). As Kubozono (1993:51–52) explains, the boundary between the accent phrases in an accentually non-unified compound does not necessarily coincide with the semantic constituent boundary at the highest layer of compounding.

156 For the kanji (答), /toH/ is the only Sino-Japanese “reading” listed in character dictionaries, and /doH/ never occurs word-initially.

157 I excluded a small number of examples consisting of two synonymous elements, as in /keN·go/ 堅固 ‘strong, staunch’, from Table 7. 43. The /g/ is a clear instance of new voicing, since /ko/ is the only Sino-Japanese “reading” listed for (固) in character dictionaries, and /go/ written (固) never appears word-initially. The two Sino-Japanese morphemes in this binom both mean something like ‘hard, solid, firm’. It is reasonable to treat words like this as coordinate (Fabb 1998:67), but none of the native coordinate compounds I know of combines synonyms, so it seems wise not to introduce a potential confounding factor into the comparison in the paragraph just below between coordinate Sino-Japanese binoms and coordinate compounds consisting of native morphemes.

158 In the case of /toH·zai/ ‘east and west’, the Chinese ancestor of the first element ended in [ŋ] (cf. modern Mandarin *dōng* 東 ‘east’). Only /ši·juH/ ‘always’ does not fit the historical pattern (cf. modern Mandarin *shǐ* 始 ‘to begin’).

159 As mentioned above in §7.5.1, it seems reasonable to say that mimetic examples like these are coordinate. As /norari+kurari/ and /nora+kura/ show, /ri/ is a separable element in mimetic vocabulary items, but this complication is ignored here. Hamano (1998:106–107) describes the basic meaning of /ri/ as quiet ending of a movement.

160 The kanji that Hepburn used for /ura+hara/ probably misled Lyman. In H2 (Hepburn’s 1872 second edition, which was Lyman’s primary source of examples, the kanji are 裡原). The first was once commonly used for /ura/, although it has been almost entirely ousted by 裏). The second is used to write /hara/ ‘field’, so it conceals the fact that /hara/ in /ura+hara/ is etymologically the morpheme meaning ‘belly’ and thus makes /ura+hara/ look non-coordinate.

161 For details on the words that Lyman mistakenly classified as coordinate, see the comments in the Appendix on the individual items in his sub-section 4(d).

162 As mentioned in the comment on this item in the Appendix, Lyman actually had “anakashiki” in his article, but this must be an error for “anakashiko.” As observed in Chapter 6 note 91, Ogura corrected this error without comment.

163 Ikeda (1975:54) cites two Heian-period examples of ^{EMJ}/ana/ followed by a bare stem, both from *Genji monogatari* 『源氏物語』. When present-day scholars cite such forms, they pronounce ^{MT}/ana/ as a separate word, i.e., as a separate accent phrase from the following adjective stem, but this custom does not tell us how 19th-century speakers pronounced /ana+kašiko/, and Hepburn romanized it as a single word, without a hyphen.

164 This example (/ana+kašiko/) actually appeared twice in Lyman’s article, once in sub-section 4(c) “compounds with adjective endings” and again in sub-section 4(d) “juxtaposed words of allied or contrasted meaning” (see the Appendix).

165 Although it is widely believed that traditional regional dialects differ significantly as far as *rendaku* is concerned, very little work has been done on this question (Irwin and Vance 2015).

166 Shioda’s reports appear in the monthly magazine put out by the NHK Broadcasting Culture Research Institute (NHK放送文化研究所), which has been conducting surveys of fluctuations in the phonological form of words since 1991.

167 As mentioned above in Chapter 7 note 122, I incorrectly claimed in earlier work (Vance 1987:147) that /cuči/ ‘soil’ is immune to *rendaku*.

168 In addition to /imari+zuči/ ‘clay used to make Imari ceramics’, Iwanami Shoten Jiten Henshūbu 1992 (the reverse dictionary based *Kōjien*) lists three other obscure compounds ending with the voiced allomorph /zuči/, but none of the native speakers I consulted knew any of these three.

169 As a counter, /hako/ also appears without *rendaku* in /futa+hako/ 二箱 ‘two boxes’ (cf. native /futa/ ‘two’). Speakers typically use Sino-Japanese numerals for most larger numbers, and the counter appears as /hako/ following a vowel, as in /go+hako/ 五箱 ‘five boxes’ (cf. Sino-Japanese /go/ ‘five’) but as /pako/ following /N/ or /Q/, as in /saN+pako/ 三箱 (cf. Sino-Japanese /saN/ ‘three’) and /roQ+pako/ 六箱 ‘six boxes’ (cf. Sino-Japanese /roku/~roQ/ ‘six’).

170 This English translation of Okumura’s statement is my own.

171 In earlier work (Vance 2007a:156), done before I was able to look at Lyman’s primary source of examples (H2), I mistakenly identified “ari-TAKE” (Lyman 1894:170) as /ari+take/ 蟻茸, a mushroom name denoting the species *Cordyceps japonensis*.

172 The most recent NHK pronunciation dictionary (*NHK*) lists /yoko+Q+cura/~yoko+cura/, but the previous version (NHK Hōsō Bunka Kenkyūjo 1998) also lists /yoko+zura/ as a possible alternative.

173 H1, H2, and H3 all list only /de+ba/, defined as ‘projecting teeth’. *NHK* gives /de+ba/ in parentheses as an alternative pronunciation for /de+Q+pa/, the parentheses indicating a pronunciation that, according to the front matter (p. 8), is “permissible” in broadcasting. The implication, of course, is that the parenthesized pronunciation is dispreferred. The fact that /f/ and /h/ alternate with /p/ as well as with /b/ is another relic of the bilabial stop that was their common ancestor (see §1.1). As mentioned above in Chapter 7 note 3, we see the same /f/~p/ and /h/~p/ alternations in Sino-Japanese morphemes.

174 Shioda (2001:89) reports the results of a survey done in the early 1980s in which many respondents (although only a minority) chose /macu+dake/ over /macu+take/. Participation was not restricted to Tōkyō speakers.

175 *NHK* lists only unaccented /oH+de/ for the meaning ‘entire arm’, but *Meikai* lists initial-accented /o^{*}H+de/ as an alternative pronunciation for this meaning.

176 Otsu (1980:211–213) contrasts /kara+gami/ ‘Chinese paper’ with /kara+kami/ 唐紙 ‘sliding-door paper’ (cf. /kara/ ‘Cathay’, /kami/ ‘paper’) and says the former is a loose compound, with a more transparent meaning, while the latter is a strict compound (see the discussion of Otsu’s loose/strict distinction in §7.2.3 above). It must be noted, however, that /kara+gami/ is not an established word and is not listed even in large dictionaries, including *NKD*; it is apparently just an example that Otsu coined, so it reflects his intuition about how it would be pronounced. Since this E1 is one of those that Irwin (2012:32–35) identifies as rendaku inhibitor, /kara+gami/ does not seem especially likely even as a nonce form for the transparent meaning.

177 Bolinger (1968:110) and Hudson (2000:262–263) use the one-word term *bifurcation*, but I prefer the more explicit two-word term *semantic bifurcation* (Vance 2002c).

178 The absence of rendaku in the form defined as ‘taste (of a drink)’ is in keeping with the fact that /kuči/~guči/ seems to resist rendaku consistently when it has the figurative meaning ‘flavor’. We do not see a consistent choice of /kuči/ or /guči/ in existing vocabulary items for more concrete meanings like those in ‘lip of a cup’ and ‘spigot’. The behavior of /kuči/~guči/ is discussed in detail in §7.8.3.

179 The entry in *NKD* describes /ki+gae-ru/ (with rendaku) as a modern-day alternative pronunciation. Only the form without rendaku appears in H1, H2, and H3. As noted in §7.4.2, the related V+V=N compound /ki+gae/ 着替え ‘changing clothes; change of clothes’ has had rendaku all along, and the newer form of the verb makes the compound verb and the compound noun a matching pair in terms of rendaku.

180 Since the corresponding OJ compound ^{OJ}/midu+tori/ is attested in phonograms, we can be reasonably confident that it did not have rendaku (see Chapter 1 note 31). Notice that rendaku would have violated the strong version of Lyman’s Law (§1.3) because the consonant in the last syllable of E1 (^{OJ}/d/) was a voiced obstruent. Shioda (2001:102) suggests that the modern form with rendaku arose because most existing compounds ending in the morpheme meaning ‘bird’ have rendaku, which means that ^{MT}/mizu+dori/ is a result of analogical leveling.

181 A coordinate compound that is relatively short (four moras or shorter) typically has dephrasal accent (§7.4.7), that is, it retains the accent of its first element (Kindaichi and Akinaga 2014 [appendix]:28–29). Compare /yama^{*}+kawa/ ‘mountains and rivers’ with /yama^{*}/ ‘mountain’ and /kawa^{*}/ ‘river’. Another example that follows the general pattern is /a^{*}sa+baN/ 朝晩 ‘morning and night’ (cf. /a^{*}sa/ ‘morning’, /baN/ ‘night’). An exception is /o^{*}ya+ko/ ‘parent and child’ (cf. /oya^{*}/ ‘parent’, /ko/ ‘child’), which appears as an example in Table 7.42 in §7.6.1.

Note, however, that the initial accent in /o^{*}ya+ko/ is not predictable compound accent; most ordinary compounds with this E2 are unaccented, although some are accented on the last syllable of E1. Vance (2021:34–36) provides more details on the difficulty of categorizing accent patterns on short compounds.

182 Neither /yama^{*}+kawa/ nor /yama+gawa/ is listed as a headword in Kondō and Takano (1986) (a popular medium-size Japanese-English dictionary) or in Saeki and Mabuchi (1987) (a dictionary for elementary-school students). The form without rendaku is also a common surname, but native speakers do not typically interpret the surname as coordinate (to the extent that they analyze it semantically at all).

183 According to the relevant entries in *NKD*, early 13th-century words corresponding to modern Tōkyō /oH+de/ and /oH+te/ are attested in *Heike monogatari* 『平家物語』. The former already had its current meaning, but the latter meant ‘front gate (of a castle)’, and the modern meaning ‘major company’ developed from a longer word corresponding to modern Tōkyō /oH+te+suji/, which originally meant ‘main road on the front side of a castle’ (cf. /suji/ 筋 ‘sinew’, used figuratively to mean ‘road’) and then shifted by metonymy to mean ‘major business’. Modern Tōkyō /oH+te/ is an abbreviation of this longer word.

184 This estimate of 2:1 for /guči/ as opposed to /kuči/ is based on compounds that appear as headwords both in a small reverse-lookup dictionary (Kitahara 1990) and in a medium-size Japanese-English dictionary (Kondō and Takano 1986). The number of relevant compounds is 69, and 47 of them are listed with rendaku. These figures exclude /hito+kuči/ 一口 ‘one mouthful’, since /hito/ ‘one’ inhibits rendaku (see §7.7.1), and reduplicated /kuči+guči/ 口々 ‘every voice’, which has rendaku as expected (see §7.5). Several of the compounds are actually attested both with /kuči/ and with /guči/, although they are listed with one or the other in the two dictionaries.

185 Although many dictionaries list /iri+kuči/ as an alternative pronunciation for /iri+guči/ 入口 ‘entrance’, /iri+guči/ is the norm in present-day Tōkyō (Shioda 2001:85).

186 I alluded to this semantic generalization of Lyman’s in §7.4.7 and in §7.7.2.

187 Ogura (1910:32) and Yanaike (1991:64, notes 29, 30) make essentially the same point and cite examples that contradict what seem to be reasonable interpretations of Lyman’s claims.

188 See also Chapter 7 note 185 above.

189 Although /hair-u/ ‘to enter’ is etymologically a compound, based on the ancestors of the two verbs /ha-u/ 這う ‘to crawl’ and /ir-u/ ‘to enter’, ordinary speakers today do not think of it as a compound.

190 A translation with *of* ordinarily works for Subject+V=N compounds involving an intransitive verb, as in ‘falling of rain’ for /ame+furi/ 雨降り (cf. /ame/ rain’, /fur-u/ ‘to fall’), but as mentioned above in Chapter 7 note 108, it is not clear to what extent Subject+V=N compounds tend to resist rendaku.

191 For another example of variability that would elude a dictionary search, see Chapter 7 note 5 above on /mizu+teQ·poH/~mizu+deQ·poH/.

Appendix

1 The URL for the Hepburn dictionaries is: http://www.meijigakuin.ac.jp/mgda/index2_j.html.

2 Martin (1987:846) and the entry for the verb ^{OJ}/akaru/ in *Jōdai* give this etymological connection.

3 A list of 1,850 *tōyō-kanji* 当用漢字 ‘current-use kanji’ was adopted by the Japanese government in 1946, and it was replaced by a list of 1,945 *jōyō-kanji* in 1981. Seeley (1991:152–178) provides a concise history and description of the lists, and Gottlieb (1994) provides an account of the politics behind the 1981 changes. A 2010 revision expanded the *jōyō-kanji* list to 2,136 characters (Bunka-chō 2011).

4 As noted in the Preface, the morphemic divisions of inflectional forms follow Bloch (1946) for the sake of convenience but should not be construed as an endorsement of his analysis.

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