

# Perspectives on Language Structure and Language Change

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PERSPECTIVES ON LANGUAGE STRUCTURE  
AND LANGUAGE CHANGE

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## **Volume 345**

Lars Heltoft, Iván Igartua, Brian D. Joseph, Kirsten Jeppesen Kragh  
and Lene Schøsler (eds.)

*Perspectives on Language Structure and Language Change*  
*Studies in honor of Henning Andersen*

PERSPECTIVES ON  
LANGUAGE STRUCTURE  
AND LANGUAGE CHANGE

STUDIES IN HONOR OF  
HENNING ANDERSEN

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# Preface

This volume addresses a group of concepts and issues central to the study of language change, all anchored in the work of Henning Andersen, professor at the University of California, Los Angeles, Slavic Languages and Literatures. Henning Andersen has been highly influential in the fields of diachronic linguistics, and his key concepts are continuously quoted and applied by researchers in the field. His influence on general and Slavic linguistics is deep and lasting, in the USA and in Europe, and in the Slavic world. Henning Andersen is still fully active as a researcher and as a plenary speaker at international conferences. His theory and approach are astonishingly coherent, and his key concepts form a basis for further theoretical development and empirical work.

To pay tribute to Henning Andersen and his impressive achievements, we have collected and edited a number of papers from colleagues applying, analyzing and evaluating Henning Andersen's key concepts. These papers cover a large number of typologically different languages, including, of course, the Slavic languages as Henning Andersen's special field of expertise. The authors represent universities all over the world, a symbol of his immense influence in linguistics.

Lars Heltoft  
Iván Igartua  
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# Perspectives on language structure and language change

## An introduction

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The present volume has several distinct but interrelated goals. One aim is to pay tribute to Henning Andersen on his 85th birthday in the form of a well-deserved and in fact long overdue *Festschrift*, celebrating a long and distinguished career at the forefront of various aspects of our field. However, this collection does not resemble a traditional version of this genre, but rather, by way of fulfilling a second goal, it finds its form in a thematic volume focusing on terms and concepts that are more theoretical in nature and which are central to Henning Andersen's thinking and to historical linguistics in general. These theoretical concepts are *reanalysis* and *actualization*, and in a Peircean context, the concept of *indexicality*.

*Reanalysis* here refers to processes by which language users reinterpret existing grammatical structure into new grammar, whether leading to greater complexity or to less complexity. *Actualization* concerns the spread of a reanalysis throughout the structural ramifications of a given language and throughout the language community. *Indexicality* refers to redundancy relations in morphological and syntactic systems. This is a specialized sense also found in Peirce's work, namely the way parts of a linguistic system can point to other parts of the system, both syntagmatically and paradigmatically. Symbolic meaning in the sense of Peirce is of course highly relevant for describing language functions, as is iconic meaning (iconicity), which has attracted the interest of many functional linguists from the 1980s onwards, and Henning Andersen's work points to the fruitfulness of indexicality as the third Peircean term.

Historical linguistics and the study of language change have always dealt with a basic division in the types and causes of linguistic change, namely changes motivated from within the linguistic system and those motivated from the outside. This

distinction is reflected in terminological opposites such as *evolutive* vs. *adaptive change*, terms introduced by Henning Andersen (1972, 1973).

*Reanalysis* is a part of ongoing everyday language use, and both familiar structural items and exotic novelties borrowed from other languages can undergo this process. It is also a central issue in mainstream studies in grammaticalization, where grammaticalization is understood as a process leading from lexical status via stages of increased bonding and attrition towards increasing grammatical status, a developmental scheme known as the cline of grammaticalization. In the present work, however, grammaticalization is generally viewed as a panchronic concept, and the diachronic concepts of grammation, regrammation and degrammation replace the ‘cline’. These concepts, coined by Henning Andersen, do not exclude studies of how lexicon turns into grammar, but the focus instead is on the development of existing grammar into new and different grammar. *Actualization*, on the other hand, covers the processes through which a reanalyzed structure spreads throughout single communities and society. Actualization processes are the empirical changes that document the reanalyses initiating them.

Peirce’s semiotics has deeply influenced Henning Andersen’s thinking. The distinction between symbols and indices plays an important role in his synchronic analyses of the morphology of especially Slavic languages. His overview article on historical morphology (2010) is a demonstration how the inclusion of *indexicality* leads to fine-grained analysis (where others see unanalyzable wholes). Such analyses are a precondition for a qualitative understanding of language change, both where morphology, word order, and constructional syntax are concerned.

The papers contained herein are varied in nature but fall into clusters that speak to issues that have informed Henning Andersen’s contributions to our field over the years, both general issues concerning the nature of language and more specific issues concerning language change. In what follows, we survey these papers, section by section, highlighting how they pertain to Henning Andersen’s work.

## Theory of language change

In his well-known and oft-cited 1973-article “Abductive and deductive change” (Andersen 1973), Henning Andersen distinguishes two types of language change: evolutive change – defined as “change entirely explainable in terms of the linguistic system that gave rise to it” – and adaptive change – defined as “a change not explainable without reference to factors outside the linguistic system in question”. In their paper, Hope C. Dawson and Brian D. Joseph present an overview of the evolutive versus adaptive dichotomy in Andersen’s work and the role this dichotomy has played in the field in ensuing years. They show how it corresponds essentially to

the distinction between internal and external causation, but at the same time how it represents an innovation compared with the more traditional tripartite distinction of types of change and their causality: sound change, analogy, and borrowing. While Andersen's particular terminology has never taken a central role in discussions of these issues, the terms are still in some use, and the field as a whole has seen a proliferation of various terms focusing on this and similar dichotomies.

Ole Nedergaard Thomsen's paper proposes to investigate language acquisition and change, as dealt with in Andersen's model of abductive and deductive change, in its larger perspectives of Tradition, Language Gaming, Languaging, and a model named Total Human Evolutionary Cognition and Communication (THECC). The levels of the present system of THECC correspond to stages of the evolution of human language, and it shows that it coheres with Peirce's architectonic of sciences, the hypothesis being that Science is a second order system to THECC. Thus, the three levels of Normative Philosophy correspond to the main stages of the evolution of Languaging, viz. emotional Mimetic Signalling, ethological Sign Playing, and Language Gaming. Language Gaming corresponds to Normative Logic and has three levels: Communion, Practice, and Tradition. Tradition answers to Methodetic, with its stages of inquiry, thus, in terms of language acquisition and change, the hypothesis of a code (abduction), the testing of it in actual Practice (deduction), and its *conventionalization* (induction). It is Thomsen's contention that *Induction* is the logical conclusion of Andersen's model.

Iván Igartua's paper deals with the typology and diachrony of morphological reversals, which represent a particular type of mismatch between morphological form and syntactic or semantic function. Inverse marking has been found in several languages, but it is not usually included as a special phenomenon in morphological studies. There have been significant advances in recent times regarding the synchronic description and theoretical assessment of morphological reversals (see Baerman 2007), but the diachronic treatment of this set of phenomena is at most in its incipient stage. Despite the overall scarcity of historical data on the rise of inverse marking patterns, there is, nonetheless, a certain amount of evidence that allows for an understanding of the dynamics of morphological polarity. Igartua's article first provides a revised typology of morphological reversals and then examines two processes of change leading to the appearance of inverse encoding patterns in two inflectional systems (declensional paradigms in Old French and the feature of number in Upper Sorbian). These systems differ in some respects, e.g. in the extent to which they can be considered morphological reversals, but both innovations demonstrate some of the motives, mechanisms, and functional principles underlying the emergence of inverse marking patterns in inflectional morphology.

Juliette Blevins explores the concept of markedness in a typology of sound change. Many sound changes have been attributed to misperception. When two

sounds A and B are perceptually similar, A can be misperceived as B and vice versa. One sound change attributed solely to perceptual similarity is  $\theta > f$ . Misperception of  $[\theta]$  as  $[f]$  yields  $\theta > f$ , while hearing  $[f]$  as  $[\theta]$  should lead to  $f > \theta$  changes. Context-free shifts of  $\theta > f$  are attested, but regular  $f > \theta$  changes are rare. Recent research questions the existence of  $f > \theta$  changes and the perceptual basis of  $\theta > f$  changes. Historical, typological, experimental, developmental, and language contact data are reviewed here and support the original perceptual account of  $\theta > f$  and  $f > \theta$ , suggesting that the observed asymmetry can be explained phonetically and structurally, without reference to markedness (cf. Andersen 2008).

## Indexicality

Starting out from a precise example, that of the Danish verb *forstå* ‘understand’, Peter Juul Nielsen explores the diachronic morphology of this verb, in order to shed light on the indexical function and to review the so-called morpheme-based analysis. With a critical assessment of morphomic morphology as point of departure, he presents an analysis of the structure of the Danish verb *forstå* ‘understand’ and its development from Early Middle Danish to Modern Danish. Based on a semiotic-functional framework (Andersen 1980, 2010; Harder 1996), the analysis is an examination of the strong past tense form *forstod* ‘understood’ and its relation to the inflection of the simplex verb *stå* ‘stand’. The original isomorphism between expression plane and content plane has been lost, but indexical relations on the two planes ensure that structural meaningfulness is maintained. The structure and development of *forstå* is further compared to that of the verb *overvære* ‘attend, witness’, and the paper offers an alternative strategy to the morpheme-based analysis of English *understand*.

Meillet’s views on word order and word order change as an alternative way of grammaticalization have had, it seems, few followers within mainstream grammaticalization studies. Lars Heltoft’s article is an attempt to take Meillet seriously, in the context of Andersen’s view of morphology and the principles of its analysis. Taking Andersen (2010) as his point of departure, he proposes a typology of the ways word order can grammaticalize, i.e. organize in closed paradigms, built on the distinction between symbolic, indexical and iconic meaning.

## Problems of reanalysis

In his publication on reanalysis and linguistic change, Andersen (2001:234) states that “(i)t is not clear yet what constitutes structural ambiguity in surface realizations; this remains a question for the future”. As a tribute to Henning Andersen,

Hans Henrich Hock's paper examines a case of (near-) systematic structural ambiguity regarding Vedic passives and anticausatives and demonstrates that this ambiguity creates serious obstacles to determining whether anticausatives are reanalyzed from passives or vice versa. In fact, given the persistent structural ambiguity it is possible that different speakers preferred different accounts, whether for all relevant verbs, for subsets of the verbs, or even for individual verbs, in individual contexts.

The paper by Vit Bubenik is intended as a contribution to the current theoretical discussions regarding the issues of grammaticalization, degrammati(calizati)on and reanalysis as practiced by scholars working predominantly in Western European, Greek and Slavic languages. He presents and discusses relatively under-represented data from the West Iranian languages by surveying fundamental morphological and syntactic changes in the development of the verb systems of Persian, Tajik, Kurdish and Balochi: (i) the realignment of the Old Persian possessive construction as the finite verb form in Middle Persian, (ii) the establishment of the analytic perfect in Early New Persian, (iii) degrammati(calizati)on of the copula in the perfect aspect in Kurdish and Balochi, (iv) grammaticalization of the adverb *hamēw* 'always' as the imperfect marker in Early New Persian, (v) the formation of the modal future tense in New Persian, and (vi) the role of grammaticalization and degrammati(calizati)on in the renewal of the passive diathesis in Early New Persian.

Reanalysis and grammaticalization in the domain of voice are investigated by Michela Cennamo, who studies the reanalysis of lexical verbs as passive auxiliaries and light verbs in the passage from Latin to (Italo-)Romance, focusing on (i) the diachronic relationship between auxiliarization and light verbs, (ii) the direction of the changes, and (iii) the often-quoted pertinacity to change of light verbs. It is shown that the light verb uses of the verbs under investigation (COME, BECOME), both in Late Latin and in some early Italo-Romance vernaculars, exhibit a different type of decategorialization and desemanticization compared with auxiliaries, attested later than their auxiliary function.

Bjarke Frellesvig's paper considers a seemingly anomalous and not well-described word order phenomenon in Old Japanese, the earliest attested stage of Japanese, and proposes a diachronic interpretation of it, which in turn can be generalized to contribute to an understanding of other morpho-syntactic developments which may be reconstructed for pre-Old Japanese, including the emergence of a number of grammatical morphemes in Old Japanese. In his contribution, he proposes an understanding of an Old Japanese construction as representing a transient stage in the emergence of the complex predicate constructions in Japanese. Other than basing itself on the theoretical concepts developed by Andersen, the author's approach to these Japanese constituent order phenomena draws particular inspiration from Andersen's account and understanding of some long-term word order and categorial changes in Polish (Andersen 1987), which have several points



in common with those found in Japanese: Both involve categorial reinterpretation (an abductive innovation) and subsequent structurally motivated shifts in surface position, gradually realized over time (deductive innovations).

Jan Ivar Bjørnflaten studies reanalysis and actualization processes in the evolution of the past tense system in East Slavic languages. The large majority of the Slavic languages have in historical times undergone a radical transformation in the expression of past tense. This transformation has been the loss of the synthetic past tenses of aorist and imperfect, and their replacement by a past tense based on the erstwhile perfect. Bjørnflaten's contribution discusses how this transformation created space for new ways of expressing past tense. One of these pathways was the establishment of an expression of past tense based on the past active participle, also called the gerundial past tense, which has given rise to a new past tense in Northwest Russia, above all in the Pskov area, cf. Pskov dialectal *i jon pom'orši toper' uže*, versus Standard Russia *i on teper' uže umer* 'and he died now already'. It is demonstrated how the emergence of the *l*-participle as the general past tense opened up the possibility for a reanalysis of the past active participle as a finite past tense verb-form. The actualization of the reanalysis is illustrated by examples from the Pskov Chronicle as evidence of how a novel past tense can come into being.

In their paper, Kirsten Jeppesen Kragh and Lene Schøsler study the reanalysis, grammaticalization, and paradigmaticization of constructions becoming members of grammatical paradigms. The changes are illustrated by means of a single lexical unit, i.e. the French verb of perception *voir* 'to see'. This verb is found in very different contexts, which have been reanalyzed resulting in grammaticalized structures. Therefore, this verb provides an interesting illustration of the pathway of a lexical unit into grammar. One reanalysis has resulted in the creation of *voir* followed by the deictic relative as part of a marker of progression, i.e. as a member of the category of tense, aspect, and mood. Another pathway involves the imperative form of the verb, which has grammaticalized as presentatives (*voici* and *voilà*). These forms have undergone further grammaticalization or, following the terms of Henning Andersen, *regrammation*, into markers of focalization.

The concept of reanalysis is also the main topic of Harold Koch's paper, which discusses three examples of reanalysis in the Pama-Nyungan languages of Australia, affecting word-, clause-, and sentence-level constructions, respectively. First, the elimination of a morpheme boundary, with absorption of an erstwhile suffix into the nominal stem, in Western Desert dialects revisits and amplifies earlier discussion from Koch (1995), canvassing various motivations and finding support from more recent data from Langlois (2004). Second, the gradual implementation of the effects of a change from ergative to accusative alignment in Panyjim are explored within Andersen's framework of actualization. The third study shows, on the basis of the etymology of formal markers, how, in the Arandic languages, biclausal

structures have developed via auxiliarization into inflectional markers of imperfective aspect, but also into a set of inflections realizing contrasting values within a new morphosyntactic category of “associated motion”. This section articulates the diachronic developments behind the synchronic system, building on earlier suggestions by Koch (1984) and Wilkins (1991).

John Ole Askedal’s contribution is a comparative overview of overt marking of definiteness in Germanic and Balto-Slavic from a historical perspective. The main functional types and formation types are compared as well as general aspects of the historical development, all of this leading towards a typological overview of definiteness marking in these languages in an areal perspective.

## Actualization

Two papers investigate how innovation is spread. Ronelle Alexander explores diatopy and frequency as indicators of spread. She applies the idea that diatopy, the geographical distribution of linguistic differentiation, gives important clues about diachrony as well as the direction and spread of language change to the study of accentual phenomena in Bulgarian dialects, focusing on the accentuation of phrases including clitic forms. Methodologically, her study does not work with isoglosses of the normal, binary type (which mark the presence vs. absence of a feature). Rather, she utilizes a database consisting of large stretches of conversation, recorded in the field by herself and her colleagues over a 27-year period, to construct indices of relative frequency of occurrence of the pattern in question. The resulting isoglosses allow new conclusions to be drawn about accentual patterns in Bulgarian dialects.

Constructing a typology and cross-linguistic survey for Aktionsart, actionality, and related notions is largely infeasible at present because so few Aktionsart systems have been fully described, they are typically complex and intricately dependent on verbal semantics and classification, and despite its inherent connection to the lexicon, information about Aktionsart categories is rarely recoverable from dictionaries. The paper by Johanna Nichols proposes a very minimal distinction of continuous (lacking inherent endpoints, chiefly states and activities) vs. bounded (having one or more endpoints, e.g. punctual, telic, and ingressive predicates and subtypes such as accomplishments and achievements). The word family of a predicate like *sit* can be based either on the continuous form, as in English, where continuous *sit* is the base and *sit down* is derived, or on the bounded form, e.g. Slavic \**sed-* ‘sit down’ and derivative \**sid-e-*. A stumbling block in this endeavor has been sets like continuous *know*: bounded *find out*, *realize*, etc., where no regular derivation relates the forms. Are they a paradigm? If so, what is the base? Structuralist criteria and Andersen’s notion of markedness agreement indicate that they do form a paradigm and the continuous form is the base.

## Language change and diachronic typology in Balto-Slavic

Henning's work has touched on many languages, but none as consistently as those of the Balto-Slavic branch of Indo-European. As a result, several papers on topics specifically pertaining to the diachronic analysis of Baltic and Slavic languages are included here.

Thomas Olander takes up a theme of special interest for language classification and subgrouping, namely the question of the relation between the Baltic and Slavic subgroups of the Indo-European language family, which are more closely related to each other than to any of the other surviving subgroups; yet it is debated whether Baltic and Slavic together form a subgroup of Indo-European descending from a uniform Balto-Slavic proto-language. While most historical linguists do operate with a Balto-Slavic subgroup and a corresponding proto-language, others remain skeptical. In his contribution, Olander focuses on one of the most salient similarities between Baltic and Slavic: the paradigmatic accentual mobility found in both subgroups. Following a discussion of non-trivial shared innovations as a diagnostic tool in linguistic subgrouping, he examines the Balto-Slavic problem in the light of three different hypotheses on the origin of accentual mobility.

Laura A. Janda follows up on a relatively recent paper by Andersen (2012), which points out that the Russian "new vocative" (e.g., *мам!* 'mama!'; *Саша!* 'Sasha!') presents an unusual behavior that sets it apart from ordinary case marking. The vocative is subject to functional restrictions to certain pragmatic expressions, lexical restrictions to words that can serve as forms of address, syntactic restrictions to a position independent of the sentence, association with diminutives (which are themselves peculiar), morphophonological restrictions to words ending in *-a* with penultimate or prepenultimate stress, and various phonological peculiarities. On the basis of these facts, Andersen (2012: 126) argues that the vocative should not be considered a form of nouns: "Russian vocatives are not declensional wordforms but transcategorial derivations formed by conversion." Janda argues that there can be no doubt that Andersen is correct in identifying the Russian vocative as an uncommon linguistic category but asks whether this entails setting up an additional part of speech. In order to provide a cross-linguistic perspective, she brings in evidence from North Saami, where the first person singular possessive suffix has a vocative interpretation and is arguably functioning as a vocative case marker.

Finally, Jadranka Gvozdanović's paper analyzes the typology of change processes proposed by Andersen (2001, 2006) by minutely investigating semantic and pragmatic properties of temporal categories in the earliest Slovene texts which emerged under German cultural influence, but preserved primacy of system-motivated developments. The investigated texts are the Freising Fragments (preserved in a copy from the end of the 10th century, but originally probably two centuries older), the

manuscript of Rateče (from the 14th century), and Trubar's Catechism from the 16th century compared to its main source, Luther's Catechism. All of these texts preserve the same Pannonian/Central European narrative heritage and illustrate the development of temporal and modal categories. Specifically, the Slovene loss of the imperfect and the aorist proceeded faster than the southern German loss of the preterit due to full functional replacement by the existing aspecto-temporal categories in Slovene. The emerging future tense in Slovene appeared as a temporal variant of epistemic and subjective modality, in a way only partly reminiscent of German models in Luther's texts. In addition to confirming the essence of Andersen's typology, this investigation stresses the importance of pragmatics as a trigger and frame for grammation processes.

## Concluding remarks

In sum, the papers included in this volume provide updated insights into different aspects of language structure and language change, especially ones associated with Henning Andersen's own work. The diachronic perspective clearly predominates both in theoretically oriented and more concrete contributions, and the vast majority of them take inspiration in specific pieces of Henning Andersen's enduring oeuvre. Far from just summarizing previous results, the contributors offer new material and ideas regarding the evolution of linguistic systems. As could be expected, the notion of *abductive change*, one of the central concepts that characterize Henning Andersen's linguistic thought, is present in more than one paper. Other terms of his (*deductive change*, *remedial innovation*) show up in different papers as well. It is no surprise that the Slavic languages (Old East Slavic, Russian, Upper Sorbian, Slovene) are well represented throughout the volume, but its scope is much wider, both in terms of typology and in terms of the languages analyzed.

Many topics in Henning Andersen's work have not been touched in this collection of papers. To mention but a few such themes from the impressive breadth of his scientific production: Language contact in prehistory, phonological processes like diphthongization, lenition, and vowel contraction, or the general typology of morphological change, are not directly reflected. But in the face of such breadth, choices needed to be made and this more narrowly focused volume emerged as the best fitting tribute to our colleague.

Because in fact this volume is, above all, a deserved tribute to his inspiring and groundbreaking work in the field, especially in diachronic linguistics. The evolution of forms and meanings remains one of the most interesting and intriguing aspects of language, and although linguists like Henning Andersen have vastly advanced our knowledge, there is still, undoubtedly, enough room for further contributions

by present scholars as well as by generations of linguists to come. The papers included in this volume may be viewed as a conspicuous instance of this.

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PART I

# On the theory of language change



# Andersen (1973) and dichotomies of change

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Henning Andersen in his well-known and oft-cited (1973) article “Abductive and deductive change” (*Language* 49(4).765–793) distinguishes two types of language change: evolutive change – defined as “change entirely explainable in terms of the linguistic system that gave rise to it” – and adaptive change – defined as “a change not explainable without reference to factors outside the linguistic system in question”. In this paper, we present an overview of the evolutive versus adaptive dichotomy in Andersen’s work and the role this dichotomy has played in the field in ensuing years. While this particular terminology has never taken a central role in discussions of these issues, the terms are still in some use, and the field as a whole has seen a proliferation of various terms focusing on this and similar dichotomies.

**Keywords:** evolutive vs. adaptive change, internally vs. externally motivated change, terminological dichotomies, language change

## 1. Introduction

Henning Andersen’s “Abductive and deductive change” (1973, hereafter ADC) is an important work that has garnered much attention over the years. According to Google Scholar, it is by far his most-cited work, with 821 citations from works on syntax, phonological theory, language and biology, morphological change, constructionalization, and markedness, among other areas of investigation.

The title “Abductive and deductive change” refers to modes of inference crucial to language change. “Abductive change” invokes *abduction*, a mode of inference introduced by the American philosopher Charles Sanders Peirce in which one proceeds from a result, invokes a law, and infers that something may be the case; it is often confused with induction but is in fact distinct from it, as Peirce explained. “Deductive change” invokes *deduction*, a mode in which one applies a law to a particular case and predicts a result therefrom. One mode that is not mentioned,



but is implicit nonetheless, is *induction*, in which one proceeds from observed cases and results and from them establishes a law, a generalization.

ADC, however, is about much more than just these modes of reasoning and their application to language change. While much of the attention paid to ADC focuses on the abduction/deduction dichotomy, our attention here is on a different dichotomy, that of *evolutive* versus *adaptive* change. This distinction can in simple terms be described as that between internally motivated and externally motivated change to a linguistic system, what is often now seen as a fundamental concept in introductory presentations of language change.

In this paper we present an overview of the *evolutive* versus *adaptive* dichotomy in Andersen's work and the role this dichotomy has played in the field in ensuing years. While this particular terminology has never taken a central role in discussions of these issues, the terms are still in some use, and the field as a whole has seen a proliferation of various terms focusing on this and similar dichotomies.

## 2. Evolutive versus adaptive and its historical context

### 2.1 Evolutive versus adaptive in Andersen (1973)

As is often the case in academic work, Andersen (1973) can be seen as one of a series of milestones along the way in the working out of important concepts and theories. Two earlier works by Andersen show the beginnings of these ideas before the full development in 1973. The beginnings of the focus on, for example, *deductive* change are found in Andersen's (1969) work on diachronic morphophonemics and Ukrainian prefixes, where he makes a distinction that is slightly different from but clearly related to what would be his main focus in 1973:

... we identified two phases in each morphophonemic change: a covert phase, consisting in the formulation of a new morphophonemic rule, and an overt phase, consisting in a gradual elimination of lexical exceptions to that rule. The distinction between these two phases is of fundamental importance, for it is relevant for all linguistic change.

The first (covert) phase we may call *INDUCTIVE CHANGE*, for it arises out of the inductive process of rule formulation. ... The second phase we may call *DEDUCTIVE CHANGE*, for it takes place in the process of creating surface forms from base forms by the application of rules. (Andersen 1969: 828–829)

The dichotomy that is our focus here was first introduced in Andersen's (1972) paper on diphthongization, where in a footnote he says that:

It is appropriate to note at this point that I recognize the fundamental distinction between evolutive change and adaptive change. EVOLUTIVE CHANGE can be characterized as internally motivated change, as change in a linguistic system entirely explainable in terms of that system itself. ADAPTIVE CHANGE, by contrast, is change in a linguistic system explainable only with reference to factors extraneous to that linguistic system, whether linguistic (e.g. language contact) or non-linguistic (e.g. the introduction of labrets). (Andersen 1972: 12, fn. 1)

He does not discuss this distinction further here, however, since evolutive change and not the contrast between the two is the focus of the paper, but he does point out “that the widely held view that all linguistic change is adaptive is fallacious. Evidently, while induced change may account for cases of convergence, linguistic divergence can be explained only as the result of evolutive change” (Andersen 1972: 12, fn. 1).

It is in the well-known 1973 paper, then, that the dichotomies of abductive versus deductive and evolutive versus adaptive come into focus. The evolutive versus adaptive dichotomy, our central concern here, is introduced in the course of discussing some sound changes affecting “sharped” (i.e. palatalized) labials, such as [pʲ], in various dialects of Czech – an important contribution by Andersen to Slavic and especially Czech linguistics. Here he presents two ways of characterizing key dimensions to this change. First, he recognizes earlier regular, purely phonetically driven changes –  $p'b'm' > tdn$  in some dialects, and  $p'b'm' > pbm$  in others – that were part of the general depalatalization of labials in Czech. Second, he identifies a later, lexically particular shift in the first group of dialects of  $tdn > pbm$ , which occurred after contact between the dialect groups. An important aspect of this second change is that the labial outcome in the first change was associated with the socially and economically dominant dialect.

Andersen saw these two changes as fundamentally different in nature. The first was driven entirely by linguistic factors, in this case acoustic phonetic conditioning – in that a palatalized labial is acoustically close to a dental – while the second was driven by social factors, motivated by contact between speakers of the different dialects. The former he referred to as an “evolutive change” and the latter as an “adaptive change”.

An evolutive change, as Andersen defines it here, in slightly different terms from the earlier definitions above, is “a change entirely explainable in terms of the linguistic system that gave rise to it” (p. 778), thus a system-internal development arising out of the linguistic system in and of itself. Adaptive change, by contrast, is “a change not explainable without reference to factors outside the linguistic system in question” (ibid.), thus a system-external development driven by the embedding of the change in a larger social structure. Both types involve abductive and deductive

reasoning, thus establishing a connection between the abductive/deductive dichotomy and the evolutive/adaptive dichotomy.

The metaphor behind the terms “evolutive” and “adaptive” seems to be that with evolutive change, a language – almost like an organism – undergoes changes that are the result of its own internal structure and constraints, whereas with adaptive change, the language or, perhaps better, the speakers of the language accommodate their usage to that of others in order to avoid being socially stigmatized. The terminology thus recognizes a key distinction in our understanding of language change, namely the dichotomy between internal and external change or, better stated, between internally motivated versus externally motivated change. This dichotomy reflects the fact that language is both a psychological/cognitive/individual phenomenon, i.e. “internal” in a certain sense, and a social/interactional phenomenon, thus “external” in a certain sense.

## 2.2 Earlier conceptions of this distinction

While the distinction between internal and external motivation seems to be fairly basic and one that is fundamental to the study of language change, Andersen appears to have been one of the first to articulate it in this particular way. While language contact was always acknowledged as a source of borrowings and other developments in language diachrony, the focus of the Neogrammarians was on relatedness and reconstruction, with borrowing relevant only as needed to exclude material that was extraneous to determining relatedness. Even work that focused more specifically on language contact (e.g. Wave Theory, early studies of Creoles, etc.) focused on the nature of change, rather than the factors that lead to it. Similarly, structuralists like de Saussure recognized borrowing as a mechanism of change, but focused mainly on matters internal to the linguistic system – and thus, with regard to loanwords, on how they fit into these systems.

Interest in the motivations for change began to come into sharper focus as the field of modern linguistics continued to develop. Leonard Bloomfield (1926, 1933), for example, distinguished between changes in ways that lend themselves to a distinction between internal and external to the system (e.g. “sound-change” and “analogic change” (internal) versus “linguistic substitution” and “linguistic borrowing” (external); 1926), but did not use those terms as such. But Uriel Weinreich, in his *Languages in contact* (1953), contrasts “purely linguistic studies of languages in contact” with “extra-linguistic studies on bilingualism and related phenomena”, saying ultimately that “they are all essentially complementary in understanding a phenomenon of so many dimensions” (as language contact). This conceptually comes very close to the internal/external distinction.

Charles Hockett (1958, 1965) refers to the “triad” of sound change, analogy, and borrowing, similar to Bloomfield’s division, explicitly identifying it as generally recognized in the 1870s, and noting that:

Nor was there any great fuss about [this] basic triad ... Whether each of these was to be interpreted as a KIND of change, a CAUSE of change, or a MECHANISM of change is obscure; apparently the scholars of that time had not the habit of making distinctions of this sort. Even so, this classification afforded some answer to another question left open by the genetic hypothesis, which ... had nothing much to say about either how or why language changes. The threefold classification was to some extent an answer to the how. (1965: 190)

Hockett also draws a distinction between the external and the internal **history** of a language in a chapter on the history of English in his book *A course in modern linguistics* (1958); this distinction comes close to internal versus external as causes of change, especially since “contact with speakers of other languages” is part of what he includes under “external history”, but it is not an explicit drawing of this distinction.

The years preceding the publication of Andersen (1973) were ones in which important developments were occurring in the field of linguistics, with a move away from structuralism and with the rise of at least two important linguists who can be seen as representative of two major trends to impact linguistics for many years to come. One was Noam Chomsky and the generative approach to linguistic analysis, which did not concern itself much with the social side of language and the role it plays, and the other was William Labov and the new focus on the importance of sociolinguistics and language variation in the development of languages. Weinreich, Labov & Herzog, in their seminal 1968 work, for example, “suggest that a model of language which accommodates the facts of variable usage and its social and stylistic determinants not only leads to more adequate descriptions of linguistic competence, but also naturally yields a theory of language change that bypasses the fruitless paradoxes with which historical linguistics has been struggling for over half a century” (p. 99). They also introduce five central problems for the theory of language change: constraints, transition, embedding, evaluation, and actuation (p. 102), which have played an important role in studies in the field ever since.

Labov’s 1965 paper and many subsequent publications were also important milestones along the way to what can be seen as this new focus in language change. The drawing of distinctions between internal and external factors was a central part of this, as Labov notes, for example, that “linguistic change cannot be explained by arguments drawn from purely internal relations within the system, even if external, sociolinguistic relations are recognized as additional conditioning factors. In the mechanism of linguistic changes which we have observed, the two sets of relations are interlocked in a systematic way” (1965: 91). Labov also introduces the notions

of “change from below” or “below the level of social awareness” (1965: 110) versus “change from above”, that is, “a sporadic and irregular correction of the changed forms towards the model of the highest status group” (1965: 111), which map in some ways to the internal versus external distinction and the evolutive versus adaptive dichotomy of Andersen.

From this brief overview, ADC can be seen to be a natural and important part of the development of the modern-day field of historical linguistics. (See also the overview in Thráinsson (2012) with regard to the development of some of these concepts.) We personally have found the distinction Andersen draws here between evolutive and adaptive to be insightful and important and have employed it productively and usefully in teaching introductory historical linguistics. Our goal in the next sections is thus to explore how these particular concepts have fared in the years since ADC’s publication, especially in the light of other competing terms that have emerged.

### 3. Evolutive versus adaptive and ADC’s reception

#### 3.1 Initial survey

As noted, ADC has attracted a considerable amount of attention over the years; however, the evolutive/adaptive distinction has not been the focus of most of the attention. In order to get a sense of the place of the evolutive versus adaptive distinction in the field, we conducted an initial survey of 25 introductory works in English that focus on historical linguistics; these works, which include handbooks and in some cases multiple editions of the same work, are listed in (1).

- (1) Aitchison (1981/1991/2001) (*Language change: Progress or decay?* (1st/2nd/3rd edn.))
- Anttila (1989) (*Historical and comparative linguistics* (2nd edn.))
- Bowern & Evans (2015) (*Routledge handbook of historical linguistics*)
- Bynon (1977) (*Historical linguistics*)
- Campbell (1999) (*Historical linguistics: An introduction*)
- Crowley (1987/1997) (*An introduction to historical linguistics* (1st/3rd edn.))
- Hale (2007) (*Historical linguistics: Theory and method*)
- Hock (1991) (*Principles of historical linguistics* (2nd edn.))
- Hock & Joseph (1996/2009) (*Language history, language change, and language relationship* (1st/2nd edn.))
- Jeffers & Lehiste (1979) (*Principles and methods for historical linguistics*)

- Joseph & Janda (2003) (*Handbook of historical linguistics*)
- Keller (1994) (*On language change: The invisible hand in language*)
- Labov (1994) (*Principles of linguistic change*, vol. 1: *Internal factors*)
- Labov (2001) (*Principles of linguistic change*, vol. 2: *Social factors*)
- Labov (2010) (*Principles of linguistic change*, vol. 3: *Cognitive and cultural factors*)
- Lass (1997) (*Historical linguistics and language change*)
- Lehmann (1992) (*Historical linguistics* (3rd edn.))
- McMahon (1994) (*Understanding language change*)
- Ringe & Eska (2013) (*Historical linguistics: Toward a twenty-first century reintegration*)
- Sihler (2000) (*Language history: An introduction*)
- Trask (1994) (*Language change*)
- Trask (1996) (*Historical linguistics*)

The results of this survey show that, perhaps surprisingly, the evolutive/adaptive distinction has not received much attention at all, and certainly far less than we expected, based on our own sensibilities as to its importance and utility. None of these 25 works has “adaptive change” or “evolutive change” listed in its index. Moreover, of the 25 works, ADC shows up as a bibliographic entry in only seven of them: Anttila (1989), Bowerman & Evans (2015) (in Paul Kiparsky’s chapter on “New perspectives in historical linguistics” and Stephen Anderson’s chapter on “Morphological change”), Hale (2007), Hock (1991), Joseph & Janda (2003), Lass (1997), and McMahon (1994), though in the Joseph & Janda handbook, there are four different chapters that refer to ADC (“On language, change, and language change – Or, of history, linguistics, and historical linguistics”, by Richard D. Janda & Brian D. Joseph; “Analogy: The warp and woof of cognition”, by Raimo Anttila; “Constructions in grammaticalization”, by Elizabeth Closs Traugott; “An approach to semantic change”, by Benjamin W. Fortson, IV).

Closer inspection reveals that of these various mentions of ADC, very few are to the evolutive/adaptive notions that are the focus here. From the Joseph & Janda (2003) handbook, for example, Fortson (p. 662, fn. 11), refers to ADC with regard to the term “change” in general, and particularly versus “innovation” (on which see the discussion of Andersen (1988) and (1989) in §3.2 below). Traugott (p. 626) cites ADC with regard to abduction, as does Anttila (p. 440, fn. 12), who is rather critical of Andersen’s take on abduction, though he does refer to ADC as “a deservedly influential article”. In this regard, Anttila is expanding on his own views on abduction, as he spends a considerable amount of space in his 1989 work (pp. 196–203

and 404–409) discussing abduction, though without any overt reference to ADC.<sup>1</sup> Lass (1997: 334–336) similarly cites ADC with regard to abduction, while Hale (2007: 40) mentions ADC in the context of discussing Hopper & Traugott (1993) on grammaticalization. Hock (1991) includes ADC in his bibliography but does not discuss any of the substantive notions introduced in Andersen's article.

Specific mention of adaptive and/or evolutive rules can be found, however, in Janda & Joseph (2003) and McMahan (1994). Janda & Joseph's introduction to the 2003 handbook refers to adaptive rules (p. 144, fn. 30), but not evolutive rules, and McMahan (pp. 92–97), in the course of a discussion of the Czech labial changes and abduction more generally, refers to both types of rules.

In the case of some of these works, the failure to cite ADC may be a function of the level at which the book was aimed. ADC is, after all, a fairly sophisticated article, whether one focuses on the Czech contribution, on abduction, or on the evolutive/adaptive distinction. Accordingly, it would not be expected to be treated in Trask (1994), for instance, a short (less than 100 pages) and very low-level introduction, aimed only at presenting and illustrating some key, commonly discussed notions on language change; similarly, Aitchison (1981), and its two subsequent editions (1991, 2001), is aimed more at a general readership, and not at budding linguists *per se*. But the other works, even if introductory in nature in a certain sense, have a narrower audience in mind, so that the absence of reference to ADC can be seen as somewhat surprising.

In addition to this initial survey of general texts on historical linguistics, we looked in a bit more detail at some of the places and ways in which this evolutive/adaptive distinction has been cited in the years following ADC's publication, looking first at Andersen's continued development of the terminology within his own work (§3.2), then at its general reception by others (§3.3). A more recent resurgence of interest, of sorts, is discussed later in §5.2.

### 3.2 The continued development of the evolutive/adaptive dichotomy

In the years immediately following the publication of ADC, the terms are taken up in other writings. Andersen himself, of course, continued to use the terms, applying them within different contexts but with the same fundamental meanings.

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1. Some clarification is needed here, as Anttila (1989) is a second edition of his book originally published in 1972, thus before ADC. Still, it is not unreasonable to think that Anttila and Andersen may have had some discussions about abduction, as they were colleagues at UCLA and Anttila does mention the Czech change of palatalized labials to dentals (though without any explicit mention of Andersen).

In 1974, for example, he discusses their role within the larger context of “the problem of formulating an overall typology of linguistic change” and the effort “to establish general types of change” (Andersen 1974: 17). In light of this problem, he proposes that “it may be productive to begin by distinguishing between innovations motivated by linguistic structure and innovations motivated by the communicative system. I call the former *evolutive* and the latter, *adaptive innovations*” (1974: 17). He expands here on adaptive innovations as “innovations which alter the relation between a given grammar and some other constituent(s) of the communicative system, and which cannot be explained without reference to the latter” and identifies some subcategories. *Evolutive innovations* are defined as “the innovations that arise when a linguistic code is maintained through time, and which are explained entirely by relations within the grammars of the speakers” (Andersen 1974: 23). He continues this theme in Andersen (1980a), which is dedicated to developing a typology of morphological change in particular, focusing on the *abductive/deductive* dichotomy (as modes of innovation) and the *evolutive/adaptive* dichotomy (as categories of innovation).

From a slightly different perspective, in his paper on “Russian conjugation: Acquisition and evolutive change” (Andersen 1980b), he ties the *evolutive/adaptive* distinction explicitly with the role of language acquisition in language change, setting up the two parts of the language learner’s task as “(a) in the formation of a system of relations that forms the core of his linguistic competence, and which embodies what is motivated and productive in his language, and (b) in the formulation of special rules (*adaptive rules*, in the sense of Andersen 1973) which permit him to adjust his speech to what he perceives to be the norms of his speech community” (Andersen 1980b: 285). He also indicates his hope that “this study may ... contribute to an understanding of how language acquisition strategies determine evolutive change in morphophonemics” (p. 299).

Two further works that are important for the understanding of the *evolutive/adaptive* dichotomy (and which are often cited in lieu of ADC) are the 1988 “Center and periphery: Adoption, diffusion, and spread” and the 1989 “Understanding linguistic innovations”. The focus in the 1988 paper is on dialectology and language change. The section on “Spread without diffusion” looks at “a number of examples illustrating ... the initial differentiation of uniform areas through evolutive change, the alternation of (*deductive*, system-motivated) innovations elaborating the norms and subsequent (*abductive*) innovations by which the systems involved may be reinterpreted” (Andersen 1988: 76). He again makes

a fundamental distinction ... between *adaptive innovations* and *evolutive innovations*. The former category includes, as one subtype, *contact innovations*, which are motivated by speakers’ efforts to adapt their speech to what they perceive to be the norms of their fellows .... Among the *evolutive innovations*, one subcategory



includes the abductive innovations which occur in primary language acquisition based on heterogeneous usage and blurred norms .... (1988:77–78)

The 1989 paper picks up on themes from Andersen (1974) and Andersen (1980a), elaborating on the place of the evolutive/adaptive distinction within a general theory of language change.

### 3.3 Reception of evolutive versus adaptive: The first twenty-five years

In the years following the publication of ADC, the terms *evolutive* and *adaptive* do seem to have gotten a foothold of sorts in the field. For example, in the 1982 proceedings of the 3rd International Conference on Historical Linguistics (Maher et al. 1982), Gerritsen & Jansen (1982: 26) cite ADC and particularly the terminology of evolutive and adaptive change, and Itkonen (1982) cites Andersen (1974) for the division of linguistic innovations into the “two main types”, adaptive and evolutive.

Studies on historical phonology and dialectology in particular seem to cite ADC more often than others, which perhaps is to be expected, considering the focus of the study in ADC and its importance to those particular subfields. An example of this can be seen in Harris’s *Phonological variation and change: Studies in Hiberno-English* (1985), in which references to ADC and evolutive/adaptive are found throughout the book. A sample quote, one in which the author explicitly connects Andersen’s terminology to that of Labov (as we shall also see in other, more recent, works), is as follows:

In such cases, variability is likely to reflect a gradual internal development within the dialects in question (i.e. “evolutive” change in Andersen’s 1973 sense). ... One alternant may be the outcome of internal evolutive change within the dialect in question; the other is likely to be associated with some external, prestige variety. In such cases, variation is an indication of “change from above” ... and stems from what was traditionally called borrowing or from what Andersen (1973) refers to as “adaptive” change. (Harris 1985: 130)

Another study in which ADC and adaptive rules in particular are referenced is Disterheft’s (1990) “The role of adaptive rules in language”. Her focus here is on addressing the “transition problem” of Weinreich et al. (1968): “How can language change from one state to another without interfering with communication among members of the speech community?” (Disterheft 1990: 181), and she argues that “the mechanism of language change which preserves communicability between generations is the Adaptive Rule, as proposed by Andersen (1973)” (p. 182).

A different type of study, but one that also falls within the subfield of historical phonology, is Frellesvig’s (1995) *A case study in diachronic phonology: The Japanese*

*onbin* sound changes, which (according to the Google Books summary) is “the first large scale application of Henning Andersen’s theory of language and language change”. Reviews of this book explicitly note the important role that Andersen’s work plays in it:

Bjarke Frellesvig applies Henning Andersen’s theory of language change to analyze the series of sound changes grouped under the term *onbin*, commonly translated as “sound euphony”. This theory explains the results of sound change as the outcome of decisions made by the hearer in interpreting acoustic input. ... In the theory of language change adopted from Andersen, change arises through innovations which are either adaptive or evolutive and deductive or abductive.

(Wehmeyer 1998: 681, 682)

As the words “case study” hint, Frellesvig ... is not as much concerned with the group of Japanese sound changes collectively called *onbin* as with using their analysis to demonstrate the virtues of the approach to linguistic change pioneered by Henning Andersen.

(Unger 1997: 363)

While this brief review of some of the citations of and references to ADC and the evolutive/adaptive distinction in the historical linguistics literature in the early years is hardly exhaustive, we hope that it gives an accurate picture of the developments: ADC and the dichotomies therein were not forgotten and were taken up in various ways across the field, but they also did not hold a central place in the discourse of language change.

#### 4. Why this reception for ADC and the evolutive/adaptive distinction?

The question of why ADC and the evolutive/adaptive distinction specifically have not taken a more prominent position in the field is complex and no definitive answers can be given, but we can offer some speculation. We see two possible reasons, one having to do with the framework Andersen initially adopted for presenting this distinction, and the other having to do with competing terminology that has emerged.

##### 4.1 Generative rules?

With regard to the first reason, the evolutive/adaptive distinction may have been interpreted by some linguists as if embedded in the generative phonological framework that was current at the time of the publication of ADC. That is, Andersen speaks of “A(daptive)-Rules” and “I(mplementation)-Rules” [our emphasis –HCD/

*BDJ*], the latter being the reflex in the grammar of evolutive change.<sup>2</sup> This invites the speculation that this particular distinction appeared to some to be inherently generative in its nature and tied to one version of generativism, specifically a rule-based version, and thus could not be extended to other frameworks. This was not how Andersen intended it. In *ADC*, he says about Implementation/I-rules that they turn a phonological representation, expressed in purely relational terms, into a phonetic representation:

Like A-rules, I-rules serve the essential function of transforming a phonological representation, expressed in purely relational terms, into a phonetic representation sufficiently explicit to be realized. (Andersen 1973:785)

This means that in the European structuralist sense, Andersen's rules are mappings between phonological form (the structural relations) and phonological substance. Nevertheless, consider, for example, Ohala's (1981 et seq.) focus on the important role of the listener in sound change due to the ambiguity of the acoustic signal, which seems to echo some of Andersen's concerns. He writes:

... the acoustic speech signal [is] inherently ambiguous with respect to how it is articulated. The listener is not always able to resolve this ambiguity and may ... hit upon an articulation different from that used by other speakers. (Ohala 1981:178)

In this way he seems to pick up on two statements made in *ADC*:

... the ambiguous character of the acoustic manifestations ... If these manifestations are not analysed correctly ... , they must be interpreted [differently] ... (Andersen 1973:771)

The source of abductive innovations is to be found in distributional ambiguities in the verbal output from which the new grammar is inferred. (Andersen 1973:789)

But Ohala explicitly notes that:

the listener ... applies his "reconstructive" rules, which ... crucially depend on his having correctly perceived the environment causing the distortion. ... (By using the term "rule" here I do not mean to put the listener's reconstructive process into the same category as the rules posited by traditional generative phonology and its offshoots.) (1981:183)

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2. Andersen does not specifically define what he means by "rule", but he uses a standard formalism, for example, "adaptive rule (roughly of the form [t] → [p'] in morphemes marked [+ A-rule])" (1973:773). However, on pages 785ff. he explains how phonology is a semiotic system, a view far from the generative position of the time.

That is, Ohala includes a specific disclaimer concerning the construct of “grammatical rule” and in this way seems to be distancing himself from generative frameworks.

But it is also important to note that the evolutive/adaptive distinction was not intended to be, nor was it, exclusively tied to the generative perspective. First, note that Andersen (1972) (where the terms are first introduced, as indicated above) criticizes generative phonology and its “abruptness doctrine” in the discussion of “evolutive phonetic change”, which Andersen holds to be essentially gradual in nature:

It is perhaps not surprising that many linguists who do not differentiate between phonetic change and diachronic correspondences believe that phonetic change is abrupt. This belief has played a prominent role in the application of the principles of generative phonology to linguistic change ... (Andersen 1972: 12–13)

He goes on to discuss what he considers to be the faulty thinking behind this view of phonetic change as necessarily abrupt, again explicitly connecting it to generative approaches to language change:

Two lines of reasoning have been used to support the “abruptness doctrine”. The first ... has as its point of departure a total or relative ignorance of the extensive body of evidence for the nature of phonetic change accumulated primarily by European linguists, chiefly in the pre-structuralist period. This line of reasoning is exemplified by Hoenigswald who skeptically speaks of the “alleged gradual character of phonetic alteration” and then recklessly labels it “guesswork” (1960: 72). Though it may seem incredible that lack of knowledge and imagination could persuade any scholar, Hoenigswald’s “arguments” against the gradual character of phonetic change have been widely accepted. They are repeated in many later publications –in recent years, for example, in Chomsky & Halle (1968: 250), Wang (1969: 13), King (1969: 106–19). The second line of reasoning ... is well represented by King. He assumes that a speaker’s phonological competence can be described adequately in terms of rules using only polar distinctive-feature values (plusses and minuses). (Andersen 1972: 14)

Clearly, at least some major aspects of the generative-phonology approach to phonetic change were not what Andersen had in mind when he formulated his “rule”-based terminology.

Second, while Andersen does continue to refer to “rules”, his studies that specifically focus on fleshing out the evolutive/adaptive dichotomy (e.g. Andersen 1974, 1980a, 1989) frame the distinction in terms of types or categories of **innovations**, and not on the development of rule-based systems. It thus seems clear that a rejection or passing over of ADC and its dichotomies out of a desire to avoid generative approaches is on the whole unjustified, but this issue nevertheless may have played a role.

## 4.2 Competing terminological distinctions

Another possible reason for the evolutive/adaptive distinction's lack of prominence in modern historical linguistics is that as the distinction between externally and internally motivated change continued to develop as a major factor in studies of language change, authors adopted various terms for this distinction, which can be seen as competing with *evolutive* and *adaptive*. We have already mentioned Labov's *change from below* and *change from above*, and Labov has more recently supplemented these notions with the terms *transmission* and *diffusion*, the former identifying change that emerges from within the system in the ordinary course of the passage of language from generation to generation, and the latter identifying change that spreads from speaker to speaker within speech communities (Labov 2007). Thus, "transmission" essentially covers the conceptual territory of Andersen's evolutive change, and "diffusion" covers adaptive change.

Another set of terms that are somewhat parallel to Andersen's terminology are *endogenous* and *exogenous*, long used in the social sciences, but increasingly common in recent linguistic literature to refer respectively to developments originating from within a system and those originating from outside the system. See, for example, Galloway & Rose's (2015: 30) description: "In discussions about the phases, or processes, through which change occurs, a distinction is usually made between **internally driven changes** from the language system (**endogenous**) and **externally driven changes** caused by the speakers (**exogenous**)" [emphasis in original].

These terms are not, of course, completely synonymous, representing as they do different nuances and areas of focus in the study of language change. It is natural in the development of a field for terminological variants to develop as basic concepts and perspectives are articulated and defined, and some earlier formulations may be casualties of that process.

## 5. More recent attention for ADC and the evolutive/adaptive distinction

Given these factors, along with the age of the paper, it perhaps would not have been surprising if these terms had disappeared even more from common use in the last fifteen years or so. But we see something different happening, with what could perhaps be seen as a resurgence of interest within particular subfields and by particular scholars, though only time will tell how much these terms will continue to be used in the years to come. We note here a few key works that reference this dichotomy, though we start with one that actually only appears to be relevant.

### 5.1 “Adaptive sound change” in Dahl (2004)

There is an important work that deserves some consideration here in that it constitutes a “near-miss”; that is, due to the terminology used, it seems as though it might draw on Andersen’s dichotomy, but in fact it does not even cite Andersen. The work in question is Dahl (2004), wherein (pp. 157–159) the author draws a distinction between two major types of sound change, Neogrammarian sound change and what he calls “adaptive sound change”. The former is what is seen in “classical Neogrammarian ‘sound laws’, ones that hit the lexical items in a language indiscriminately”, while the latter refers to “a sound change that hits certain expressions as a response to their acquiring new niches or being used more often” (p. 157). Dahl notes some complications with this conceptualization. For instance, “sound change is sometimes implemented through ‘lexical diffusion’” (p. 158; see Wang 1969) and so may “apply differentially to particular lexical items”; this means that it is “at least conceivable that a Neogrammarian sound change could start out as an adaptive sound change” (p. 158). For Dahl, the causal mechanisms involved in adaptive sound change are “redundancy and prominence management” (p. 158) so that it is “a reaction to the changed role of an expression, ... a way of restoring the balance between the communicative role of an expression and its form” (p. 158).

Thus, while the use of the term “adaptive” itself is certainly suggestive as far as ADC is concerned, what this term means for Dahl is that “[b]asically, adaptive phonetic reduction would be a response to a decrease in informational or rhetorical value of the expression” (p. 159). This is clearly quite different in its thrust from Andersen’s adaptive change, so we can conclude that despite the similarity in the specific terms, there is no connection between Dahl’s notions and Andersen’s.

### 5.2 A recent resurgence?

While, as previously noted, the terms *evolutive* and *adaptive* do not hold a prominent place in today’s academic discussions of the causes and types of linguistic change, they have not completely disappeared and have recently received some attention from those working in certain specific areas.

First, Hinskens, Auer & Kerswill (2005), in a study of dialect convergence and divergence, devote several paragraphs to a general overview of types of change, focusing particularly on the internal versus external distinction, and drawing on the work of Andersen (among others) in the process, as in the following:

... either *internal* (language structure, UG) or *external* (contact and borrowing) factors cause the actuation of a language change ... To the external, contact-related factors we would add *extra-linguistic* factors ..., that is, factors which are not

directly related to the interaction of linguistic systems through contact. Under “extra-linguistic” we would also include social-psychological factors, especially identities and attitudes. ... Andersen (1988, 1989) distinguishes adaptive, evolutive, and spontaneous innovations [cites definitions from ADC] ... Adaptive innovations are externally motivated and involve finality, whereas both evolutive and spontaneous innovations are internally motivated and do not involve finality. ... Andersen specifies a number of subtypes[, e.g.:] [c]ontact-induced innovation is a special type of adaptive innovation, usually affecting differences between language systems, and abductive innovation is a special type of evolutive innovation, which typically affects differences within a single system. (Hinskens et al. 2005: 41–42)

ADC is also cited several times in *The handbook of historical sociolinguistics* (Hernández-Campoy & Conde-Silvestre 2012). Most of the references are to abduction and deduction, but Roberge’s chapter on “The teleology of change” cites Andersen (1973, 2006), summarizing ADC as follows:

The potential for multiple structural analysis is a cause of change by virtue of the fact that it allows for abductive innovations (reinterpretations of structure) and deductive innovations (manifestations or applications of the new interpretations). Such innovations can lead to “evolutive changes,” which are entirely explainable in terms of the linguistic system. Their subsequent diffusion to other groups, however, falls under the rubric of “adaptive change,” for which we must seek explanations outside of the linguistic system. (Roberge 2012: 373)

Similarly, while not citing ADC itself, Weber’s (2014) book *Principles in the emergence and evolution of linguistic features in World Englishes* cites the terms *adaptive* and *evolutive* and summarizes the basic approach from Andersen (1988) within the context of a discussion of various theoretical, and specifically sociolinguistic, approaches.

In *The Oxford handbook of historical phonology* (Honeybone & Salmons 2015), ADC is also cited in several papers in various contexts (e.g. covert reanalysis, the role of language acquisition in language change), and D’Arcy’s paper on “Variation, transmission, incrementation” specifically focuses on ADC, connecting the terminology with other terms that were noted above:

We can distinguish between two types of change. *Change from above* entails the importation of linguistic features from other systems ... In the model proposed by Andersen (1973), this kind of change is considered *adaptive*. The normal mode however is *change from below*, which entails system internal innovation (equivalent to Andersen’s *evolutive change*). (D’Arcy 2015: 587)

These several examples indicate a particular place for ADC and its terminology within the areas of historical dialectology (on which see also Kerswill & Torgersen 2005), historical phonology, and, in particular, socio-historical linguistics. As noted

earlier, this subfield has been grappling with competing sets of terminology, and various recent works include a focus on the similarities and differences among these terms, providing valuable service to the field. We present some key examples here, in the hopes that presenting these perspectives will help others as they seek to understand these terms and their uses.

D'Arcy's (2015) article cited above is just one example of work that she and coauthor Sali Tagliamonte have done in this area. Two additional examples can be found in their 2009 *Language* article (Tagliamonte & D'Arcy 2009) and their 2015 article in *Language Variation and Change* (D'Arcy & Tagliamonte 2015). In the earlier 2009 study, while discussing their findings, they ask:

why do phonological changes generally have a peak in apparent time for women only (Labov 2001) while discourse-pragmatic and morphosyntactic (-semantic) changes consistently have peaks for both females and males? ... [A] possibility is to focus in on the nature of language change itself, not simply with respect to its speed or point of change, but also with respect to its origin (inside or outside the community) and its nature and type (evolutionary or adaptive (e.g. Andersen 1973), transmitted or diffused (Labov 2007)). (Tagliamonte & D'Arcy 2009: 98)

The more recent 2015 study fleshes out these distinctions in much more detail. D'Arcy & Tagliamonte first note that "in historical linguistics, language change is viewed as a contrast between *endogenous* and *exogenous* – that is, internally versus externally triggered. In variationist sociolinguistics, language change is framed in terms of *above* and *below*" (2015: 257), before describing these in more detail as follows:

Change from below (or *from within*; Labov, 2006: 203) is the "normal type of internal change," originating within the linguistic system ... Because actuation is internal, change from below is *evolutionary*. This means that it is explicable with reference to the community-based linguistic system (e.g., Andersen, 1973), emerging from the inherited structure of grammatical systems (i.e., via adult to child transmission; cf. Labov, 2007). ... The key attribute of change from below is the point of actuation (system internal) and the trajectory of development (evolutionary). Although the etiology of endogenous change is discernable with reference to language-internal factors alone, the diffusion of change in social context must be motivated by speaker-based factors .... Change originates in speakers, not languages ..., necessitating a distinction between the conditions that give rise to a change and those that have to do with its diffusion ... . As an innovation moves from speaker to speaker or from group to group, its diffusion is exogenous, propelled by influences outside the community grammar, what Andersen (1973) referred to as *adaptive* change. Change from above (or *from without*; Labov, 2006: 203) refers to the importation of elements from other systems (Labov, 2010: §51.2). It is sporadic, conscious, and "usually recognize[d] ... by the fact that it involves high-prestige features" (Labov, 2010: §9.1). (D'Arcy & Tagliamonte 2015: 257–258)



We find this recent emphasis on making explicit the similarities and differences among various terms to be helpful and a positive trend. It is important for the field to understand where it has come from as it continues to develop, and balancing the need to minimize terminological competition and confusion with the desire to maximize the ability to convey importance nuances by using different terminology is a vital (though challenging) part of that.

## 6. Conclusion

Even though we have presented the terminology and notions here in dichotomous terms, it is fair to ask – and we do so by way of concluding – whether it is necessary to conceive of the relevant territory they cover in terms of a dichotomy. That is, there are several ways in which dichotomizing does a disservice to the complexities of actual changes.<sup>3</sup>

As discussed above (§2.2), for instance, throughout much of the development of the study of language change in the 19th and especially the 20th centuries, the basic division was not into internally motivated versus externally motivated changes, but rather into the “triad” of sound change, analogy, and borrowing, and it was only in Hockett (1958) that the dichotomous division of change into internal and external begins to be found. Since then, this dichotomy has become more evident in the relevant literature, aided no doubt by the prominent mention in the oft-cited and highly influential work by Thomason & Kaufman (1988), and seems to be the current standard – and it is often a very helpful distinction.

Nonetheless, it is a matter of debate whether dichotomizing is the right way to proceed. For instance, it is important to note that there are documented cases in which language contact, i.e. an external force, leads to tendencies already present in a language, i.e. an internal force, being enhanced and brought out more in the language. Friedman (2006) has argued that such is the case with the spread of evidentiality into Balkan Slavic under Turkish influence; contact with Turkish, he claims, accentuated existing characteristics emerging in the languages at the time. Thus in such an instance of enhancement, it is not so much a matter of a dichotomy of causal factors as instead an additive effect.

More generally, there are cases of multiple causation, where various internal and external developments conspire, as it were, to bring about a given change. For example, Sapir (1921) discusses the loss of case-marking on the relative/interrogative pronoun in English, with *who* being generalized at the expense of *whom*, in

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3. See also Dorian (1993) for a discussion of the problematic nature of this dichotomy.

those terms, and Joseph (1982, 1983: Chapter 7) attributes the loss of the infinitive in the languages of the Balkan sprachbund to a multiplicity of causative factors converging to bring about change.

Even more generally, the lesson to be drawn from our consideration of ADC and the notions *evolutive change* and *adaptive change* that ADC has contributed to our understanding of language change is that a focus on terminology per se should not be our goal. Rather, just as Andersen gave a detailed account of developments underlying the changes with palatalized labials in Czech, our emphasis should be on the concepts behind the terms and the particular phenomena they are being employed to describe.

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# Induction and tradition

“As time goes by ...” – Play it again!

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This contribution takes Henning Andersen’s model of linguistic change as a logical starting point. In addition to his use of Abduction and Deduction, I suggest that *Induction* plays an important role as well, since it represents *Conventionalization*. All three types of reasoning are subsumed under *Tradition*, which itself represents the final of three aspects simultaneously performed in each and every instance of *Language Gaming*, the first two being the communicative *tandem* of *Communion* and *Practice*. The logical inference types profiled on this *meta-communicative* level of Tradition are operative on all three levels of Language Gaming. The *Competence* targeted in Tradition occurs in three modes of being, according to the inference type: *hypothetical* (*Result*, in Abduction), *procedural* (*Case*, in Deduction), and *declarative* (*Law*, in Induction). It is the procedural-effectual variant that is applied in the communicative *tandem*. An *idio-poietic* process operationalizes the declarative *Convention* so that it may be applied in *individual* use. A triune *Universal Competence* is presupposed by – and functions as major premise in – communicative *tandem* and meta-communicative Tradition. It is procedural (*genotoken*) and likewise occurs in the three aspects, viz. *panchronic* (Communion), *synchronic* (Practice), and *diachronic* (Tradition).

**Keywords:** Abduction, Deduction, Induction, Communion, Practice, Tradition, Conventionalization, Universals, Evolution, Change, Semiotics, Cybersemiotics

## 1. Introduction

In this contribution to Henning Andersen’s *Festschrift*, I place his abductive-deductive theory of linguistic ‘change’ in its wider Peircean context of the ladder of the ‘sciences’, focusing on the interpretation of languaging (language as a process) in this hierarchy. I hypothesize that the stages of the evolution of human language parallel crucial distinctions in philosophy and science – in Peircean terms, that languaging

is really the natural *utens* foundation of his scientific *docens* model (cf. Pietarinen 2005). Therefore, I have reproduced the steps of Peirce's scientific model as natural phases of a model named *Total Human Evolutionary Cognition and Communication* (THECC) (Thomsen & Brier 2014; Thomsen 2019 *fc.*). THECC is compared to Peirce's model in Section 3.

The ultimate step of Peirce's scientific model is *Methodeutic* (Peirce's term for methodology) and this corresponds in my reproduction to the level of *Tradition*<sup>1</sup> in Language Gaming. *Tradition* is focused on the Code, or linguistic *Convention*. The Convention is the *finious* endpoint (the would-be *telos*) of a never-ending process of *Conventionalization*, and this again is the linguistic counterpart of logical *Induction*.

Thus, Conventions are formed by Induction and are always preliminary. They are societal *declarative Constitutions* (*phenotypes*), and these in their turn must be 'intro-verted' into individual operational, or *procedural Competences* (*phenotokens*), to be operative in Language Gaming, on the levels of Communion and Practice.

The following section offers an overview of the position of the triad of Communion – Practice – Tradition in the context of THECC.

## 2. Language acquisition and change in the context of *Total Human Evolutionary Communication*

*Language Gaming* – linguistic behavior in terms of playing *language games* – is a kind of cultural *energeia* (cultural 'transmission') with three *aspects*, each profiling a crucial factor of communication, viz. the Contact (*Communion*), the Message (*Practice*), and the Code (*Tradition*), biologically embedded in, and integral part of, *Total Human Evolutionary Cognition and Communication* (THECC).<sup>2</sup> Language Gaming is performed by biocultural organisms – *natural language users* – in a biocultural *environment*. Natural language users are sensory-motorically related to this environment and appropriate it as their relevant and significant *Real World* (*Umwelt*, Uexküll 1909). Thus, natural language users are equipped with biological 'confrontational' capacities of *perception-action*, *attention*, and *memory/recall*, but,

1. Understood as a cover term also incl. *innovation*, i.e. all that has to do with language acquisition and change. The theory is conceived within process philosophy, therefore the ugly terms 'languageing' and 'language gaming'. The superordinate category for languageing and language gaming is '(inter)action' (Nikolić 2015). Inherent in 'process' is evolution and change, the limiting case being *status quo*. The term 'transmission' merely signals negotiation by the natural "languageusers". Evidently, *Competence* is what is metalinguistically at stake in 'language acquisition and change', however just as a phase of *process*, viz. its target: blueprint, pattern.

2. THECC is architectonic-hierarchical and synechistic-integrative, with Language Gaming as its finious endpoint.

in line with the ‘creational’ character of *energeia*, also with initial background capacities of *imagination, creativity, emotion, spontaneity, conativity, and rationality*.<sup>3</sup>

Implied by the term *Evolutionary Cognition and Communication* is the fact that communication is a psycho-social phenomenon. Communication, or languaging, is performed by *minded* beings, organisms with consciousness and subjectivity. And, furthermore, communication being collective, their minds, in addition to being private, are also *social minds* evincing *intersubjectivity*. Their mentality accordingly shows both individual, *I-intentionality* (their directedness towards their Real World in perception and action) and collective, *We-intentionality*, directedness towards their *Co-world* and *Social World* (Searle 1990) in message reception and production. They are then cognitive-communicating *Subjects* related to *Objects* in their *Real World* (sensory-motor Cognition), *Co-Subjects* in their *Co-world*, and *Reference Objects* in their *Social World* (triadic Communication).<sup>4</sup>

## 2.1 Cognitive Consciousness and Communicative Consciousness

There is a diametrical opposition between Cognitive Consciousness and Communicative Consciousness: The former is *presentational*, the latter *re-presentational*, and this is manifested in the kinds of semiosis going on. In perception, the perceptual confrontation with the environment, the *Real World* presents itself internally as an immediate, direct *presentational appearance*. What is present to the mind, the perceived Real World, is understood and recognized according to an ontological *Counterpart World* in the minds (Memory) of the individual organisms (*Gegenwelt*, von Uexküll 1909). This tacit knowledge cannot be transmitted as such: The phenomenological appearances are merely *internal* individual-subjective *impressions* and the recalled Objects are private, inert, and incommunicable (Harris 1988). What they need are *external* public, inter-subjective semiotic *expressions* to translate the private impressions and to stand for, i.e. *re-present*, the *Real-World* Objects (now *Reference Objects*) as well as the recalled inner mental Objects.

Thus, what is distinctive about languaging is that it develops *representational* expressions. An *external* expression is a public, intersubjective physical

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3. With ‘rationality’ I mean the *logos* inherent in ‘process’ – the inferential capacity, thus the argumental triad of Abduction, Deduction, and Induction, the last one of which is the terminal point in Tradition. Notice that Abduction is operative in perception, Deduction in action, and Induction in habit formation, habits connecting the two of them (cf. Section 4.3.1).

4. Languaging, incl. Language Gaming is *exo-semiosis* (Brier 2008). The relation of the cognitive Subject to the Real-World Object is *Eco-semiosis*, and the relation of the languaging Subject to his Reference Object is, *Eco-logical* Semiosis (Thomsen 2019c.). The triadic relation of the communicative Subject to Cosubject and Reference Object is *Dialogical Semiosis*.



*Communicative Object*, a perceived and articulated physical display, produced by the Utterer and perceived by the Interpreter and, in feedback, by the Utterer himself. It belongs with the *Social World*.

The perceived Real Object is, in communication, represented by an external *Reference Object*. Whereas there is *no immediate Object* in *perceptual Consciousness* (only the internal categorizing *Counter World Object in Memory*), in Communication there is an immediate, *Semiotic Object* in communicative Consciousness, correlated with the external Reference Object, as well as the internal, stored *Counter-World Object*. Since there is room for internal immediate Objects in Communication, it is possible to trade in fictional, created Objects (e.g. narrative events), without there being any external, Real-World correlates. This is not so in perception where the Real-World Object determines the ‘intentional’ impression. The *Communicative Object* (expression) realizes an internal correspondent in Communicative Consciousness – a so-called *Representamen*, a sensory-motor (auditory-articulatory) representation. In representation, the direction of semiotic causation is from Mind to World: The *Communicative Object* (expression) is the iconic-indexical effect of the internal Representamen (cause). In Perception, the Real-World Object semiotically determines the perceptual iconic-indexical impression in Mind. Since Thinking is an internal-mental kind of *reflexive Communication*, there is no outside communicative correlate of its Representamen. This is evidence that the expression of Representamina evinces *intentional* rather than mechanical causation. Similarly, the Reference Object in the *Social World* is created, or *constructed*, with respect to the immediate Semiotic Object in Consciousness, with the semiotic causation going from Mind to World.

## 2.2 Perception vs. Communication

An important point of difference between Perception and Communication is that whereas perception is *hermeneutic* and therefore basically internal and receptive (abductive, therefore *impressions*), communication is additionally *hypocritic*, i.e. (inter-)actional and productive (deductive, thus *expressions*).

Both in Cognition (Perception-Action) and in Communication (Reception-Production), the Object is *interpreted*. Interpretation is solely a mental phenomenon, and therefore only *internal Interpretants* ‘exist’. On the level of perception, interpretation is in terms of *Sense* and on the level of languaging, in terms of *Meaning*. And again, they come in two phasal variants: as actually occurring in Consciousness and as stored in Memory (virtual). In perception, the *Sense* interprets the *Sensation* (impression) but there is no immediate Object in Consciousness, and thus the mental semiotic relation is dyadic. In Communication, on the other hand, there is

indeed an internal, *mental immediate Semiotic Object* which is stand-in (*proxy*) for a possible, Real-World-correlated *Reference Object*, and thus this vicarious object participates in triadic, *categorematic* semiosis with respect to the Representamen and the *Meaning*. We shall say that the internal Representamen *symbolizes* the immediate *Semiotic Object* in Consciousness, paralleling the fact that the external *Communicative Object* (expression) symbolizes the constructed public *Reference Object* in the Social World. Linguaging, and especially language-gaming organisms are thus *symbolic*, in the sense of participating in semiotic-symbolic habits, or evolved *symbolic Conventions*. The *Communicative Objects* are intersubjective, *public Symbols*, the internal Representamina subjective, *private Symbols* (*qua mental*). Since the public Symbols occur in the *Social World*, their internal counterparts, might be thought to inherit a *collective* character. They are strictly personal (private), though, since they are either articulatory Representamina in Production, or auditory Representamina in Reception, bound up with the speaker-listener's physiology on the biological, sensory-motor Background level. As routines, these Representamina are stored in Memory. Their social manifestations as Communicative Objects – the expressions – are *practo-poietic* creations, *erga*.

Whereas the *Perceptual Objects* belong to an individual Subject's *Real World*, his *Reference Objects* – like his *Communicative Objects* – belong to the *Social World* that he *contracts* with his Cosubjects. What occur as actual subjective Representamina (internalized *Communicative Objects*), *Semiotic Objects* (internalized *Reference Objects*), and their Interpretants are, as tokens, recalled from the *Communicative Competence* (Memory/Idiolect) where they are represented by *generalized* counterparts.

The communicating minds of Subject and Co-Subject are *private* – Interpretants are basically subjective so that there is on one hand an *Utterer's Intentional Interpretant* (speaker's utterance meaning), on the other, the *Interpreter's Effectual Interpretant* (hearer's comprehension). On the face of it, these internal Interpretants lack Social-World counterparts: whereas the Representamina and *Semiotic Objects* have social, intersubjective manifestations (as *Communicative Objects* and *Reference Objects*, respectively), there are no 'public meanings'. The semiotic solution is that the Social World is or contains a *public Mind*. According to Peirce ([1906]), the private minds of the Utterer and Interpreter are welded into a shared, collective, second order (abstract, virtual) *public Communicative Mind*, and this so-called *Commind* determines public, shared *Communicative Interpretants* (*Cominterpretants*).<sup>5</sup>

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5. In line with Weigand's (1990) game theory, a Social World is a 'market place' for the negotiation of meaning 'contracts' and of triadic semiosis at large – a 'forum' where innovations are proposed and from where they are accepted, adopted, and acquired.

Thus, the Social World is a triadic social exo-semiosis contracted by Communicative Objects, Reference Objects, and Cominterpretants. However, there is no guarantee that these semiotic relata are intersubjectively valid – or constitute a *deontology* – since they merely manifest private subjective, *idiolectal* representations. It is here *contract* formation comes into the picture. The private Minds of the interlocutors need a *normativity* – they need to be expanded by a collective-dialectal sphere so that they are more than biological organisms and cognitive individuals; they are additionally societal *persons*. This means that besides having a subjective Idiolect, they also have an intersubjectively, publicly valid Dialect. Their Communicative Consciousness is accordingly di-stratal, with a subjective-idiolectal and an intersubjective-dialectal stratum. The Dialect is a social *instrument* or *norm* (“medium”, Code) of communication, i.e. a Lexico-Grammatical Competence, with the semiotic dimensions of *Legisign*, *General Semiotic Object*, and *Logical Interpretant*, corresponding to the norms for the public Communicative Object, Reference Object, and Cominterpretant. Just as the private Mind occurs as actual Consciousness and (*procedural*) Memory, the Commind is a virtual sociosemiotic process plus its inherent sociolinguistic *declarative* Institution (*community dialect*). The import from the latter into the former’s (procedural) Dialect is what I term *idio-poiesis* (Thomsen 2019fc).

Communication is then private Minds trying to make themselves intersubjectively understood. It is a process of *translation*, where in Production the Utterer produces or recalls an Intentional Interpretant (in the context of a Referential Object) that has to be translated into an intersubjectively valid Interpretant recalled from the Dialect’s Logical Interpretant (or proposed in innovatory language use). This is coupled with a recalled (or innovated) dialectal Representamen, via the pairing of a recalled (or created) idiolectal Semiotic Object (in the context of the Reference Object) with a dialectal immediate Object (recalling a dialectal General Object). The intersubjectively valid Representamen (actualizing a Legisign) triggers the subjective Articulatory Representamen which is manifested as the public *Communicative Object*. This expression is then, in Reception, perceived by the Interpreter as a subjective Auditory Representamen correlating its Legisign counterparts, which is coupled with a Logical Interpretant (via a Semiotic Object-correlated General Semiotic Object) triggering an Effectual Interpretant (in the context of a possibly Real World-correlated immediate Semiotic Object), exported into the Social World, and negotiated with the Utterer as an intersubjective, public Cominterpretant.

Finally, we should say that the Dialect (Lexico-Grammatical Code) is *nonperspectival* (involving a *collective* perspective), whereas the Idiolect is *perspectival* (including auditory and articulatory routines; Intentional and Effectual Interpretants; and perspectival Semiotic Objects).

The conceptual distinctions pertaining to Languageing Semiosis are shown in Table 1.

**Table 1.** Overview of semiotic distinctions in Languageing Semiosis

Social World (public)	Dialectal Consc.	U(tterer's) perspective	I(nterpreter's)-perspective	Dialectal Memory
Reference Object	<b>Semiotic Object</b>	U-perspectival Semiotic Object	I-perspectival Semiotic Object	General Semiotic Object
Communicative Object	<b>Representamen</b>	Articulatory Representamen	Auditory Representamen	Legisign
Cominterpretant	<b>Interpretant</b>	Intentional Interpretant	Effectual Interpretant	Logical Interpretant

Over and above the *representational* dimension (Representamen – Object – Interpretant), Languageing has a *dialogical-reciprocal mediational* dimension, such that the former is included in the latter. In this way, Languageing is both triadic and *dialogical*. The *intentional* Real Object of Presentation functions as pivotal, substantial *Context* of Communication (= representation-cum-mediation). As mentioned above, the Utterer's *Intentional* and the Interpreter's *Effectual* Interpretants are induced into a shared *public Cominterpretant* of the dyadic *dialogue*, and their communicative minds are likewise welded (unified) into a *dialogical Commind*. Utterer's mind and Interpretant as well as Interpreter's mind and Interpretant are thus *tokens inducing* abstract or generalized societal counterparts as their *types*.

The substrate of Perception and thereby of Communication is the *Objective Environment* (*Umgebung*, Uexküll 1909). Correspondingly, the environment is tri-furcated into the *Real World* (with Perceptual Objects), the *Social World* (with Reference Objects), and the *Private World* (with Semiotic Objects). In relation to the *Perceptual* Objects, the Subject is a *Perceiver*; in relation to the *Reference* Objects, the Subject and Co-Subject are *Indicators* or *Constructors* (if there is no Real-World correlate), and they are *Conceivers* concerning the *Semiotic* Objects. With respect to the *Communicative* Objects (expressions) and the *Cominterpretants*, the Subject and Co-Subject are *Utters* and *Interpreters*, respectively – both *dramatis personae* projecting into the *Social World* as *Actors*, since their private Minds are welded into a *public Commind*. The private Minds are internal *Actants*: *Conceivers*, *Addressers*, and *Addressees*, respectively. Just as the Utterer and Interpreter are indexical Indicators with respect to the *Reference Object* (via Perception of its twin, Real Object), they are also *physically* causal with respect to the expressional *Communicative Object* (*qua* its physical correlate, the acoustic signal in the communicative context).

Additionally, in the original ‘naming situation’, the *Communicative Object* is contiguous with the *Reference Object* via the *perceived Real-World correlate*.<sup>6</sup>

**Table 2.** Linguaging Semiosis with its *Mediators* – public *actors* vs. private *actants*

Social World (public)	Public Actor roles	Idiolectal Consciousness	Private Actant roles	Dialectal Memory
<i>Reference Object</i>	Indicator (Constructor)	Dynamical <i>Semiotic Object</i>	<i>Conceiver</i>	General Semiotic Object
<i>Communicative Object</i>	Utterer	Dynamical Representamen	<i>Addresser</i>	Legisign
<i>Communicative Interpretant</i>	Interpreter	Dynamical Interpretant	<i>Addressee</i>	Logical Interpretant

There are three evolutionary stages of Linguaging Semiosis (Brier 2008), according to the stage of Mediation (the degrees of psycho-semiotic involvement and socio-semiotic freedom, or self-control, of the *Mediators*). The first, basic stage is emotional, reflexive *Mimetic Signaling*, the second, motivational, ethological *Sign Playing*, and the third, deliberate, liable, convention-based *Language Gaming* constituting *Communities of Practice* (Wenger-Trayner 2015). Language Gaming subsumes the two previous levels and is itself a system of three co-occurring strata, viz. Contact/Medium-based *Communion*, Message-oriented *Practice*, and Code-oriented *Tradition*. Thus, the *Dialogical Semiosis* occurring between the communicating Subject and Cosubject with respect to an Object/Context has three aspects to it: Basically, the communicators participate in psycho-physical and social *encounters* (Contact – *Communion*); pivotally, they undertake socio-cultural symbolic coordination and meaning construction (Message – *Practice*); and, finally, they participate in socio-cultural learning/instruction (Code – *Tradition*). Language Gaming is accordingly *biocultural symbolization* (with a *Communicative Object*) in a *Channel/Medium* on the basis of a *Contact* between the Utterer and his Interpreter, in the form of a *Message* (*Communicative Interpretant*) about a *Context* (*Reference Object*), a *Symptom* of the Addresser, a *Signal* to the Addressee; and negotiating the linguistic *Convention* which *sanctions* the symbolization.<sup>7</sup> In *Tradition*, the *Convention* is first *hypothesized* (*Abduction*); then this hypothetical

6. In the case of Language Gaming, some *Communicative Objects* *token-reflexively* constitute their own *Reference Objects*, viz. *performative* declarative Utterances (“I hereby ...”) (on performatives and declarative illocutions, see Searle 1989).

7. Contact, Message, and Code, as well as Context plus Addresser (Sender) and Addressee (Receiver), stem from Jakobson (1960). The term *Communion* originates in Malinowski (1923) (cf. Senft 2009).

Convention is put to *practical testing* by targeting it in Practice (*Deduction*); finally, it is *confirmed* – or disconfirmed, whereby the operation recycles (*Induction*).

The Language Gaming organisms are *first-order* bio-cybernetic ‘systems’, engaging with each other and their surroundings in loops of circularity and feedback (von Uexküll 1909; Brier 2001, 2008). Being *communicational*, Language Gaming involves the negotiation and *sharing* of social Contact (Communion), Message (Practice), and Code (Tradition). Together, these constitute *Dialogical Semiosis*, or *Discourse*. Practice is the *pivotal* ‘object level’ (in the *tandem* of Communion and Practice) where reference to the topical Context is equally pivotal. Language Gaming is *second-order* cybernetic, as well, since it involves observation and learning of itself in socio-cultural Tradition (*paideia-poiesis*, Thomsen 2019fc). Tradition concerns the *conventionalization* of the Code targeted in Language Gaming. Insofar as the ‘methodeutics’ of metalingual Tradition involves the reentry from Tradition to Communion and Practice, the linguistic Convention is created *in and by* communicating (Coseriu 1957; Thomsen 2006, 2010, 2017). A natural language user-acquirer is thus a ‘participant observer’ – observation and learning are integrated in participation (legitimate learner participation: *Community of Practice*). Linguaging Semiosis, incl. *Language Gaming*, is a process., Therefore, it is a category mistake to talk about language *change* as transformation of a *thing* (Coseriu 1957, 1983; cf. Andersen 2006) – with an insider’s view, Language Gaming is Convention *targeting* and *conventionalization* (Thomsen 2006, 2017, 2019fc.). However, from a

**Table 3.** Overview of the architectonic of *THECC*. Tradition and herein Induction *alias* Conventionalization are the finious targets

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### The ladder of *Total Human Evolutionary Cognition and Communication* (THECC)

- I. Background: Imagination/Spontaneity/Creativity; Sensory-motor Perception/Action; Memory/Recall
  - II. Reality [*Context*: Real/Perceptual Object; Acoustic Signal]
  - III. *Total Human Evolutionary Cognition* [*Presentation*]
  - III.1 Consciousness: Appearance [Sensation – [Object directedness] – Sense]
  - III.2 Memory: Ontology/Modeling [Presentamen – Generalized Object – Interpretant]
  - III.3 *Linguaging Semiosis* [*Representation & Mediation*: Dialogical Subject-Cosubject reciprocity]
  - III.3.i Mimetic Signaling [reflexive behavioral coordination]
  - III.3.ii Sign Playing [ethology; bodily communication]
  - III.3.iii *Language Gaming* [constitutive *Linguistic Institution*; *deontology*; community of practice]
  - III.3.iii.1 Communion [*Medium-Contact*]
  - III.3.iii.2 Practice [*Message*]
  - III.3.iii.3 *Tradition* [*Code* – Meta-communication]
  - III.3.iii.3.a Explanation of Usage [*Abduction*: Hypothesis of Convention]
  - III.3.iii.3.b Prediction and practical testing [*Deduction*: Testing of hypothesized Convention]
  - III.3.iii.3.c **Conventionalization** [*Induction*: Validation/Confirmation of hypothesized Convention]
-

transpersonal and trans-generational viewpoint, an outside observer may indeed talk about ‘language change’. Furthermore, language academies may function as explicit *legislators*, so that Language Gaming may be a *third-order* phenomenon, too. Explicit linguistic knowledge may then enter into the other, lower levels, as when conscious language planning is enacted in practice, and when encyclopedic knowledge of the world is absorbed into the natural language lexicon.

### 2.3 The same old story: The *trivium* of Communion, Practice, and Tradition

Having placed Language Gaming in the context of THECC, I shall delve into the three functions, or *aspects*, that are simultaneously performed in each and every instance of Language Gaming, namely *Communion*, *Practice*, and *Tradition*:

*Communion* is the *panchronic* foundation of Language Gaming. It has its focus on the Contact between the Communicators – on the *Medium* (physical Channel and psycho-social Connection) in and through which their communication occurs, and, derivatively, on the *Context* that they collectively relate and refer to: *Shared, we-intentionality* is a prerequisite (Searle 1990; Tomasello et al. 2005). The communicators have individual functional identities as Mediators, or *Interlocutors*, and they occur in the *reciprocal* statuses of Subject and Co-subject. The Context, however, performs the *fixed* status of *Reference Object*. On this level, turn-taking, politeness, courtesy, and *facework* originates (cf. the notions of *hypocrisy*, and actor).

*Practice* is the central, *synchronic* level, where the Message is focal: It is centered around the substantial mediational *point* (behavioral force) plus representational *topic, judgment, and argument*. It is correlated with the Real World (perceptual Object) and the Social World (Interlocutors plus Reference Object) via *I* and *we* intentionality.

The final, *diachronic* level is *Tradition* with its focus on the negotiation of the communicators’ norms in force, their (Communicative plus Linguistic) Competence. The level of Tradition is *meta-lingual*, comprising the two lower-level aspects as its scope. The universal, species-specific foundation of this composite Competence comprises three kinds and levels of *universals*, viz. panchronic (*phatic*), synchronic (*poietic*), and diachronic (*metalingual*). The Communicative Competence with its universal foundation is operative in each aspect of communication, since it functions as their major premise, furnishing them with maxims, principles, parameters, and constraints. Communication is action and interaction, and, according to its three aspects, there are three kinds of communicative acts simultaneously performed in Language Gaming, viz. *object-level* acts of Communion and Practice, and *meta-communicative* acts of Tradition (cf. Andersen 1989; Thomsen 2006, 2019c.).

### 3. The architectonic of languaging: *Total Human Evolutionary Communication*

The above Andersen-inspired model uses some concepts from Peircean logic/se-miotics, esp. the kinds of syllogism presumed to lie behind linguistic change, viz. Abduction, Deduction, and Induction (Pietarinen & Belluci 2014), the first two of which are in focus in Andersen (1973; cf. 2017). The last one, *Induction*, is central to my contribution since it concerns *codification*. Now, syllogistics – inherent in the mathematical foundation of Science and in the cognitive-communicative Background – is foregrounded in *Methodetics*, the branch of Science that concerns doing research: hypothesis formation, testing, as well as confirmation and adoption of theories (Atkin 2004; Belluci & Pietarinen n.d.; Chiara 2016; Mayo 2005; Psillos 2011; Staat 1993; Zeman 1986). A one-to-one mapping between Peirce's scientific architectonic and the architectonic of *Total Human Evolutionary Cognition and Communication* (THECC) is assumed:

**Table 4.** Peirce's *architectonic* of the sciences as paralleled by the architectonic of *THECC*

The ladder of the <i>Sciences</i> (Peirce)		The ladder of <i>Total Human Evolutionary Cognition &amp; Communication</i>
– Mathematics	(I)	Imagination/Spontaneity/Creativity/ Sensory-motor/Memory
– Specific Sciences	(II)	<i>Reality</i> [extra-mental correlates of Consciousness]
– <i>Scientific Philosophy</i>	(III)	<i>Evolutionary Cognition</i> [ <i>Presentation</i> ]
– Phenomenology	(III.1)	<i>Appearance</i> [Consciousness; intentionality]
– Metaphysics	(III.2)	<i>Ontology</i> /Modelling System [ <i>Memory</i> ]
– <i>Normative Philosophy</i>	(III.3)	<i>Languaging</i> [ <i>Representation + Mediation</i> ]
– Aesthetics	(III.3.i)	Mimetic Signaling [ <i>Emotion</i> ]
– Ethics	(III.3.ii)	Sign Playing [ <i>Motivation</i> ]
– <i>Normative Logic</i>	(III.3.iii)	<i>Language Gaming</i> [ <i>Ratiocination</i> ]
– Logical Grammar	(III.3.iii.1)	Communion [ <i>Contact</i> ]
– Critical Logic	(III.3.iii.2)	Practice [ <i>Message</i> ]
– <i>Methodetics</i>	(III.3.iii.3)	<i>Tradition</i> [ <i>Code</i> ]

#### 3.1 The levels of *Total Human Evolutionary Cognition and Communication* (THECC)

Language Gaming is code-guided, normative, and its compartment corresponds to Peirce's *tri-vial* system of *Normative Logic*. Herein, his Logical Grammar is paralleled



by phatic *Communion*, the basic level of Language Gaming.<sup>8</sup> Next, *Critical Logic* concerns truth and truth conditions, corresponding to the object-level *Practice*. Last, *Methodetics* concerns theory formation, again a direct parallel to Code formation and confirmation in *Tradition*. Normative Logic is a *normative meta-science* of the methods of *deliberately* reasoning correctly; and, correspondingly, the *linguistic* norms constitute a *basic deontology of speaking correctly* – coherently, idiomatically, and appropriately/acceptably (Coseriu 1988). Being a deontology, language involves *symbolicity: normativity and conventionality*.

Parallel to Normative *Philosophy*, on a more basic level, is *Languaging Semiosis*. There are three stages here, downwards: basic emotional *Mimetic Signaling* – corresponding to Aesthetics; motivational-behavioral *Sign Playing* – parallel to Ethics; and rational, self-controlled, conventional *Language Gaming* – the *trivium* Communion-Practice-Tradition that we introduced above. Languaging Semiosis is public *representational* and normative-habitual: *emotional signaling* involving *iconic* mimesis (Zlatev 2014) and emotional contagion (Hatfield et al. 2014); *sign playing* motivational *indexing* (Brier 2008); *language gaming* conventional *symbolization* (Coseriu 1957). The *aesthetic* (mimetic) underpinning corresponds to Darwin's hypothesis of a (mimetic) musical basis of language (cf. gibbon-apes' duetting; Darwin 1871; Fitch 2010; Trevarthen 2002).<sup>9</sup>

### 3.2 The evolution of *Languaging Semiosis* into *Language Gaming*

The evolution of Languaging Semiosis requires the existence of a presentational (-actional) Consciousness (*Appearance*), on the one hand, and a Modeling System (Sebeok & Danesi 2000), on the other. Together they constitute *Human Evolutionary Cognition*, which thus has entry conditions from the organismal-agentive *Background* (i.a. sensory-motor; creativity; imagination; conativity) and the *Real World*:

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8. Communion is the basis of the creation of contact languages, the embryonic level of which is that of *pidgins*. Via *creolization* we reach full-blown practical languages (Practice) that are transmitted in language acquisition (Tradition) (cf. Jackendoff 2011).

9. Again, stepping one level up, to *Scientific Philosophy*, we return back to the very beginning of *THECC* – to the non-normative foundation of Philosophy in *Phenomenology* and *Metaphysics*. These levels correspond to the subjective-private *presentational* input levels of *Appearance* and *Modeling* – the foundation for the *Semiotic Objects* of Languaging representations. Outside the system, we find the overall framing of *Mathematics* (diagrammatic imagination and dialogical and syllogistic semioticity), paralleling the *Background* level of inter alia *Imagination* and *Creativity*. The *Specific Sciences* deal with *extra-mental Reality*, which caters for Real Objects of Perception and Action, and thereby, derivatively, the public *Reference Objects* of Languaging Semiosis.

**Table 5.** Primary triangulation: External *Real World* (II) and internal *Background* capacities (I) yield *Mind and Linguaging* (III.1–3)

[I]	[III.1]	[III.3]	[III.2]	[II]
Mathematics	Phenomenology	<i>Normative Philosophy</i>	Metaphysics	Specific Sciences
Imagination/Creativity etc.	<i>Appearance</i>	<b>Linguaging Semiosis</b>	<i>Modeling Counter World</i>	<i>Real World (Umwelt)</i>

Basically, then, bio-physiological organisms, with Central Nervous Systems and peripheral sensory-motor systems, interact with the Real World, and in this confrontation *presentational-actional* Cognition evolves into communicative triadic *representational-mediational* Linguaging Semiosis. Thus, non-communicative organism-world interaction is the confrontation between a sensory-motor Subject Agent and its *objective* Surroundings, whereby the latter are turned into its *Real World* and this in turn is represented inside the Subject as *Appearance* in Consciousness and as *modeling Counter World* (Memory). In communicative interactions, however, languaging creatures interact with *each other* reciprocally, as Subject and *Co-subject* Actants, with respect to a common *Reference Object*. The Subject and Co-subject become a kind of *Co-world* for each other, such that, in their *Counter World*, they have ‘theories’ of each other as *Actants*, i.e. *Theory of Mind* (cf. Marraffa n.d.). Linguaging is not Presentation, but consists in producing and receiving public *Communicative Objects*. These are nevertheless correlated with *acoustic signals*, on a par with perceptual Objects. Like these, they are reflected as mental Appearances (sensory-motor *Presentations*) in the interactants’ *Cognitive Consciousness* as well as categorizations in their sensory-motor *Memory*.<sup>10</sup> In the *Communicative Consciousness*, the *Communicative Objects* reappear as *Representamina*. The *Reference Objects* that the *Communicative Objects* express in public space (Commind) map onto immediate *Semiotic Objects* in Consciousness (private Mind). Roughly, this gives the following triangulation:

10. That is, the interlocutors are, fundamentally, biological *Agents* – active organisms in the physics of speech (signal *Emitters* and *Receptors*). This is the sensory-motor element of the Biological Background, mentioned above. Thus, THECC implies the concept of a communicator as a biological Agent “animated” as a psychological Actant and “personated” as social Actor.

**Table 6.** Semiotic triangulation: *Signs* and *Objects* yield *Interpretants*, in (*private*) *Mind* and (*public*) *Society (Commind)*

	Firstness [Sign]	Secondness [Object]	Thirdness [Interpretant]
Public <i>Commind</i>	<i>Communicative</i> Object	<i>Reference</i> Object	<i>Communicative</i> <i>Interpretant</i>
Private <i>Mind</i>	Representamen [Form]	<i>Semiotic</i> Object [Sight & Sense]	<b><i>Interpretant</i></b> [Meaning]
Physical space	Acoustic Signal	Perceptual Object	[ <b>Non-applicable</b> ]

Roughly, looking at an external Object you get a Sight of it in Perceptual Consciousness and categorize it (in modeling ontology) – this is *Presentation*. In *Re-presentation*, you name the same Object (now, *Reference* Object) by producing a Sound to represent it. This Sound appears in Communicative Consciousness as *Form (Representamen)*, thus turning the perceptual Sight and its interpreting Sense (perceptual *categorization*) into an associative back-up of an immediate *Semiotic* Object with its representational *Meaning (Interpretant)*.

Languaging being *communication* implies the participation of (at least two) *interacting Minds*, i.e. the Subject and Cosubject Actants. In a productive (*deductive*) perspective, the Addresser is the Subject, and the Addressee is the *Cosubject*. In the complementary, receptive (*abductive*) perspective, the Addressee is the Subject, and the Addresser the *Cosubject*. In this way, Languaging is not only Representation but also *Mediation*, i.e. communication *between* interactants *via* the Representation. Subject and Cosubject (Minds/ Actants) occur as *manifest* Actors (*Persons*) in the public Social World (as extensions of the *Commind*).

**Table 7.** Communicative triangulation of Dialogical Semiosis: *Interpreter, Utterance, Utterer*

Interpreter	Communicative Object	Reference Object	Cominterpreter	Utterer
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This means that Reference Object is coupled to Sound (= *externalized* Name) such that its Representamen (internal Sound) *names* the Semiotic Object (*internalized* Reference Object). The Representamen *implies* the *Interpretant* as the *translational* equivalent of itself – the Interpretant thereby standing in the same relation to the Semiotic Object. Accordingly, the receptive-abductive semiotic function, *Representamen (Semiotic Object) = Interpretant*, has a productive-deductive converse, *Interpretant (Semiotic Object) = Representamen*, both being *versions* of Representation. The first, abductive perspective corresponds to Reception where the Representamen is the Interpreter's auditory-phonetic input and the Interpretant is *effectual* (Addressee's Comprehension). The second,

deductive perspective corresponds to Production where the Interpretant is the Addresser's *intentional* Interpretant (Intention), and the Representamen is his *expressive* articulatory-phonetic plan.<sup>11</sup> Linguaging involves two dimensions, the *representational* (Representamen, Semiotic Object, Interpretant) and the *mediational* (Addresser, Representation, Addressee), the two of them unified as *Dialogical Semiosis*. Therefore, evolution within the Linguaging level concerns the evolution of representational *semioticity* (iconic – indexical – symbolic) and mediational *deontology* (emotional *Mimetic Signaling* – motivational *Sign Playing* – deliberate-committed *Language Gaming*), in effect the evolution of representational and mediational *symbolicity*. The representational dimension concerns the Subject's relation to the (Real and) *Reference Object*, the mediational dimension, his relation to the *Co-Subject*, as well – in terms of behavioral 'force', mediating the three former. Concerning the dimension of Representation, evidently iconicity is found in onomatopoeia (Zlatev 2014). The evolutionary *nomenclatural* explosion is the creation, on the basis of creativity and imagination, of representations lacking corresponding external Real Objects, but formed by analogy, where the *Semiotic Object* is merely mapped onto a virtual creation in the *Social World*.<sup>12</sup> Another development is that of *propositionality*, whereby the Reference Object is not a concrete individual 'thing' but an *eventive* Object (state of affairs), such that the processual aspect of the complex Object comes to be represented as a predicate, whereas the fixed part comes to be represented as term(s). The last development here is that of *coherent* argumental *discursivity* (incl. *narrativity*) (Andersen 1984). Mediation, then, takes the *behavioral force* as an *interactional* "predicate" and the Subject, Cosubject, and Representation as its terms.<sup>13</sup> Declarative Pointing is a basic Linguaging force,

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11. Notice that the receptive perspective is the only one in Perceptual Presentation (though *motoric* action corresponds to production) whereas there are two "reciprocal" perspectives in Linguaging Representation, viz. the receptive and the productive. There are two possibilities here: either they are symmetrical as in Chomskyan ambidirectional (declarative) Competence and structuralist bidirectional systems, or they are asymmetrical (*unidirectional*) as in hermeneutic Relevance Theory and actional ('hypocritic') Speech Act Theory. When it comes to the linguistic sign function, I take the *hypocritic* perspective to be basic (cf. Andersen 1984): Interpretant → Representamen/Object.

12. A crucial fact about human existence is the phenomenon of the 'social construction of (social) reality'. Thus, much of what we often talk about has no Real-World correlates but only exists in our private minds and our abstracted Social Commind. This does not mean that the "denoted" (= constructed) reality does not exist, only that its existence is solely socio-cognitive. Notice that one can always discuss the journey of *Odysseus* and falsify claims about it by consulting the literary work by the alleged "Homer".

13. The Addresser and Addressee Minds are triangulated representationally, as dealt with above, and mediationally into the Illocutionary Force (Interpretant) and its Force Indicating Device

illocutionary Declarations the crest of evolution in Language Gaming. The evolution of Language Gaming additionally involves the evolution of word and sentence meaning, or *locutionarity*, including *syntaxis* (cf. Section 3.4, below). We can now zoom in on Languageing and its component stages/levels (see Figure 1 and Tables 8–9, below):



Languaging (L) is the *Dialogical Semiosis* connecting Subject (S) and Cosubject (CS) mutually on the background of their common perceptual *Real-World* context (O). Languaging (and *Commind*) is coextensive with the *Social World*. It is triangulated into *Reference Object* (possibly correlated with a *Real Object*), *Communicative Object*, and *Cominterpretant*. Languaging occurs in three stages: *Mimetic Signaling*, *Sign Playing*, and *Language Gaming*, with three different relations between S and CS, viz. emotional mimesis; instinctual stimulus-response behavior; and deliberate, committed, liable verbal and non-verbal communication.

**Figure 1.** The triadic constellation of a *languaging* (L) Subject (S) and Cosubject (CS) with respect to their *Real World* (O)

The basic, originary proto-human level in Languaging is then *Mimetic Signaling*. It involves vocal imitation and emotionally-expressive ‘musical’ *prosodic* protolanguage (Darwin 1871; Fitch 2006, 2010; Trevarthen 2002). *Aesthetic*, or *musical*, use of vocalization and vocal learning is basic, primarily in mother-infant communication; derivatively in courtship; bonding; territoriality; competitive displays. Some of the basics of the protolanguage was imaginal-rhematic (onomatopoeia), some tending towards propositional holophrases (Jespersen 1922), with a clear functional, ethological import in *Sign Playing*. The last step is the evolution of *Language Gaming*, including sentential, *articulate* phrasal semantics, syntax, and phonology, and, ultimately, a textual metaphorical-discoursal level. The selective factor seems to have been *kin communication* (Fitch 2007), i.e. the transmission of cultural skills (among which communicative and linguistic competences) from parents (mother; adults) to their offspring (children; younger kin). The basics is thus *cultural learning* (Tradition), involving a Model and a Learner in a *Community of Practice*.<sup>14</sup>

(Representamen) plus its opposite number Actant as the Object (Address), such that in production (hypocrisy) the Address is the Addressee, in reception the Addresser (Author). The external, public correlates (*personæ*) are, respectively, the Interpreter and the Utterer, the extensional dyad of the *Commind*. Force (Indicating Device) is a *syncategorematic* sign, the Interpretant being a *procedural* meaning.

14. In Thomsen (2019fc.) I term this process *paideia-poesis* (*paideia* meaning ‘education’, cf. Adami 2015).

**Table 8.** Secondary triangulation: The evolution of *Language Gaming* from *Mimetic Signaling* via *Sign Playing*

[III.3]	[III.3.i]	[III.3.ii]	[III.3.iii]
<i>Normative Philosophy</i>	Aesthetics	Ethics	<i>Normative Logic</i>
<b>Language Gaming</b>	Mimetic Signaling	Sign playing	<b>Language Gaming</b>

Social cooperation (reciprocal altruism, sharing and helping, capability of understanding the intentionality of others; collaboration; coordinated hunting; alliance networks; social contracts; reliable communication and terminology) is the outcome of the ethological level and gives rise to language and culture, but on the other hand, language and culture facilitate social cooperation, thereby also enhancing the survival fit of the human species and sub-populations – the *agapistic* ‘nurturing of nature’ (*agape* ‘evolutionary love’, Peirce 1893).

**Table 9.** Tertiary triangulation: Tradition – the evolution of cultural transmission of a *Language Code* (and other cultural skills)

[III.3.iii]	[III.3.iii.1]	[III.3.iii.2]	[III.3.iii.3]
<i>Normative Logic</i>	Logical Grammar	Critical Logic	<i>Methodetic</i>
<b>Language Gaming</b>	Communion [ <i>Contact</i> ]	Practice [ <i>Message</i> ]	<b>Tradition</b> [ <i>Code</i> ]

Language Gaming requires the cultural transmission of a *Language Code*, and this happens in meta-communication (Andersen 1989) co-occurring simultaneously with communicative Communion and Practice. This meta-communication is part of the level of *Tradition*. As a kind of natural methodetics,<sup>15</sup> Tradition concerns the hypothesis of a viable Code that could ‘generate’ the Linguistic Experiences of the language acquirers, i.e. the Utterances in their linguistic surroundings. This is Abduction. The hypothesized Code is then tested by targeting it in linguistic Practice, which is Deduction. The result of the testing work is *Conventionalization*, or *Induction*. Andersen’s Abductive-Deductive Model of linguistic change is widened here by integrating this final logical process of Peirce’s Normative Logic – *Induction* (Mayo 2005).

15. Normative Logic is a so-called self-controlled *dialectica docens*. In natural language there must be a corresponding *instinctive* (non-normative) *dialectica utens*. The self-controlled, normative modes of reasoning, viz. Abduction, Deduction, and Induction, must then be based upon corresponding *instinctual*, non-normative modes (*utens*) of instinctive reasoning, i.e. instinctive *proto-abduction*, *proto-deduction*, and *proto-induction*. It is the latter types of reasoning modes that are operative in the acquisition of the mother tongue, and which I have located in the Communicative Background (cf. Pietarinen 2005).

To summarize thus far: Linguaging evolution concerns the evolution of Representation out of Presentation (perceptual judgement into communicative judgement), and on top of this *Mediation* (i.e., evolution of communicative force and reciprocal interactive roles), i.e. the evolution of *Dialogical Semiosis*. Both emotional Mimetic Signaling, motivational ethological Sign Playing, and deliberate, rational Language Gaming involve *turn taking* ('duetting'; Levinson 2016) and *reciprocity* which are anchored in the Communicative Background. Turn Taking is a communicational Universal (Stivers et al. 2009), and there is a transition from pre-verbal proto-conversation to verbal conversation. The upshot is that human beings are *communicating Actors (Persons)*, non-verbally as well as verbally, in a Social World. This means that they participate in *multimodal full-bodily* communication (Thomsen 2010), manifesting a *phylogenetic*, genotype language instinct and a glossogenetic, phenotype *cultural* language pattern – *in toto a bio-cultural hybrid*.

### 3.3 The evolution of Language Gaming

According to the architectonic analysis that Peirce gives of his Normative Logic, there is a basic primary level of logical prerequisites – *Logical Grammar*; a derived level of the logic of valid argumentation – *Critical Logic*; and the ultimate level of the logic of scientific methods and theory of learning – *Methodeutic*. Likewise, Language Gaming is tri-stratal: it is living, historical bio-psychological languaging performing three architectonic functions *in tandem*, viz.: *phatic* Communion and *poietic* Practice plus *metalinguistic* Tradition. The first level concerns *contact* in a physical channel and psycho-social *connection* between the interlocutors – i.e., the prerequisite of the psycho-physical *medium* of linguistic communication. It resembles the prelinguistic level of cognitive-biological *Structural Coupling* (Maturana & Varela 1972; Maturana 2002; Brier 2008). The second level concerns actual linguistic *conduct* (message). On the third, *metalingual* level – with its scope on the two former, *object* levels, the linguistic conventions are acquired, negotiated, and developed, due to an inborn desire to learn from experience and to learn by doing. Evidently, the level of Tradition, is the level of competence formation and re-formation.

Linguaging Semiosis is, like Normative Logic, *normatively* based: a communicative Ethics furnishes principles of communal conduct, e.g. cooperation, deliberation, and self-control; sincerity, responsibility, and liability; terminological ethics for communicative interaction and speech acts. And communicative Aesthetics, with its principle of 'growth of concrete reasonableness', provides the basis for the drive in human beings to label their surroundings (*Real-World O*) according

to ontological-conceptual categorization, thereby bringing this *Umwelt* into their dialogical, Social World.

A last claim is that thirdness<sup>16</sup> and the principle of *continuity* (*synechism*) sets the framework for dialectal development, growth, and propagation in language acquisition and change. Basically, by being the foundation of reasoning, thirdness gives the framework for *Language Gaming* on all three levels, but essentially on the level of Tradition, summarized in the title as ‘induction and tradition’. Secondness, as *historicism* (Brunson 2010), is the basis for understanding language as part of *irreversible* time (cf. the evolution of living species in natural history), i.e. as a unique part of a unique self-identical historical process. Nevertheless, this eternal process is *recycled* in each new generation, through the process of *cultural transmission* (cf. Tarde 1903 [1890]) (as underlined by the “Play it again!” of the title of my paper).

In *Metaphysics*, dealing with space-time, ontology, and evolution (habit formation), Language Gaming is a socio-psychological *deontology*, also partaking of physical and physiological manifestation, and therefore, a biocultural hybrid (observing both teleological and efficient causation).

### 3.4 Language Gaming as a teleological process: *Energeia* – *entelechy* and *syntaxis*

Language is primarily *processual Language Gaming*: creative *interactivity*, or *energeia* (Coseriu 1957). Being processual, it is characterized by historicity, evolution, and time. Language Gaming is simultaneously Communion, Practice, and Tradition. Here-and-now, they cooccur as simultaneous *aspects* of the same semiotic communicative *process*, in the same communicative interaction. This is the phase of *actual goal-directed* process, or *entelechy*. Tradition is based on a set of *methods* of language learning and change, the *Language Acquisition Device*, an evolutionary-genetic product (genotype). It comprises reasoning in its three modes: *abductive* explanation (constructing a set of rules to explain the experienced linguistic data); *deductive* prediction, testing and (re-)evaluation of the acquired rules; and *inductive* confirmation, validation, and conventionalization (dialect coproduction). Likewise, the levels of Communion and Practice are directed by a *Language Interpretation Device* (Thrane 2004), with its three procedural modes: *abductive interpretation* (decoding), *deductive production* (encoding), and *inductive conversation* (discussing and negotiation, cf. the collectively created Cominterpretants). There is a crucial connection between Tradition and Practice since deductive prediction and testing

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16. Normative Philosophy is determined by guiding principles based in *Phenomenology*'s experiential categories of firstness, secondness, and thirdness (Krausser 1977).



involve a *rhetorical* way back from Tradition into Practice, where the constructed rules are tried out and evaluated in actual language use (the meta-communication introduced in Section 3.2 above), and *inductive* dialect formation involves deductive propagation (adoption in usage) on the level of Practice (Andersen 1988).

The pragmatic level of Language Gaming is the integration of Representation and Mediation into illocutions (production and reception of Utterance Meanings). They are symbolized by *syntactic* locutions (Word and Sentence Meanings). *Syntaxis* is the incremental joining of categorematic signs as ‘bricks’ with *syn-categorematic* signs as the structural ‘mortar’, e.g. of a predicate and its argument terms with a *copula*.

### 3.5 The social deontology of Language Gaming

Language is inherently social: the *social impulse* – collective, *we-intentionality* – is operating on each level of *Language Gaming*. On the level of Tradition, language users are committed to intersubjective, communal *confirmation*: a given form is not part of their norms in force until it is accepted and adopted by their fellow interlocutors. In language acquisition, a preliminary sifting of the corpus of utterances of a (variational) speech community consists in the acquirer making judgments as to whether a given utterance belongs to his dialect, as produced by his section of the speech community, ultimately whether the ‘voice’ is produced by his ‘mother tongue’ (and is not acoustic noise). Basically, he sifts the noisy surroundings to decide what belongs to his linguistic *Social World* as output of its community language (via the interlocutor’s Code).



The ‘trivial’ constellation of the *social principle*: An *I* and a *You*, on the basis of inborn *we-intentionality*, co-produce a *we-group* in the *Social World* (*We*). Basically, *I* and *You* are equipped with irreducible *I-intentionality* (self-control, will, *conatus*) united on the basis of living in and joining attention to a common *Real World* (*It*). The collective experience is construed as the *Reference Object* (in the *Social World*, *We*). Notice that *I*, *You*, and *We* are (manifestations of) private/public Minds.

**Figure 2.** The triadic constellation of the *social principle*: *I*, *You*, and *It*, projecting as Persons into the *We*

The function and result of this architectonic is that the individual’s *idio-lect* (hypothetical proposal) is continuously put to intersubjective testing to become his operative *dia-lect* (assumed to be shared with his interlocutors) – his private language turns *public*. Thus, the *we-group* is a minimal speech community. According to the triangulation into Communion, Practice, and Tradition, we have a *Community*

of *Communion* of mates and buddies; a *Community of Practice* of language users, members of the given practice community; and a *Community of Tradition* of Models and Learners. The *I* and the *You* are the acquirers and their models, the *It* is the experiential environment. In the middle, we have both the linguistic deontology of the *induced we*-dialect being internalized and the linguistic experiences to be explained by these internal dialects abduced from the linguistic experiences.<sup>17</sup> Notice that the *I* and *You* project as *Persons* in the Social World and as organisms (agentive bodies) in the Real World (*It*). A total human being is thus a *Mind-Body-Person* (Actant-Agent-Actor) constellation.

### 3.6 The two peripheral phases of Language Gaming: *Dynamis* and *ergon* – *paradeigma* and *syntagma*

The languaging going on simultaneously in Communion, Practice, and Tradition is *actual* goal-directed process, *entelechy*, as stated in Section 3.4. *Actual* Process implies two complementary *phases*: *virtual*, ‘would-be’ process, or *dynamis* (Pattern); and *potential*, ‘has-been’ or ‘is-going-to-be’ process, or *ergon* (Product). The virtual phase is the Convention (the individual’s and the Society’s Dialect; i.e. the Case in Andersen 1973), whereas the (perfective, ‘has-been’) potential phase is the Result in Andersen (1973) – i.e., the corpus of utterances (*Communicative* Objects), from which a viable account, a hypothetical explanation in the form of the individual’s dialect or Competence, is abduced. In this abduction, the *Real-World* Objects function as ultimate Context (premiss). The Competence which is abduced is *tri-vial*, of integrated Communion, Practice, and Tradition.<sup>18</sup> The Texts which are produced (‘has-been’ process) and received (‘is-going-to-be’ process) according to such competences are tri-vial too. The *dynamis* is both pragmatic *organon* (Communicative Competence) and grammatical *paradeigma* (Lexico-grammatical Competence; with its distinction between categorematic (lexical) and syncategorematic (grammaticalized) signs).

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17. These experiences are *Results*, and the acquirers guess at their *final*, mental, “responsible causes” (*Case*: Grammar), according to a *Law* (Universals): would this proposal (grammar/hypothesis) account for the observed data (Usage)? (Cf. Andersen 1973.)

18. Evidently, the Traditional Competence cannot be used in the acquisition of itself: a universal faculty of acquisition is needed as guidance, viz. the universal preconditions of the *Language Acquisition Device*.

**Table 10.** The three phases of Language Gaming: *ergon*, *entelechy*, and *dynamis* with respect to its three aspects

Phase→	<b>Ergon</b> [ <i>Communiq��</i> ]	<b>Entelechy</b> [ <i>Communication</i> ]	<b>Dynamis</b> [ <i>Competence</i> ]
↓Aspect			
<b>Communion</b>	Communion Text	Communion Interaction	Communion Competence
<b>Practice</b>	Practical Text	Practical Interaction	Practical Competence
<b>Tradition</b>	Traditional Text	Traditional Interaction	Traditional Competence

#### 4. Communication, meta-communication, and *Universals* of Language Gaming (the ‘three-in-one’)

As claimed several times above, Language Gaming is *simultaneously* Communion, Practice, and Tradition – they cooccur in each and every instance of communicative interactivity. However, there may also be special *focus* on each of their defining factors. Thus, there are three possible superordinate *reflexive* foci: Contact-focused *phatic*; Message-focused *poietic*; and Code-focused *metalingual*. Cross-cutting this, there are three foci corresponding to the *dramatis personae*: *Utterer* (Communicative Object; *symptomatic*); *Interpreter* (Cominterpretant; *appellative, conative*); and *Context* (Reference Object; *referential*).

Contact implies three substance dimensions that the interlocutors take part in, and which are the foundation of *Representation*: The *Context* is *shared attention* – the basis of reference (*Reference Objects*); the physical *channel* is used to develop public expression (*Communicative Objects*), and the psychological *connection* to develop ‘common sense’ (*Cominterpretants*). These three dimensions are united in triadic representational semiosis. In its semiotic genesis, *dialogic* Representation is *possibility*, found in a potential text – the phase of *ergon* (*syntagma*). In *actual* Language Gaming, semiosis is dynamic-energetic *entelechy* (*syntaxis*), whereas what is negotiated on the level of Tradition is an *ideal*, finious, collective deontology (*paradeigma*). Finally, the language-specific competence *and* the rhetorical-pragmatic as well as phonetic synchronic universals of a *Language Interpretation Device* (LID, Thrane 2004) function as minor and major premises, respectively, on the levels of Communion and Practice, whereas the Laws on the level of Tradition are the diachronic universals of the Language Acquisition Device (LAD).

To explain ‘language acquisition and change’ by way of methodetic reasoning, we need a level of Universals – *Laws of Language Gaming* – to function as premises in the proto-syllogisms (cf. Andersen 1973). These Universals are ‘three-in-one’: there are Universals of Communion, of Practice, and of Tradition. They are correlated with the *reality (time)* dimension: potential (past/foundational) – *panchronic*, actual (present) – *synchronic*, and ‘would-be’ conditional (future/evolutive) – *diachronic*.

The diachronic universals of Tradition represent *transuasive generality* and are inherent in LAD. As such, they deal not only with the past (*ergon*) in Code abduction but also with the present (*entelechy*) in deductive testing of the abducted Code (in Practice), and, crucially, with the conditional future (*would-be dynamis*) in inductive Conventionalization of the Code. As against this, the *pan*-chronic universals of Communion are *originary* potentialities, everywhere present, ever since their biological evolution (and therefore, in fact, represent the *past-in-the-present*). These foundational universals, as just mentioned, concern dialogical turn taking on the basis of physical and psychological contact/connection; and social networks and hierarchy. The *synchronic* universals of Practice are the pragmatic/rhetorical/poietic Universals inherent in LID and are functional/procedural, concerning *obsistent* actualities.

**Table 11.** The tri-categoriality of the basic semiotic parameters

	Firstness	Secondness	Thirdness
<b>Semiotic aspects</b>	<i>Contact</i> (Communion)	<i>Message</i> (Practice)	<i>Code</i> (Tradition)
<b>Interactants</b> ( <i>dramatis personae</i> )	Subject (Utterer vs. Interpreter)	Context (Real/Reference Object)	Cosubject (Interpreter vs. Utterer)
<b>Semiotic dimensions</b>	Representamen	Semiotic Object	Interpretant
<b>Semiotic phases</b>	<i>Potential</i> semiosis ( <i>ergon</i> )	<i>Actual</i> semiosis ( <i>entelechy</i> )	<i>Virtual</i> semiosis ( <i>dynamis</i> )
<b>Universals</b>	Panchronic (communal)	Synchronic (practical)	Diachronic (traditional)

#### 4.1 Communion (panchronic)

Strangely enough, investigations of linguistic *Communion* do not focus on the ‘sharing’ function of Communion. Sharing is a triadic relation: ‘Someone shares Something in common with Some Other’, ‘Someone and Some Other partake of Something’, where the Object *unites* the Subject and Cosubject – ‘mediates’ them. With this understanding in mind, *Language Gaming* presupposes as pivotal term the Context (Object), i.e. the focus of Representation, which yields *collective experience*. This Context, as shared *Reference* Object, is internalized as *Semiotic* Object, and it contracts an internal Representamen, on one hand, and a mental Interpretant, on the other, in representational semiosis. The Representamen is expressed, or uttered, as a *Communicative* Object, which is then also an Object that is shared in communication (public), produced by the Utterer and perceived by the Interpreter (and Utterer, in feedback). The *Communicative* Object (Utterance) occurs in a physical *channel*. However, the Utterer’s *Intentional* Interpretant and the

Interpreter's *Effectual* Interpretant are private and do not occur in a common, public "channel". Communication is not thought reading, *telementation* (Harris 1988), but the Cosubject exists in the Subject's *Co-World*, and vice versa, and their *unification* (as a *We*) is located in the public/intersubjective Social World. And just as the Object is reflected in the Subject's and the Cosubject's dialectal *Counter World*, so the Subject and the Cosubject are internalized into each other's Dialect (precisely, *Mirror World*). In this way there is psychological *connection* (union) between the Subject and Cosubject. Owing to this unification, their Interpretants (*intentional* vs. *effectual*) may become welded into a shared, communal *Cominterpretant* – their 'common sense' *negotiated* in the *Social World*. This socio-psychological world is an abstracted, shared *Commind*, the *virtual* mind of the *we*-group of the externalization of the Subject Mind and Cosubject Mind into the Social-World Mind. This *Commind* is thus the (negotiated, inductive) *Type* for the individual token Minds of the Utterers and Interpreters. The *Cominterpretant* enters back into the interlocutors' Dialects as *Logical Interpretant*. Similarly, a shared *Communicative Object* (expression) is imported as a common dialectal *Legisign*, and the shared *Reference Object* is internalized as a *General Semiotic Object*. Together, *Legisign*, *General Object*, and *Logical Interpretant* constitute a shared *Symbol*, and the whole system of symbols constitute their dialectal, lexico-grammatical *paradeigmata*. It is this 'Common Law' (Currency) that is negotiated on the *legislative* level of Tradition, in the phase of Induction. The *inductive*, *Community Code* (cf. Saussure's *Langue*) is only virtual ('declarative') and as a (pheno-)type requires internalization as (pheno-) token *procedural* Competences in order to be operative in communicative Practice.

Communion concerns physical and psychical approximation (cf. emotional contagion, mimesis) and the ultimate creation of *social networks* and *Communities* – the prerequisites of Practice and Tradition. Communion is governed by lingua-cultural norms: a *Communion Competence*. Communion is dialogical, involving *phatic* exchanges. Although these often occur conspicuously as prefaces and exits of dialogues, each communication incorporates Communion as an aspect, more or less emphatically (as in turn claims, feedback elicitors, etc.). Likewise, Tradition is an aspect of every instance of communication since it minimally propagates *status quo* of the linguistic norms. For instance, decoding a message concurs with the abduction of the competence which is deemed responsible for it; and encoding a message is at the same time a deductive testing of one's Code with respect to one's Addressee. The *tos* and *fros* of conversation in Practice coincide with the negotiation and inductive *confirmation* of the linguistic norms in Tradition. Likewise, a Message's *poietic*, reflexive focus on itself is part of each and every instance of communication, witnessing the negotiation of the flow and direction of the communication. Notice that *Communion Competence* is also negotiated on the level of Tradition, since there may be different norms of Communion in the same historical

language (Senft 2009). Communion comprises the relative power of the interlocutors, the social-psychological and the physical distance between them, the rank of imposition of their contribution, and the degree of affect they feel towards each other (the psychological distance/intimacy between them). Thus, Communion also involves face-work and politeness.

An important concept of Communion is that of *oikeiosis* ('appropriation', Stephens n.d.), a centrifugal bonding relation with the highest degrees of strength at the innermost level (e.g., *ego-alter ego*; mother-child; family; peer group; clan; region; nation; diaspora). Language acquisition and change is channeled through this centrifugal system.

## 4.2 Practice (synchronic)

The pivotal aspect of communication is *Practice*, the 'poietic' *Message* construction – its production, comprehension, and negotiation. This is *Dialogical Semiosis* where Interpretants are developed according to *Background* imagination, creative-expressive freedom, and discursivity, with respect to the *World*. Also, the Representamina may be selected or constructed according to aesthetic value, esp. in poetry. Likewise, the *Semiotic* Objects may be conceived and developed as *Topics* of the *Universe of Discourse* without there being any dynamical Objects in the *Real World*.<sup>19</sup> The Message, as Mediation, is based on *communicative intentions* (behavioral force) of the Addresser – how he wants to influence his Addressee, with respect to the Context, the Contact, the Message itself, and the Code, and this may be done with a focus on himself and his feelings (expressive-symptomatic), on his Addressee (conative-appellative), on the Context (cognitive-referential), and the Code (metalingual) (cf. Jakobson 1960). Here, the Addresser and Addressee Actants are ultimately committed and liable in their Language Gaming – their Discourse Acts of Production, Reception, and Negotiation.

Discourse Production is based on Deduction: The Addresser starts out creating a communicative intention (emotional-motivational-rational force and object-directed Interpretants). This *intentional* Interpretant is *representationally* directed at actual or potential Reference Objects and *mediationally* directed at

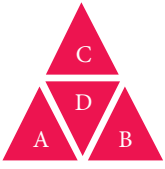
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19. For instance, the *Higgs boson* of particle physics was at first (from the 1960's to 2013) a *hypothesized* Object, not an Observational/Perceptual Object in the *Real World*. Thus, it was merely part of the 'third', *Social World* and a within-scientist theoretical *Counter World*, to become, as of now, part of the *World* of Nature and "confirmed" physics. We may say that, as a result of requisite physical experimentation, it has now become a *confirmed* Object – originally, it was merely a scientific construction, and accordingly it was a (*potential*) *Reference Object*, in want of a *Real-World* correlate.

an Addressee projected as an Interpreter in the Social World. Simultaneously, in face-to-face communication, the Subject and Cosubject (mental Actants) are naturally *embodied* as perceptual, Real-World *agentive* Organisms in the objective, Observational Context, just as they are *personified* as Actors (*dramatis personae*) in the *Social World*. The deduction consists in creating corresponding symbolic expressions to be abductively received (decoded and comprehended) by the Addressee in Reception.

On the level of Language Gaming, according to the hypothesis of *Cybersemiotic Discourse Pragmatics* the Mediation is bifurcated into a *perlocutionary* intention (representing preverbal levels of emotional Mimetic Signaling and motivational Sign Playing) and a private rational *illocutionary* intention (Utterance Meaning). This latter intention has to be translated into a dialectal-verbal *locutionary* intention (Word and Sentence Meaning). This is then, according to the Linguistic Competence, converted into a word-and-sentence phonological expression and, next, an articulatory phonetic expression which is articulated as a *Communicative Object*. Accordingly, the Code that is abduced in Tradition and deductively put to use in Practice is di-stratal: an *illocutionary Communicative Competence* including a *locutionary* lexico-grammatical *Linguistic Competence* (paradigmatic Idiom), this totality in its turn being embedded in a *perlocutionary Behavioral Competence*.

In Reception, the Addressee *retroduces* the Addresser's *Intentional Interpretant* (Utterance Meaning) from the received *Communicative Object* (expression) and *hypothesized Reference Object*. The reconstructed intention is the *Effectual Interpretant*. In order to arrive at this interpretation, he has to use his *Dialect (Idiom)*: By retroducing the *Communicative Object* as a Representamen – *Legisign* – and the *Reference Object* as a *General Semiotic Object*, the *Logical Interpretant* is inferred, and from there the *Intentional Interpretant* is reconstructed as the *Effectual Interpretant*. In Reception, the Addressee is guided by his LID with its *Universals of Practice*. Building on the retroduced interpretation (*hermeneusis*), he may go on to develop (deduce) his own turn at discourse (*hypocrisis*). This selection may reveal to the previous Addresser whether this interpretation is in fact correct. If the original Addresser in a third turn builds on the (re-) interpretation by the previous Addresser, this interpretation is validated (accepted, subscribed to), even though it may not be truly correct (i.e. accepted Misunderstanding), and thus the two interpretations are resolved into a *Cominterpretant* as a property of their communicational unification into the *Commind* of their communicational dyad (*we-group*). This is *Induction* on the level of Practice – or, *Conversation*.



The tri-vial constellation as applied on the level of Practice: B is the Addresser who expresses his *Intentional* Interpretant, interpreted by the Addressee (A) as his *Effectual* Interpretant that he (A) builds on in his next turn. If the original B, in a third turn, builds on this re-interpretation, thereby accepting it, it becomes their shared *Cominterpretant*. Simultaneously, a shared *Commind* (D) is projected as a virtual Type for the Addresser's and Addressee's minds as Tokens. C is the Collective Experience of the two Interlocutors, and, per transitivity, of their *Commind*, D. (Extensionally, D is the Union, or Dyad, of A and B as Actors (persons); intensionally, D is their Unification ('welding', by way of Induction) as a society – an ideal construct.)

**Figure 3.** The triangulation of Practice. B: Addresser; A: Addressee; C: Collective Experience; integrated into D: *Commind*

According to *Cybersemiotic Discourse Pragmatics*, the basic unit of linguistic semiosis is not the locutionary-grammatical sentence but the illocutionary-pragmatic *Discourse*. This means that both Reception (A) and Production (B) by the *same* individual person in turn-taking are integrated as an *idio-synchronic* unit, a *Discourse Act*, so that the interpretation of a previous turn (Reception, A) constitutes the antecedent for the following response (Production, B) as consequent. These two acts, by the same person, are connected by a pragmatic universal of the LID, in a *deduction*. Discourse Acts are then connected in *deductive* sequences or *chains*, where the preceding one (e.g., a question) is antecedent in relation to the following one (e.g., an answer) as consequent. The discursual interaction (*Discourse*, D) is then built up successively and incrementally. Notice that not all Discourse Acts involve a receptive subpart, e.g. orders; and not all consequential acts are *discourse* acts, strictly speaking, since, for instance, the act of obeying an order is *sym-practical* – i.e., is a non-verbal Sym-practice integrated with the verbal Practice.<sup>20</sup> In line with this distinction between Practice and *Sym-practice*, *Society* is a higher-order unification of these two poles, according to universal principles.<sup>21</sup> The argumentative *discussive* tos and fros of these deductive chains amount to – *induce* into – a higher-order, circumscribed discursual unit, a *Dialogue* or *Conversation* (D), evidently a token of thirdness. In this way, *Society* subsumes persons and their deeds.

20. Though, of course, a sympractical act may indeed be verbal “materially” – the answer to the imperative “Answer me!” is a *speech act* (Austin 1962).

21. Declarations (e.g., declaring a war, opening meetings, etc.) are crucial in that, by performing the verbal Practical act, one is at the same time performing the opposite number non-verbal *Sympractical* act, with a sympractical effect (e.g., a state of war, an open meeting) (cf. Searle 1989).



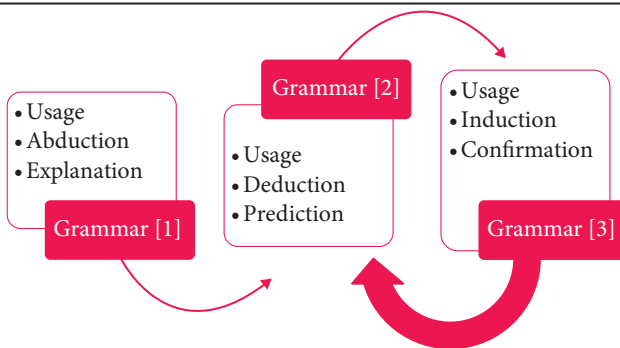
### 4.3 Tradition (diachronic)

According to the *Cybersemiotic Discourse Pragmatic* theory of evolutionary communication, the level of Tradition corresponds to the *methodetic* level of Normative Logic which deals with the development of methods – hypotheses and theories, and here the three kinds of argument are, evidently, crucial, cf.:

[In] an Obsistent Argument, or *Deduction*, (...) the conclusion is drawn in acknowledgment that the facts stated in the Premiss [Case] constitute an Index of the fact which it is thus compelled to acknowledge [Result]. (...) Deduction is Obsistent in respect to being the only kind of argument which is compulsive. (...) An Abduction is Originary in respect to being the only kind of argument which starts a new idea. A Transuasive Argument, or *Induction*, (...) is Transuasive (...) in respect to its alone affording us a reasonable assurance of ampliation of our positive knowledge. (Peirce, CP 2.96, 1902)

Thus, on the level of Tradition, the communicative dialect is negotiated, and this is done in three stages. *First*, every Learner is an Interpreter Subject creating an *explanatory* hypothesis (acquired grammar), on the basis of, and to explain, the linguistic experiences supplied by their Model Utterers, Cosubjects (Abduction – hypothesis formation). *Next*, this hypothesized grammar (G1) is turned procedural (G2) and applied, by drawing the argumental consequences of it in the form of usage (the theorems are turned into productive and receptive rules in the given dialect – Deduction: predicting and testing the hypothesis); here, the Learner performs the role of Utterer Subject in Message production (deduction) – the Model, *vice versa*, being the *judicial* Interpreter Cosubject sanctioning the Learner's Usage (Coseriu 1988). In the opposite constellation of the *dramatis personae*, the Learner abduces the linguistic experiences of his Model surroundings and thereby tests whether his grammar (G1 > G2) can cope with it (Andersen 1973). *Third*, and this is the focus of the present contribution, the trial and error process of the previous levels is recycled *inductively*, thereby corroborating his hypothesis, and in the long run this hypothesis turns into a more and more *corroborated* and *entrenched* habit, a *declarative* grammar – i.e., a verified, validated, or *confirmed* hypothesis (G3). The central thing about the model is that it caters for the *cultural, glosso-genetic* evolution of the community dialect, just as biological reproduction provides for the possibility of *natural*, phylogenetic evolution. Culturally, the Models may as well turn into Acquirers, in the situations where they accept innovations by Learners. This means that self-initiated *innovations* (proposals, or *adhortatives*), too, are a kind of abductive change, as in the case of neologisms. However, the community dialect (as a type phenomenon, a *Convention*, G3) solely *exists* when realized in the minds of the language users (as a token procedural grammar, G2). This is

internalization (*Idio-poiesis*, Thomsen 2019fc). The community level (D, above) is the forum (“public domain”) where Linguaging in general and, specifically, the processes of language acquisition and change take place. I have termed it a *legislative system* (Thomsen 2006). It has a double-focus, both on the Learners (Norm Subjects) and the Models (Norm Bearers/Legislators/Judges), i.e. the inductive Intersubject *we*. Just like Methodeutics, language Tradition deals with the *validity* of hypotheses, however in terms of *viability*, not strict truth – the Inquirers = Learners have to construct a competence that *functions*. The ‘epistemic’ *Real World* of the Subjects is described and explained by *Science* (natural sciences) as an ontology, whereas the Subjects create – *construct* – their ‘deontological’ *Social World* (e.g., by way of declarative speech acts, cf. Searle 1989; *social autopoiesis*), on the basis of a deontology which they continually reconstruct.



The three stages of linguistic Tradition: 1. the *abductive* stage where a Grammar [G1] is proposed as a *hypothesis* to explain Usage; 2. the *deductive* stage where this grammar is used as a *procedure* (Grammar [G2]), on the level of Practice, to test the correctness/viability of its consequences (Usage), either by abductively *Understanding* the Usage of others (does it correspond to my predictions?), or by deductively *Uttering* Usage, to check the evaluation by the surrounding Models; 3. the *inductive* upshot of the experimentation, i.e. the ideal *declarative* Grammar [G3], a *Convention*, in the speech community (D), which has to be turned procedural (G2 in interlocutors A and B) to be applied in Practice (*Idio-poiesis*; see the feedback arrow from G3 and back to G2).

**Figure 4.** The three stages of linguistic Tradition: *Abduction* (hypothetical), *Deduction* (procedural), and *Induction* (declarative)

#### 4.3.1 *Abduction – discovery: Linguistic experiences as surprising facts to be explained by a linguistic competence (G1)*

As a biological preliminary to the cultural acquisition of one’s mother tongue (*Glossogeny*), there is a threshold stage of deductive-causal triggering of the

ordinary abductive learning process,<sup>22</sup> cf. Peirce on *effective* (stimulus-response) causation in physiology:

The cognition of a rule [*Law*] is not necessarily conscious, but is of the nature of a habit, acquired or congenital. The cognition of a case [*Cause*] is of the nature of a sensation; that is to say, it is something which comes up into present consciousness. The cognition of a result [*Effect*] is of the nature of a decision to act in a particular way on a given occasion. In point of fact, a syllogism of Barbara virtually takes place when we irritate the foot of a decapitated frog. The connection between the afferent and efferent nerve, whatever it may be, constitutes a nervous habit, a rule of action [*Law*], which is the physiological analogue of the major premise. The disturbance of the ganglionic equilibrium, owing to the irritation, is the physiological form of that which, psychologically considered, is a sensation [*Cause*]; and, logically considered, is the occurrence of a case. The explosion through the efferent nerve is the physiological form of that which psychologically is a volition [decision] [*Effect*], and logically the inference [*deduction*] of a result. When we pass from the lowest to the highest forms of innervation, the physiologically equivalents escape our observation; but, psychologically, we still have, first, habit [*Law*] – which in its highest form is understanding, and which corresponds to the major premise of Barbara; we have, second, feeling [sensation] [*Cause*] or present consciousness, corresponding to the minor premise of Barbara; and we have, third, volition [decision] [*Effect*], corresponding to the conclusion of the same mode of syllogism. (CP 2.711)

From birth on (or even before), the newborn infant meets with linguistic and other semiotic as well as non-semiotic experiences, some of which function as *Key Stimuli* that trigger an *Innate Release Response Mechanism*, the *Language Acquisition Device* (LAD, a *congenital habit*, in Peirce's terminology above), which functions as universal law in the abduction of a concrete linguistic competence, on the basis of the triggering experience.<sup>23</sup> The hypothesis, then, is that the LAD has to be *activated* (ethological, Sign Playing level). It also means that the linguistic input experience changes status from being a strict perceptual Object to being a *Communicative Object* that is constructed as the *Result* of a Practice Utterance produced by the Learner's Model. When the Learner puts his own linguistic competence (G1 on probation, as a procedure G2) to test in language production and reception, he produces communicative behavior in conformity with an inborn *Language Interpretation Device*, this LID likewise activated in confrontation with the linguistic experiences.

22. According to Darwin (1871), language is an “instinctive tendency to acquire an art [*techne*]”.

23. Chomsky (e.g., 1986, 2000) and Lenneberg (1967), as is well-known, have paved the way for the ethological, biolinguistic conception of language acquisition. – There is evidence that auditory perception and abduction begins even before birth, since a newborn can recognize her mother's voice and mother tongue.

LAD and LID are the diachronic, panchronic, and synchronic compartments of the innate *Human Linguistic Faculty* (*Universals of Language*; Andersen 1973; Thrane 2009), as dealt with in Section 4 above. Preliminary to this is the originary communicative situation, viz. that of *Mimetic Signaling* (cf. *Structural Coupling*, Maturana & Varela 1972), based on a simple *mimetic* languaging instinct. We then have this three-stage hierarchy of language acquisition (*iconic – indexical – symbolic*), corresponding to the three levels of Languaging introduced in Section 3.1 above:

Mimetic (*Empathy*) < Stimulus-response (*Ethogram*) < Language Gaming abduction (*Tradition*)

Obviously, language acquisition is a *bio-cultural* hybrid, with the first two levels being ‘biological’ (iconic-indexical), the last one ‘cultural’ (symbolic). In fact, this integrated phenomenon is a case, or plea, for the theory of *Total Human Evolutionary Cognition and Communication* (Thomsen & Brier 2014; Thomsen 2019fc.).

The first stage of Tradition is Abduction: “Reasoning from Surprise to Inquiry” (cit. in Bellucci and Pietarinen n.d.), i.e., from surprising Linguistic Experiences to the formation of a possible and viable Grammar (G1), and it is this stage that starts the whole methodetic acquisitional system:

In the inquiry, all the possible significant circumstances [cf. Law] of the surprising phenomenon [Result] are mustered and pondered, until a conjecture furnishes some possible Explanation [Case, cf. G1] of it, by which I mean a syllogism exhibiting the surprising fact [Result] as necessarily following from the circumstances of its occurrence [cf. Law] together with the truth of the conjecture [Case, cf. G1] as premisses. (Peirce [1908])<sup>24</sup>

Abduction, then, is the creation of a hypothetical *explanation* – the linguistic competence (G1) – which is then put to *falsificatory* testing by being applied in usage (Deduction; G2) and, possibly, validated or corroborated (Induction) in the long run (G3). According to Andersen’s cognitive, functional-*rational* model of

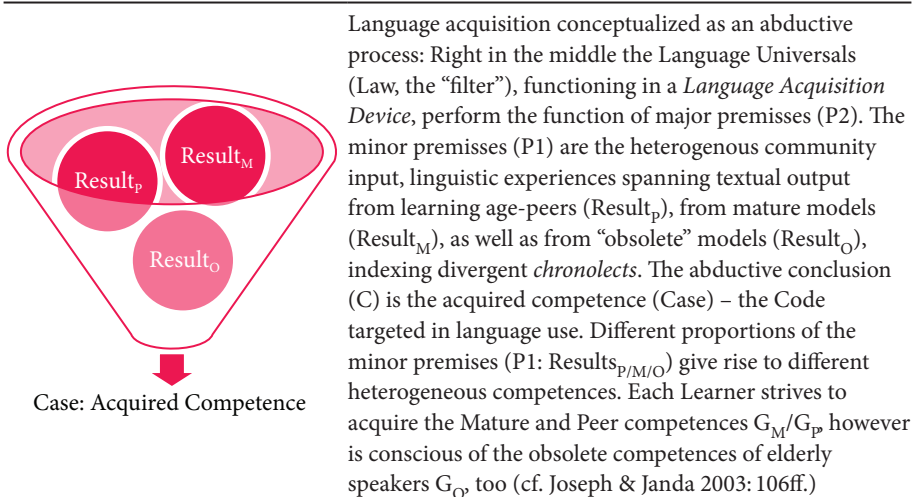
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24. The logical scheme is accordingly – written as a *Barbara* syllogism (i.e., the default direction/perspective of an inference):

**Law:** the circumstances of its occurrence [P2] Universals of Language & Context of Communication  
**Case:** the truth of the conjecture [C] (Abduced) Grammar (taken as valid)  
**Result:** surprising fact [P1] (Will explain surprising fact:) Observed Linguistic Usage

(P = Premise; C = Conclusion.) – The problem with the modality in the premiss is corrected here (A = Antecedent): “It is to be inquired whether A [Case, cf. G1] is not true.” (Peirce [1905], quoted in Ma & Pietarinen 2016).

‘abductive and deductive change’ (1973; cf. 2005, 2017), language acquisition builds on innate/inalienable *Universals of Language* as well as rational inference processes which require them to operate. Both are needed to explain linguistic and cultural transmission, though some functional-*empiricist* linguists (Evans & Levinson 2009; Deutscher 2002, Walkden 2011) reject their existence or relevance. However, it is important to have in mind that the universals are not essentialist/monolithic (cf. Evans & Levinson 2009) but finious, evolutionary, and that abduction is not necessarily a *conscious (docens)* process of ‘inference to the best explanation’ (pace Deutscher 2002) but, in the case of language acquisition, is a *preconscious (utens)*, proto-inference, as are deduction and induction (cf. Pietarinen 2005; Paavola 2005).<sup>25</sup>



**Figure 5.** Language Acquisition as a process constrained by LAD (Law, “filter” in middle), targeting a viable Competence [Case]

#### 4.3.2 *Deduction – experimentation: The trial and error testing of the predicted consequences of the hypothesized linguistic competence (G1) as put to Practice (G2)*

The competence abduced is put to test procedurally (as G2), both in production, where the Representamina are tested, and in reception where the Interpretants are subjected to validation (is understanding sanctioned by the logical Interpretant?), and in general to check whether the Object denotation abduced falls under the

25. For treatments of abductive logic, cf. Pietarinen & Bellucci (2014), Ma & Pietarinen (2016), Andersen (2017), Bellucci & Pietarinen (n.d.), Psillos (2011), Staat (1993), Zeman (1986).

sway of the General Object of the Code. There are two kinds of deductive innovation, one where the Grammar is abducted from existing external input, the other where some rule is created (Neologism). In both cases the Grammar is an originary proposal (G1).

#### 4.3.3 *Induction – confirmation: The Conventionalization of the Communicative Competence (G3)*

The *transuasive* stage of Tradition is *Induction* (focus on *community contract*). This stage terminates the whole system with agreement (or disagreement, resulting in dialect ‘reformation’; cf. Andersen 1974):

The validity of Induction consists in the fact [that] it proceeds according to a method which though it may give provisional results that are incorrect will yet if steadily pursued, eventually correct any such error. [...] all Induction possesses this kind of validity, and [...] no Induction possesses any other kind that is more than a further determination of this kind. (Peirce [1907])

The validity of Induction rests on its being a *self-corrective* process which tends to represent reality steadily more correctly (Mayo 2005). However, the reality that the Learner has to represent correctly, i.e. *reconstruct* for himself, is the linguistic competences of his Models, internal social *deontologies* with *external* Indexes (manifestations) – the *Communicative* Objects. The correctness (viability) of the Learner’s reconstructed deontology is determined by his Models who can accept or reject the proposed reconstruction – and even accept an incorrect one, as ascertained by its output Communicative Objects. Notice, then, that Induction is valid even though it may be ‘incorrect’, since the *method of self-correction* itself is valid – the Learners may go on correcting their deontologies in a finious process of *Conventionalization*. Now, finding out that a hypothesis is ‘incorrect’, as determined by the reactions of his Models, the Learner should correct it, see to it that it gives ‘correct’, acceptable, results. However, this does not mean that his competence has to be *substantially* revised, so long as his output passes (is accepted). According to Andersen (1973), the Learner may add *adaptive* rules to remedy for otherwise ‘incorrect’ output.

Induction is an *incremental* process yielding a steadily growing habit. In the case of the Code, it is never fixed: it is an endless, finious process of *conventionalization* (Thomsen 2017). It is a *generalization* from the particular to the general. In each and every case, the Ideal Grammar (G3) is an overgeneralization since no person (Learner) has ever and will ever come to experience the *infinite potential* of the Grammars of his surrounding (mature) Models ( $G_T$ ). By communicating, the Learner perpetually provides particular material to Induction – to the growing

habit.<sup>26</sup> When Receiving (abducting), the Learner builds up samples, drawn from the open-ended samples which could be obtained from his language-gaming surroundings. By Uttering (deducing), the Learner provides his Models with samples of output from his proposed Grammar ( $G1 > G2$ ) to confirm it. Thereby, in the long run, they co-create their Ideal Dialect ( $G3$ ).

## 5. “As time goes by ...” – Play it again! – *Induction and Tradition*

We have seen that the three modi of syllogism are not the sole property of methodic meta-communicative Tradition (where they are in extra focus) but also of the object levels of Contact and Message negotiation. Thus, we can make the following cross-tabulation of the syllogisms (S) of Abduction, Deduction, and Induction and each aspect of *actual* communication (*entelechy*, E) – Communion, Practice, and Tradition:

**Table 12.** The different aspects of Language Gaming (x-axis, E1-3), cross-tabulated by the different syllogistic ‘stages’ (S1-3, y-axis)

	Aspect→Communion E1	Practice E2	Tradition E3
↓Stage			
<b>Abduction S1</b>	Proposed Contact: C1	Understanding: M1	Proposed Competence: G1 [Result]
<b>Deduction S2</b>	Accepted Contact: C2	Utterance: M2	Practiced Competence: G2 [Case]
<b>Induction S3</b>	Maintained Contact: C3	Conversation: M3	Convention: G3 [Law]

### 5.1 The semiotics of Tradition – the Competence and its stratal architectonic

Tradition being the *conventionalization* ( $G3$ ) and *operationalization* ( $G2$ ) of *hypothesized* ( $G1$ ) Language Gaming Competences, we have to, first, look back to the *triggering* of the Abductive process of language acquisition: the linguistic experiences as environmental *Key Stimuli* triggering the *Innate Release Mechanism* of the more or less domain-specific *Language Acquisition Device* which is a heuristic method, or *discovery procedure* – a growth function with an initial state *blueprint* of a grammar,

26. “There is no road, the road is made in walking” (Thomsen 2017), i.e. the Ideal Grammar is characterized by the thirdness, finious modality of *esse in futuro*. Language Gaming (i.e., meta-communicative Tradition) creates the Grammar as a moving target.

a so-called *Human Language Faculty* (HLF; Law in Andersen 1973) – a variable to be instantiated,  $G_0$ . The *linguistic experiences* LE – a variable corpus of (mature, peer, and obsolete) Models' Utterances in Context – determine the gradual and progressive instantiation and fixation of this framework via the Learners' abductions. The final endpoint is a mature Competence – a terminal state  $G_t$ . Language Acquisition is thus *transformative, abductive learning* (in circles of appropriation, *oikeiosis*, Section 4.1):

$$\text{LAD: } G_0 \rightarrow G_1 / LE_1 \rightarrow \dots \rightarrow G_t / LE_t$$

(Abduction: Universals  $\rightarrow$  Code [G1] / Usage)

Notice that this acquisitional process (*entelechy*) is functionally identical to semi-osis in that the linguistic experiences is the Object of representation (*ergon*), the states of the Grammar  $G_i$  (*dynamis*) successively Representamina (*structure*) and Interpretants (*function*): each state represents (*re-analyses*) and interprets (*evaluates*) the linguistic experiences in a cyclically *repetitive* process. The Competence that is acquired is a composite *illocutionary-locutionary* (communicative-linguistic) faculty. According to Coseriu (1952, 1968, 1977, 1985, 1988), this Language Gaming Competence (*dynamis*) is based on a *bio-physical* and universal-logical *elocutional* foundation (cf. Section 5.2) and has an outer framework of Universals (HLF/ $G_0$ ); internally, a tripartite, hierarchical historical-cultural locutionary *Idiom* (Type, System, Norms) is input to a particular illocutionary *Expressive-stylistic* Processor ( $\rightarrow$  *Practice*).<sup>27</sup> After the critical period, around puberty, the provisional  $G_t$  is mature *as a biological pattern* of behavior. From there on, it is solely *culturally* nurtured: for instance, the stylistic repertoire is extended. Thus, it is specifically the Norms (Coseriu 1952, 1957; Andersen 1989) and the Expressive Processor that are elaborated (Coseriu 1985) post-maturationally.

The succession of Grammars ( $G_i$ ) are states of *abductive* conclusions and thus only *hypothetical* proposals (G1) – semiotically *Poti-Signs* (*Phenotones*). At all states of the development of the individual's Grammar ( $G_i$ ),  $G_i$  is turned from the level of Tradition (G1) back into the levels of Communion and Practice (via *Idio-poiesis*) as *procedural* Grammars (G2) – *Acti-Signs* (*Phenotokens*) *deductively* testing the hypothesized Grammar (G1). Here, the focus is on Contact and

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27. To each level of this *deontology* correspond types of 'correctness' (Coseriu 1988). The idiomatic layer concerns locutionary *functional-grammatical* literalization of the communicative, illocutionary expressive-stylistic intention. The Idiom's component levels tend towards congruence (Type > productive functional System > Norms; cf. Coseriu 1980; Andersen 1990). For a treatment of the adaptation of Grammar to Processor and the stylistic-expressive process, see Hawkins (2004). There is also co-adaptation between the Stylistic-Expressive Processor and actual processing (*entelechy*).



Message creation (discourse production, reception, and negotiation) where the *LID* is operative. In production, a blueprint discourse contribution (Emotional Interpretant/perlocution) and the experiential Context (*It*) are taken as input, then an Energetic/illocutionary *Intentional* Interpretant is developed (deduced), and in the end a final public *Communicative* (locutionary) Interpretant is negotiated between the Interlocutors which is then internalized as a *Logical Interpretant* (in the Code). *Deductive testing*, thereupon, takes each stage  $G_i$  (as  $G_2$ ) and delivers learner-produced linguistic experiences,  $LE_i$ , under the sway of the LAD with its HLF ( $G_0$ , *Genotoken*).

In *inductive* negotiation and confirmation of the Learner's  $G_i$ , the Learners themselves compare their  $LE_i$  with the  $LE_i$  that their Models would produce (and may produce self-corrections). Vice versa, the Models compare the learners'  $LE_i$  with what they themselves would produce ( $LE_T$ ) (and may produce other-corrections). Each *current* state of the Learners' Grammar ( $G_i$ ) counts as their terminal Grammar,  $G_i$ , and the grammar of their surrounding Models functions as a generalized *target* grammar,  $G_T$ . Thus, the welding of  $G_i$  and  $G_T$  ( $= G_T$ ) via *confirmation* of  $G_i$  is semiotically an abstract, communal *Fami-Sign* (*Phenotype*,  $G_3$ ).

By being a terminal grammar, the Learners'  $G_i$  should be *functionally* equivalent to the grammars of their surrounding Models,  $G_T$ . The linguistic experience  $LE_T$  produced by the Models of a given Learner should in the end be producible and receivable by that Learner's Grammar  $G_i$ , i.e., the Learner's  $LE_i \approx$  the Models'  $LE_T$ . However, this equivalence of linguistic experiences does not amount to a token *identity* of their *functional languages*, only *functional equivalence*. Also, the output LEs may only be overlapping: for instance, the Learners' utterances may only be a subset of their Models' utterances in terms of producibility – e.g. the Models having a larger stylistic repertoire. The  $LE_T$  may also constitute ambiguous evidence and thereby give rise to divergent explanations, i.e., divergent *functional languages* ( $G_i' <> G_i''$ ), and thus dialect ( $G_3$ ) bifurcations ( $G_T > G_T' <> G_T''$ ; cf. Andersen 1973, 1974).

## 5.2 The evolution of the *Human Language Faculty* and the deontological *Linguistic Institution*

The innate biological basis of Language Gaming is the *Human Language Faculty* – universals of Communion, Practice, and Tradition, and, as mentioned above, they are, respectively, panchronic, synchronic, and diachronic. What is learned in language acquisition is evidently the Competence *operative* at the level of Language Gaming (Coseriu 1985), the natural language user performing acts of Communion, Practice, and Tradition. The Human Language Faculty evolved on the stage of Sign

Playing, since it involves an ethological triggering from experience to learning. Language acquisition is on its highest in a sensitive socialization period, from birth until around puberty (Lenneberg 1967; Hurford 1991). This is clear evidence that Language Gaming has a biological survival value (Hurford 1991). However, the *critical period* is only the *biological* basis: the development of the total personal dialect is a *cultural* achievement lasting throughout the total personal biography – human language is a bio-cultural hybrid.

It is important to stress that the scientific Methodetics of Peirce concerns epistemic theory formation (telos: actual epistemic truth) whereas Language Gaming *Tradition* deals with continual, repetitive formation of *deontological* Competences (telos: would-be Convention). The *consensus* of the inductive level of scientific Methodetics parallels *agreements*, i.e. mutual commitments (*contracts*), of Language Gaming Tradition. A theory is an Index,<sup>28</sup> a Competence (G3) a *constitutive* Symbol. Thus, language is fundamentally a *cultural institution* on a biological basis. On the inductive level of Tradition, it is *Law* (Constitution, G3), with a declarative force, *constructing* the Social World when used (G2).

### 5.3 Language change, phylo-, onto-, and glosso-genetically

The *Human Language Faculty* (HLF) is an evolutionary accomplishment of the species (*Genotype*,  $G_o$ ), the Competences a feat by the single individuals (*Phenotokens*,  $G_t$ ).  $G_o$  is manifested as a *Genotoken* in each single individual human organism at birth ( $G_o$ ).<sup>29</sup> This provides a *tychistic* population of variant HLFs (with possible mutations). In this gene pool, natural selection operates via biological reproduction and gives rise to speciation (*cladogenesis*:  $G_o > G_o' <> G_o''$ ). What the single natural language user develops throughout his lifetime in a speech community is a *Phenotoken functional* language  $G_t$  – the biological *Genotoken culturally nurtured*. The individual language users (*linguistic legislators*) co-create the ‘subsisting’ *historical* language of their speech community as a *cultural artifact* Phenotype  $G\tau$  (= G3) which they internalize as their Phenotoken dialects  $G_t$  (= G2). Logically, then, the historical language of the speech community (type,  $G\tau$ ) changes according to the linguistic Tradition of the *individual* linguistic competence *tokens* ( $G_t/G2$ ) of the

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28. Notice that by *Science* (cf. the Ladder Model, Table 4) is meant ‘natural science’ (physics, biology, psychology) whose Object belongs to the *Real World*. It is an Object of observation (perception), whereas the *Reference Object* is a topic of Communication.

29. Andersen (2005) speaks of the ‘plasticity’ of Universal Grammar and shows a distinction between the Universals of the Cognitive Mind of the infant and of his Communicative (Linguistic) Mind, where grammatical number is solely a potential.

community members.<sup>30</sup> The traded community language is thus likewise a (for instance, chronolectally) *variational* phenomenon.

When Coseriu (1983) claims that ‘linguistic change does not exist’, he understands ‘language’ as languaging – as *energeia*; and, of course, a unidirectional process cannot ‘change’ in itself insofar as it is not a thing – not an object: neither a natural organism nor an organ that could be transformed but a behavior. However, we have seen that a phase of this *energeia* is indeed *dynamis*: competences – finious targets – and these Conventions are the result of collective negotiations: Individual language users may, and do indeed, make innovations that are accepted by their linguistic *Social World* (D) and, by internalizing these accepted innovations, they individually change their Competences (Andersen 1973, 2006). However, there is no *supra-individual* ‘invisible hand’ to do the changing, only individual adoption of the innovations. So, seen from without, it is evident that languages do actually change – the historical languages and their histories, as cultural artifacts, are observed, described, and explained by the historical linguists (Andersen 2006). Here, the explanations could never be *efficient* causal explanations since a *historical* language is not a natural-physical phenomenon (Coseriu 1957) – what could and should be explained ‘naturalistically’ is HLF ( $G_{\circ}$ ).

There has been, continually throughout evolution, a feedback from the Phenotokens (individual linguistic competences,  $G_t/G_2$ ) to Phylogeny ( $G_{\circ}$ ) via the Genotokens ( $G_{\circ}$ ) which they instantiate (provided there may be feedback ‘mutation’ of the Genotoken ( $G_{\circ}$ ) by the Phenotoken ( $G_t/G_2$ )). The community dialect (Phenotype,  $G_{\tau}/G_3$ ) may solely function via getting operationalized ( $G_t/G_2$ ). Likewise, a second-order construal *lingua docens* ( $G_{\tau}^2$ ; e.g. written norms imposed by official language academies) (may) become internalized and thus have impact on the *lingua utens* ( $G_2$ ) of the language users.

The linguistic Practice of Language Gaming being intertwined with *Symppractice*, e.g. technological implementation (allo-poietic ‘texting’; writing, computer mediated communication), this may turn back on language evolution, in the long run, as when whole bodily communication was overlaid by a vocal and later on, alternatively, by a manual implementation.

The important break between the natural evolution of the genotype-language ( $G_{\circ}$ ) and the cultural development of the phenotype (Community of Practice) language ( $G_{\tau}$ ) – *Glossogeny* – is due to cultural tradition superimposed upon biological reproduction, what I call *Paideia-poiesis* in Thomsen (2019c.).

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30. Just like a string quartet, or any other cultural collective, may be said to be *essentially* the same (and have the same name) even though its membership (instantiation) may change and thus itself has changed in its *accidentals*. (This is *social autopoiesis*.)

## 6. Conclusion

In this contribution, I have placed Henning Andersen's theory of linguistic 'change' in its wider Peircean context of the ladder of the 'sciences', hypothesizing that languaging parallels Peirce's scientific model. Therefore, I have retroduced the steps of Peirce's scientific model as natural phases of *Total Human Evolutionary Cognition and Communication*. The ultimate step of this model is *Methodeutic*, and this corresponds to the level of *Tradition* in Language Gaming. It is focused on the Code, or linguistic *Convention*. The Convention is the *finious* endpoint of a never-ending process of *Conventionalization*, which is the linguistic counterpart of logical *Induction*. Thus, a series of preliminary Conventions (G3) are induced. These collective Conventions are *declarative* Grammars (types), which must be converted into individuals' *procedural* or operational Grammars (tokens, G2), to be operative in Language Gaming, on the levels of Communion and Practice. Two important processes in this evolutionary picture are thus, first, the process of the evolution of Language Gaming as a *cultural Tradition* on a biological foundation (*Paideia-poiesis*); second, the evolution of a process (*Idio-poiesis*) that converts the results of Induction, viz. the *declarative* Convention (G3), into *procedural* Grammars (G2) which are operative in Communion and Practice. From below, the abduced Grammar is merely a hypothesis (proposal, G1) that must also be made operative (G2) to be tested in Deduction (Communion and Practice), and thus again we need the proposed *Idio-poietic* process. It turned out that the logical inference types of the *methodeutic* level are operative on all three levels of Language Gaming, and here Induction concerns the *confirmation* of the communicative Contact and the establishment of communicative networks (Communion), the progression and negotiation of *conversation* (Practice), and, as just mentioned, the *Conventionalization* of the Code (Tradition). This is evidence that the three kinds of logical syllogism are deeper rooted than in methodeutics. I take it that they are inherited and thus belong to the deepest level of Total Human Evolutionary Cognition and Communication, viz. the Background level of natural capacities (Stage I in Section 1 above).

Saying that 'language acquisition and change' is a bio-cultural hybrid (going back to *Mimetic Signaling* and *Sign Playing*), means that not only the Chomskyan theory of biological language growth (lacking a concept of methodeutics and cultural tradition) but also empiricist theories (lacking a concept of methodeutics and language universals, sticking to general intelligence) must be dismissed. The only viable (Golden Middle) way is the one that our jubilee has paved for us with his abductive-deductive theory of language acquisition and change – complemented, as here, with *Induction*.

## As time goes by: For HA

It is an honor to have the opportunity to pay a tribute to you, Henning. The inspiration that you have given me throughout the more than 35 years is now hereby officially and heartfully acknowledged with my present contribution! Many happy returns! – Play it again!

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# Approaching the typology and diachrony of morphological reversals

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Inverse marking in inflectional morphology represents a particular type of mismatch between morphological form and syntactic or semantic function. This kind of morpheme interchange has been found in several languages thus far, but it is not usually included in morphological studies. There have been significant advances in recent times regarding the synchronic description and theoretical assessment of morphological reversals, but the diachronic treatment of this set of phenomena is at most in its incipient stage. Despite the overall scarcity of historical data on the rise of inverse marking patterns, there is, nonetheless, a certain amount of evidence that allows for an understanding of the dynamics of morphological polarity in a diachronic perspective. This paper first provides a revised typology of morphological reversals and then examines two processes of change leading to the appearance of inverse encoding patterns in two inflectional systems (declensional paradigms in Old French and the feature of number in Upper Sorbian). Although differing in important respects (such as the extent to which they can be considered reversals), both innovations demonstrate some of the motives, mechanisms, and functional principles underlying the emergence of inverse marking patterns in inflectional morphology.

**Keywords:** morphological reversal, polarity, marking inversion, inflectional classes, morphological change, analogy, markedness, economy, ambiguity

## 1. Introduction<sup>1</sup>

Although not entirely unknown, marking inversion or reversal cannot be claimed to be a widespread linguistic phenomenon. Its presence is seldom discussed or

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1. This article, centered around some of Henning Andersen's beloved topics (such as morphological change, economy of markedness, reanalysis, and analogy), is part of a research project funded by the Spanish Ministry of the Economy and Competitiveness (FFI2014-57260-P). Work on it has also been supported by the research group on historical linguistics (IT 698-13), funded

even mentioned, for example, in general works on morphology. According to a very reasonable definition (Baerman 2007:33), “morphological reversal describes the situation where the members of a morphological opposition switch their functions in some context”. In Baerman, Brown & Corbett (2005: 104), reversals were defined as “complementary distributions of inflectional markers in such a way that syncretism constitutes itself in mirror-image identity of non-contiguous paradigmatic cells”. An apparently simple example is provided by Somali definite articles, illustrated in Table 1 (from Saeed 1999: 112 and Nilsson 2016:464):

**Table 1.** Somali definite (non-remote) article

	SG	PL
MASCULINE	<i>-ka</i>	<i>-ta</i>
FEMININE	<i>-ta</i>	<i>-ka</i>

In Somali articles, singular and plural markers appear to be interchanged in the masculine and feminine genders. To put it in a somewhat simplified manner, the morpheme *-ka* is attached to masculine nouns in the singular, but to feminine nouns in the plural, while the morpheme *-ta* marks the feminine gender in the singular, but the masculine in the plural. This would be a case of morphological reversal (also known as ‘polarity’ of exponents), at least according to some descriptions (Serzisko 1982: 185; Lahne 2007: 2; Nilsson 2016: 463–464).<sup>2</sup>

In the last few years several authors have pursued the task of describing and explaining cases of marking inversion in different languages (Corbett 2000: 159–166; Baerman 2007; Lahne 2007; Trommer 2008; Wunderlich 2012). These contributions have noticeably expanded our knowledge of this kind of encoding, adding new data and insights to previous works, such as those by Speiser (1938), Smith (1979) and Weigel (1993).

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by the Basque Government. I thank Jan Terje Faarlund, Martin Maiden, and Lene Schøsler for useful suggestions on an earlier draft of this paper. They have allowed me to improve several aspects of it. I am also grateful to Borja Herce and Cameron Watson for linguistic and editorial assistance. The following abbreviations are used throughout the paper: ACC accusative, ALL allative, DAT dative, DU dual, F feminine, FUT future, GEN genitive, M masculine, NOM nominative, OBL oblique, PART partitive, PFV perfective, PIE Proto-Indo-European, PL plural, and SG singular.

2. The structure of gender and number marking in the Somali definite article might be slightly more complicated than the schema in Table 1 may suggest. Lecarme (2002: 112ff.), for example, argues that the plural is a derivational category and that it instantiates its own gender. In addition, some Somali nouns have more than one plural definite form. For these reasons, the gender-number interaction in Somali has been considered an instance of apparent polarity, a surface phenomenon that manifests itself only in some classes of the vocabulary (see also Wunderlich 2012: 180, 183).

In any event, research so far has mainly concentrated on synchronic and theoretical aspects of marking inversion, leaving aside diachronic issues about the origin and development of inverted patterns of grammatical encoding. One of the few approaches that have taken into account historical issues is that of Baerman (2007), who discusses in detail the evolution of grammatical role relations in Amadiya (Northeastern Neo-Aramaic). In the face of this situation, the present contribution aims to extend the diachronic approach to the study of marking inversion patterns in order to obtain a more comprehensive understanding of the mechanisms and reasons behind this particular type of grammatical relationship. I will illustrate the emergence of inverse marking patterns with examples from the inflectional morphology of Old French (Romance) and Upper Sorbian (Slavic). But prior to the diachronic analysis of these cases of morphological reversal and quasi-reversal, respectively (Section 3 of this article), a brief discussion of the main descriptive and typological questions concerning marking inversion is in order (Section 2). Then, Section 4 will revolve around the economy of inverse marking patterns and the role of morphological ambiguity, on the basis of both synchronic and diachronic evidence. Finally, in Section 5 the main conclusions will be drawn.

## 2. Typology of inverted morphological relations

### 2.1 Types of inversion

An inversion in the ordering of the elements of a word-form or a phrase may convey differences in content, as the following examples demonstrate: in Albanian, the plain or simple perfect for 'I have been' is *kam qenë*, whereas the present admirative derives from an inverted perfect with a truncated participle (i.e. with the present forms of the verb *ka* 'have' appended to the stem of the participle): *qenkam* 'Oh, I am' (see Friedman 1986: 180, 2010: 31); in Russian, *čelovék pjat'* 'about five people' or *časá čerez dva* 'in about two hours' differ from *pjat' čelovék* 'five people' and *čerez dva časá* 'in (exactly) two hours' in that they express a sense of indefiniteness or uncertainty (see Timberlake 2004: 191).

This same phenomenon of variable ordering can be observed in the affixal morphology, whether accompanied or not by semantic differences. In the Uralic language Zyrian, the ordering of affixes can be different, as in (1), but this has no repercussion on meaning (Moravcsik 2013: 138):

- (1) Affix order variation in Zyrian (Uralic)
  - a. *kerka-nim-laň*  
house-to-our

- b. *kerka-lañ-nim*  
 house-our-to  
 ‘to our house’

Both *kerka-nim-lañ* and *kerka-lañ-nim* mean ‘to our house’ in Zyrian. Thus, suffix order does not affect meaning in these cases. But in other languages this variation can affect the semantic structure of word-forms, as the following examples from Turkish (2) illustrate:

- (2) Affix order variation in Turkish
- a. *kardeş-ler-im*  
 brother-PL-my  
 ‘my brothers’
- b. *kardeş-im-ler*  
 brother-my-PL  
 ‘my brother and his family’

In Turkish, we obtain a normal possessive plural in *kardeş-ler-im* ‘my brothers’ (with the plural suffix and then the possessive mark) and an associative plural in *kardeş-im-ler* ‘my brother and his family’ (with identical suffixes, but in the reverse order).

Marking inversion can be syntagmatic (as the examples above demonstrate) as well as paradigmatic. In the remainder of this article I discuss only cases of paradigmatic morphological inversion. One extended use of the term marking inversion refers to a certain type of morphosyntactic construction, in which the difference in animacy between subjects and objects is reflected in the direct vs. inverse type of verbal constructions. There are a number of well-known examples mainly from the Algonquian group of languages of North America (Menominee, Ojibwe, and Plains Cree, among others). Here, however, I will not address this particular kind of marking inversion. Different types of phonological and even morphophonological polarity effects (as summarized in Trommer 2008, though the boundary between morphological and morphophonological reversals is not always easy to establish) are also beyond the scope of the present article.

One of the examples of reversal often cited is Hebrew gender marking, in which the formal difference between  $-\emptyset$  and  $-a$  marks masculine-feminine opposition with adjectives but the reverse, feminine-masculine, with numerals, as in (3):

- (3) Hebrew gender marking
- a. *davar- $\emptyset$  tov- $\emptyset$*   
 word(M)-SG good-M  
 ‘good word’

- b. *tmun-a tov-a*  
 picture(F)-SG good-F  
 ‘good picture’
- c. *šloš-a dvar-im*  
 three-M word(M)-PL  
 ‘three words’
- d. *šaloš-Ø tmun-ot*  
 three-F picture(F)-PL  
 ‘three pictures’

In contrast to *davar tov* ‘good word’, the feminine form of the adjective takes an overt ending (*tmuna tova* ‘good picture’). But when numerals are involved in agreement, it is the masculine gender that takes the overt ending *-a* (*šloš-a dvar-im* vs. *šaloš-Ø tmun-ot*). We should observe here that the reversal of inflectional formatives is conditioned in Hebrew by a categorial or lexical alternation (adjective/numeral), which could be regarded as not quite typical for morphological polarity (see Trommer 2008).

Other examples are not subject to this categoricity problem, i.e. whether reversals can cross-cut lexical categories or not. In the following Spanish example (see Table 2), which exhibits a stem-vowel alternation in the first conjugation to express mood (*amamos, amemos*) that is reversed in the second and third conjugations, the reversal does not exceed the limits of a single lexical category (Wunderlich 2012: 186):

Table 2. Spanish mood

	1st CONJUGATION	2nd-3rd CONJUGATION
PRES. INDICATIVE	<i>am-a-mos</i>	<i>tem-e-mos</i>
PRES. SUBJUNCTIVE	<i>am-e-mos</i> ‘we love’	<i>tem-a-mos</i> ‘we fear’

This morphological situation is the consequence of certain phonological changes in Proto-Romance, since this inversion marking pattern was absent in Latin: cf. *am-ā-mus / am-ē-mus* vs. *tim-ē-mus / tim-eā-mus*. The distribution of markers in Latin was at most reminiscent of the properties characterizing quasi-reversals (see Section 2.3 below).

Structurally similar, but affecting tense/aspect meanings, is the reversal that can be found in Kham, a Sino-Tibetan language spoken in Nepal. In declarative sentences the suffix *-ke* expresses perfective past, whereas the suffix *-ya* signals future (in the Takale dialect). These tense values are reversed in interrogative sentences (Watters 2002: 274; see the examples in (4)):



- (4) Kham tense switching
- a. *u-zihm-da ba-ke*  
3SG-house-ALL go-PFV  
'he went home'
  - b. *u-zihm-da ba-ya*  
3SG-house-ALL go-FUT  
'he might go home'
  - c. *kana ba-ke*  
where go-FUT  
'where will he go?'
  - d. *kana ba-ya*  
where go-PFV  
'where did he go?'

The potential communicative difficulties associated with such a reversal can be overcome in the context of a normal speech situation, because, as pointed out by Watters (2002: 98), "there are pragmatic factors which help disambiguate between the possible senses". This is fully in line with the idea that in normal situations of language use "non-linguistic information usually suffices to disambiguate" (cf. Wasow, Perfors & Beaver 2005: 273). On the role of morphological ambiguity in natural languages, see Section 4 below.

From a general typological perspective, morphological reversals (other instances will be presented below) are very far from the ideal type of a one-to-one correspondence between meaning and form. They do not represent the only deviation, though. As summarized by Carstairs (1987: 14–17), there are at least four types of deviation from the inflectional canon (in Table 3 expressions such as "one-to-many" are understood to be referring to a mapping from morphosyntax to phonology):

**Table 3.** Deviations from one-to-one correspondence between meaning and form in inflectional morphology (adapted from Carstairs 1987: 14–17)

Deviation I:	one-to-many syntagmatic	multiple exponence
Deviation II:	one-to-many paradigmatic	allomorphy
Deviation III:	many-to-one syntagmatic	cumulative exponence
Deviation IV:	many-to-one paradigmatic	homonymy/syncretism

In this context of otherwise frequently attested deviations (see also Matthews 1972: 72ff.), marker inversion or reversal may be thought of as a kind of dual or symmetrical syncretism, in which forms and values are switched in a kind of mirror-image schema (recall the definition by Baerman, Brown & Corbett [2005: 104] referred to above). This inflectional situation is very far from the so-called inflectional canon, as defined, for example, by Corbett in a series of recent

works (see, for example, Corbett 2012: 197–198). Thus, it seems as if naturalness principles such as biuniqueness, constructional iconicity, or uniform encoding (Wurzel 1989, Dressler 2003) are of little help to account for a phenomenon that is apparently not very natural (and, in any case, far from the inflectional canon).

Instead of a one-to-one relation between form and meaning, morphological reversals present a contextually conditioned use of exponents for the expression of morphosyntactic categories. In Table 4 the structure of morphological reversals is graphically represented (following Hetzron 1967: 184, *apud* Baerman 2007: 35 and Wunderlich 2012: 160).

**Table 4.** Structure of morphological reversals

	CONTEXT 1	CONTEXT 2
CATEGORY X	exponent A	exponent B
CATEGORY Y	exponent B	exponent A

Category X is realized by exponent A in context 1, whereas category Y is realized by exponent B in this same context. But when the context changes, exponent values are reversed for the expression of the same categories. In this fashion, polarity can be viewed as “a rather extreme case of polyfunctionality” (Enger 2005: 29).

As with suppletion, morphological reversal may also be described as a ‘scandal’ for theories of morphological naturalness (this is how suppletion was once referred to, see Dressler 1985: 97; also Corbett 2007: 9), because it deeply deviates from conventional rules that characterize inflectional morphology. This might be the reason for the unease with which reversals are usually treated, if at all, in grammatical descriptions. But, as recent research has tried to demonstrate (Enger 2005; Lahne 2007), reversals can also be well motivated on morphological and even functional grounds (see Section 4 below).

Along with the examples cited so far, inverse marking patterns have been identified in several systems, and although the following list does not exhaust the attested cases, it can be considered quite representative of our present knowledge, which comprises different types – not only purely morphological – of reversals (cf. Smith 1979; Weigel 1993; Enger 2005; Baerman 2007; Lahne 2007; Trommer 2008; and Wunderlich 2012): number marking in Kiowa (Tanoan), Estonian partitive endings (Uralic), Old French nominal declension (Romance, IE), Nehan definite articles (Oceanic), verbal number marking in 2nd person in Labrador Inuttut (Eskimo-Aleut), aspect marking in Tübatulabal (Uto-Aztecan), number marking in Dagaare (Niger-Congo), tense-aspect-mood in Copala Trique (Mixtecan), voicing reversal in number marking in Dholuo (Nilotic), length reversal in number marking in Dinka (Nilotic), noun inflection in the Toten and Tromsø dialects

of Norwegian, grammatical role (subject-object) in Northeastern Neo-Aramaic (Amadiya, Semitic), and tense switching in Kham (Sino-Tibetan).

The evidence at our disposal allows us to contend that not all morphological reversals are of the same kind. Depending on the extent to which a marker reversal can affect morphological paradigms, we can divide morphological phenomena consisting of some kind of reversal into several classes. We can thus distinguish full or systematic reversals from partial or accidental reversals (as in Baerman 2007 and Lahne 2007). Apart from these two main types, I suggest using the notion of ‘quasi-reversal’ for those cases in which all the conditions for reversals are not met, but there is still some kind of marker inversion.

## 2.2 Full morphological reversals

Systematic or full reversals represent a pervasive and regular phenomenon within the paradigms involved (which means that no exceptions or alternative strategies are available in the system). Accidental or partial reversals in turn affect only part of paradigms and thus compete with other encoding strategies, as we will see below. Finally, quasi-reversals would imply an inversion that operates only in one direction (accordingly, they would fail to qualify as full-fledged or complete reversals, whether partial or full).<sup>3</sup>

From the list of languages containing some kind of marker inversion, Labrador Inuttut and Kiowa are said to provide rather clear examples of full reversals. In Labrador Inuttut, according to Smith (1979: 153–155), number markers in indicative as well as subjunctive verbal forms are reversed in the second person (see Table 5).

**Table 5.** Intransitive verb marking in Labrador Inuttut

	1st AND 3rd PERSONS	2nd PERSON
SINGULAR	-Ø	- <i>t</i>
DUAL	- <i>k</i>	- <i>k</i>
PLURAL	- <i>t</i>	-Ø

While the dual ending remains constant across different person forms, the singular and plural markers are reversed (*-t* and -Ø), in what appears to be a regular

3. This classification is based, as pointed out above, on the scope of morphological polarity within paradigms. A complete typology of reversals should probably take into account other criteria, such as the features concerned and the intraparadigmatic or interparadigmatic nature of the reversal, but this analysis is not among the purposes of the present work.

inversion phenomenon throughout the intransitive paradigm (and also some of the transitive forms). Smith (1979: 160) invokes markedness reasons to account for the special place occupied by the second person in the Labrador Inuttut verb. According to his explanation, the second person was unmarked (more expected, more frequent) in the plural, hence its zero encoding, as opposed to the first and third persons, which have overt marking in the plural and zero marking in the singular (for local markedness effects, see Tiersma 1982). This line of reasoning will be taken up in Section 4 below.

In Kiowa,<sup>4</sup> which shows a striking number system that has called the attention of linguists since at least the mid-twentieth century, a single suffix *-gɔ* (with an extensive phonologically conditioned allomorphy) changes the underlying number marking of the different noun classes, as shown in Table 6:

**Table 6.** Kiowa inverse suffix ([·] marks long vowels)

NOUN CLASS	INVERSE AFFIX		INVERTED OUTPUT
I 'cow' [cenbó·] <sub>sg, du</sub>	+ gɔ	→	[cenbó·gɔ] <sub>pl</sub>
II 'bone' [tʰó·sè] <sub>du, pl</sub>	+ gɔ	→	[tʰó·sègɔ] <sub>sg</sub>
III 'apple' [álɔ·] <sub>du</sub>	+ gɔ	→	[álɔ·gɔ] <sub>sg, pl</sub>

The Kiowa suffix *-gɔ* is described as an inverse number marker, that is, it inverts the basic number to the values not implicit in the stem. Thus, this suffix changes the singular/dual of class I nouns (like 'cow') to plural, and the dual/plural basic number of class II nouns (like 'bone') to singular (Wonderly, Gibson & Kirk 1954: 3). Meanwhile, the third class changes from dual to singular-plural. As Weigel (1993: 468) puts it, the suffix "toggles or switches underlying number marking" (other languages, such as Dagaare, a Gur (Niger-Congo) language spoken in Ghana and Burkina Faso, display a similar inverse number system, see Grimm 2012). There is a fourth noun class in Kiowa that seems to have an indifferent basic number (singular/dual/plural). It has only one form and does not take the inverse suffix (the semantic differences are reflected in verbal agreement, in which each value has its own prefix, cf. Merrifield 1959: 270). For a recent treatment of Kiowa facts, see Harbour (2008, 2011) and Wunderlich (2012: 177–179).

A simpler example of morphological reversal is found in the Toten dialect of Norwegian. In the noun inflection, the nominative and dative definite singular forms display morphological polarity: as represented in Table 7, the nominative singular morpheme for masculine nouns is identical to the dative singular for

4. With some differences, the Kiowa-Tanoan language Jemez also presents comparable patterns of inverse number marking.

feminines and the reverse is true for the feminine nominative singular and the masculine dative singular (Enger 2005: 30–31):

**Table 7.** Noun inflection in Toten Norwegian (definite declension)

	NOM.SG	DAT.SG
MASCULINE	<i>båt-en</i> 'the boat'	<i>båt-a</i>
FEMININE	<i>øks-a</i> 'the axe'	<i>øks-en</i>

There is also full polarity in the Tromsø dialect of Norwegian, but affecting in this case the relationship between the singular and the plural of the indefinite declension of nouns (Enger 2005: 35).

Other clear instances of full reversals come from some Oceanic languages spoken in southern New Ireland and northern Bougainville (Papua New Guinea). In Nehan, for example, the articles *a* and *o*, which express different genders, signal singularity for some nouns and plurality for others (Ross 1988: 299, 301; Corbett 2000: 163–164), as illustrated in (5):

- (5) Nehan articles
- a. *a um[a]*  
ART house  
'a/the house'
  - o um[a]*  
ART house  
'some/the houses'
  - b. *o dok[i]*  
ART tree  
'a tree, a stick'
  - a dok[i]*  
ART tree  
'a collection of trees'

Likewise, Teop, another language from northern Bougainville, has two main genders or agreement classes (even if the first of them may be split into two subclasses, gender I-E and gender I-A, reflecting the fact that the articles of the head nouns may have two different markers: *e* and *a*, respectively; see Mosel & Spriggs 2000: 322). Gender I and gender II show straightforward polarity on targets, which also holds for gender I-A and gender II in the case of head noun articles (see Table 8):

Table 8. Teop gender markers

	HEAD	HEAD	TARGET	TARGET
	SG	PL	SG	PL
GENDER I-E	<i>e</i>	<i>a</i>	<i>a</i>	<i>o</i>
GENDER I-A	<i>a</i>	<i>o</i>	<i>a</i>	<i>o</i>
GENDER II	<i>o</i>	<i>a</i>	<i>o</i>	<i>a</i>

Leaving aside the defective fourth noun class in Kiowa and some irregularities in the transitive paradigms of Labrador Inuttut, these examples appear to represent cases of full morphological reversal. All the paradigms or inflectional classes concerned are subject in general to this kind of morphological relation.

### 2.3 Partial morphological reversals

In contrast to the aforementioned cases of full morphological reversal, reversals that do not influence entire morphological subsystems can be called partial or accidental reversals. Two languages that exhibit this kind of reversal are Estonian and Dholuo (or Luo).

In the Estonian noun declension, some partitive forms reveal an inverted use of the endings *-i* and *-e* (Blevins 2005: 12). In the noun for ‘school’ we find *-i* in the partitive singular and *-e* in the partitive plural, but in the case of ‘rooster’ the reverse is true (see Table 9):

Table 9. Estonian partitive endings (part 1)

	PART.SG	PART.PL
‘school’	<i>kool-i</i>	<i>kool-e</i>
‘rooster’	<i>kukk-e</i>	<i>kukk-i</i>

However, in other nouns (see Table 10), the opposition between the singular and the plural is expressed by different means, as in the nouns for ‘lock’ and ‘lip’, in which *-e* and *-i* contrast with other endings.

Table 10. Estonian partitive endings (part 2)

	PART.SG	PART.PL
‘lock’	<i>lukk-u</i>	<i>lukk-e</i>
‘lip’	<i>mokk-a</i>	<i>mokk-i</i>

We find another instance of partial reversal in Dholuo, a Nilotic language spoken in Kenya and Tanzania. In this language, the formal opposition between the singular and the plural is mainly expressed through a voicing reversal (see Table 11; transcription according to Baerman 2007: 36–38).

Table 11. Dholuo voicing reversal (part 1)

	SG	PL
'stone'	<i>kidi</i>	<i>kite</i>
'bone'	<i>cogo</i>	<i>coke</i>
'coat'	<i>koti</i>	<i>kode</i>
'chest'	<i>agoko</i>	<i>agoge</i>

This contrast has traditionally been captured in terms of an exchange rule ( $\alpha$ Voice >  $-\alpha$ Voice/plural in *-e* or *-i*), that, nevertheless, is not phonologically or morphologically straightforward, as long as voicing of voiceless items (unlike devoicing of voiced items) seems to be lexically specified (Baerman 2007: 57). In any event, there is a second set of examples (see Table 12), in which there is no voicing in the plural:

Table 12. Dholuo voicing reversal (part 2)

	SG	PL
'neck'	<i>nut</i>	<i>nute</i>
'tooth'	<i>lak</i>	<i>leke</i>
'tail'	<i>ip</i>	<i>ipe</i>

In addition, Dholuo has another plural ending, *-ni*, which precludes consonant alternation (sg *higa* 'year, season', pl *hike* or *higni*) and this suffix seems to be available for a large number of nouns. Thus, if Dholuo has a morphological or morphological reversal in its nominal system (an interpretation explicitly rejected, though, by de Lacy 2012), it should be necessarily defined as a partial type of reversal.

## 2.4 Morphological quasi-reversals

Finally, the last member in our typology of morphological reversals (the quasi-reversals) is represented by Upper Sorbian, Slovene, and probably also by Latin. In Upper Sorbian (a Slavic language spoken in southeastern Germany, near Cottbus and Bautzen), the feature of number has three values: singular, dual, and plural. Dual is used in Upper Sorbian for common dual reference, but only in occasional or random pairings of objects. When natural pairs are referred to (a kind of

reference usually called ‘paral’ or ‘ambal’), they take plural markers (see Table 13). As Šewc-Schuster (1984: 64) observes, “the form of the dual is not used especially with nouns that refer to paired objects” (my translation, *l.l.*).

**Table 13.** Paral and dual markers in Upper Sorbian

PARAL (= PLURAL)	COMMON DUAL
<i>ruk-i</i> ‘(two) hands’	<i>ruc-e</i> (F) ‘two hands’
<i>noh-i</i> ‘(two) legs’	<i>noz-e</i> (F) ‘two legs’
<i>roh-i</i> ‘(two) horns’	<i>roh-aj</i> (M) ‘two horns’

Dual morphology is thus replaced by plural morphology for paral reference (a dual meaning in nature), whereas plural morphology remains intact for plural reference, i.e. the plural paradigm is not replaced by dual forms.<sup>5</sup> This is an instance of what can be termed quasi-reversal, a kind of inversion marking that operates only in one direction (the conditions and mechanisms underlying this innovation in Upper Sorbian will be discussed in Section 3).

In Slovene, another Slavic language, the same replacement occurs. According to Priestly (1993: 440–441), plural forms are used for dual body parts when these are not accompanied by explicit quantifiers (‘two’ or ‘both’), see the contrast in (6).<sup>6</sup>

- (6) Dual and plural in Slovene
- a. *obê nógi me bolíta*  
both leg.DU me hurt.3DU  
‘both my feet hurt’
  - b. *nóge me bolíjo*  
leg.PL me hurt.3PL  
‘my feet hurt’

A similar situation can be identified in cases of deponency (Baerman 2007: 58–59). Latin deponent verbs, for example, exhibit passive morphology but active function, whereas there are no corresponding verbs with the form of actives and the function of passives. As in the Upper Sorbian case, there is no complete reversal

5. The inflectional difference between the dual and the plural is accompanied by an allomorphic alternation in the feminine stems due to the second Slavic palatalization of velars.

6. Plungian (2010: 94) reports that Koryak (a Chukotko-Kamchatkan language spoken by about 1,700 people in the easternmost extremity of Siberia) also shows this phenomenon, but I have not been able to find any examples in the reference grammar by Žukova (nor in other works). It rather seems that the use of plural forms for body parts that come in pairs signals not just one pair, but a greater amount (Žukova 1972: 128): cf. *myng-o* ‘many (pairs) of hands’ vs. *myng-yt* ‘(one) pair of hands, (two) hands’.



involved here, as long as the mismatch between morphological form and morpho-syntactic value is unidirectional. The diachronic relevance of quasi-reversals derives from their potential development into complete reversals at some stage of evolution (see Baerman [2007: 56] for the analysis of historical changes in Northeastern Neo-Aramaic).

## 2.5 Summary

After this necessarily brief overview of different instances of inverted morphological relationship, the typology of inverse marking patterns in inflectional morphology can be summarized as in Table 14:

**Table 14.** Typology of reversals

FULL REVERSALS	PARTIAL REVERSALS	QUASI-REVERSALS
Labrador Inuttut	Estonian	Upper Sorbian
Kiowa	Dholuo (Luo)	Slovene
Nehan, Teop		Latin
Toten Norwegian		

Overall, there is not much evidence on the history and evolution of morphological reversals. The information available points to processes of analogy that extend patterns of accidental or partial reversal to entire inflectional subsystems. But the scarcity of diachronic evidence can be somehow compensated by the information provided by other morphological phenomena that, not being complete reversals, are apparently close to them. Here, they have been called quasi-reversals, that is, a kind of marker switch that fails to reach the stage where the paradigm found in context 2 constitutes the mirror image of the paradigm found in context 1 (unlike the majority of inversion phenomena referred to above). Quasi-reversals can also give us interesting hints about the dynamics of marker inversion. All these issues constitute the topic of the next section.

## 3. Lessons from diachrony: Accounting for the rise of reversals

The diachronic part of this article is devoted to examining the evolution of two inverse marking patterns of which we have some historical evidence. The first one comes from the history of nominal declension paradigms in Old French. This particularly telling instance of partial reversal will be analyzed in Section 3.1. The second case has to do with the diachronic process of replacement of dual by plural

forms in Upper Sorbian in certain contexts, an example of quasi-reversal that also provides valuable insights into the dynamics of inverse marking patterns. Certain aspects of the diachrony of this innovation, which entails a process of specific encoding of the paral reference, are paralleled by the independent history of some dual formations in Old Russian. Both these cases will be discussed in Section 3.2.

### 3.1 Old French declensional classes

The system of Latin noun declension was reduced in the Late Latin period to three inflectional macroclasses, once the fourth and the fifth declensions of the classical descriptions were absorbed by other, more productive models (mainly the second and the first declensions, respectively). There were also some paradigmatic shifts to the third declension (see Grandgent 1962: 148; Gaeng 1984: 95).

Subsequently, the vast majority of Romance languages lost not only nominal allomorphy, but also the noun inflectional system altogether. Only Romanian as well as some Swiss Romance varieties (Schøsler 2013: 168) and, among the old Romance languages, Old French and Old Occitan, retained some traces of the original morphological situation. In Old French (as well as in Old Occitan), a bicasual structure arose that was built on a single opposition between a subject case (nominative) and an object case (oblique), mainly originating in the Latin accusative form. The nominal system in Old French also retained an allomorphic distinction of declensional classes, with three main types and several subtypes, and two genders, masculine and feminine (Dardel & Gaeng 1992: 105). One of the masculine declensional subclasses displayed a formal structure characteristic of morphological reversals (see Table 15a), while the other subclasses (15b and 15c) did not share this internal structure:

**Table 15.** Old French inflectional paradigms

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a.	First masculine subclass ( <i>murs</i> ‘wall’)			
	NOM.SG	<i>murs</i>	NOM.PL	<i>mur</i>
	OBL.SG	<i>mur</i>	OBL.PL	<i>murs</i>
b.	Second masculine subclass ( <i>pedre, pere</i> ‘father’)			
	NOM.SG	<i>pedre</i>	NOM.PL	<i>pedre</i>
	OBL.SG	<i>pedre</i>	OBL.PL	<i>pedres</i>
c.	Third masculine subclass ( <i>uem/on</i> ‘man’)			
	NOM.SG	<i>uem/on</i>	NOM.PL	<i>ome</i>
	OBL.SG	<i>ome</i>	OBL.PL	<i>omes</i>

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The diachronic reason behind this declensional difference is to be sought in the inflectional properties of these classes in Late Latin. Nouns like *murs* or *filz* ‘son’

come from the second Latin declension, in which masculines had *-s* as their nominative singular ending (and *-ōs* as accusative plural), while the other declensional classes were characterized by a zero morph in the nominative singular. Subsequent phonological changes (reductions of unstressed desinential vowels) led to the formal coalescence of the nominative singular and accusative plural, on the one hand, and to the merger of the accusative singular (formerly in *-m*) and the nominative plural (formerly in *-ī*) in masculines like *murs*, on the other. This development is represented in Table 16 (see also Plank 1979: 625; Wunderlich 2012: 189). But in other classes there was no previous condition enabling the appearance of such an inverse marking pattern. Apart from that, in the third masculine declension the rise of a stem alternation (like that in *uem/on* vs. *ome*, *omes*, in *sire* vs. *seignor* ‘lord’ and even in *gars* vs. *garçon* ‘boy’) introduced additional complexity into the paradigm (note, in addition, that this third masculine subclass, traditionally known as the imparisyllabic declension, shows an inflectional pattern characteristic of quasi-reversals, as defined in this article).

Table 16. Development of Latin 2nd declension masculine nouns in Old French

LATIN		>	OLD FRENCH	
NOM.SG <i>mūrus</i>	NOM.PL <i>mūrī</i>		NOM.SG <i>murs</i>	NOM.PL <i>mur</i>
ACC.SG <i>mūrum</i>	ACC.PL <i>mūrōs</i>		OBL.SG <i>mur</i>	OBL.PL <i>murs</i>

As Table 16 shows, the morphological reversal present in the inflectional paradigm of the first masculine inflectional subclass – the most comprehensive in this gender (Plank 1979: 626) – emerged as a direct consequence of phonological development. But what makes the Old French evidence particularly interesting is the subsequent evolution of the second masculine declension (Table 15b) and of a particular subgroup of the Latin first declension comprising such nouns as *propheta* ‘prophet’, *poeta* ‘poet’, *scriba* ‘scribe’, and *eremita* ‘hermit’, i.e. masculine nouns with a predominantly feminine morphology. Both these nominal groups joined the Old French first masculine class through an analogical process of morphological change. The second (and also the third) masculine subclass was already reshaped as far as the nominative plural is concerned: the primitive ending *-es* of this case was lost due not to phonological causes, but to analogy with the first declension (Late Latin *patres* > *pedres* → *pedre/pere* or, as hypothesized already by Mohl [1899: 209], *patres* → \**patri* > *pedre/pere*). The next step towards the complete morphological reshaping of the second masculine subclass was the extension of the ending *-s* to the nominative singular in some Old French varieties (others retained the form without *-s*), giving rise to the new paradigm in Table 17:

Table 17. Old French second declension reshaped (*pedres*, *peres* ‘father’)

NOM.SG	<i>pedre(s)</i>	NOM.PL	<i>pedre</i>
OBL.SG	<i>pedre</i>	OBL.PL	<i>pedres</i>

Likewise, nouns like *propheta* were subject to the analogical pressure exerted by the most productive declension class. In this case, the formal reorganization of the paradigm responded also to a marked tendency in Late Latin to “synchronize natural and grammatical gender” (Plank 1979: 628): *propheta*, *poeta*, *scriba*, and *eremita*, though masculine, were characterized in Latin by predominantly feminine case forms. This mismatch was resolved in Old French by reshaping the paradigms of this subgroup of nouns in accordance with the structure of first declension masculines (see Table 18):<sup>7</sup>

Table 18. Old French innovated paradigm of *prophete(s)* ‘prophet’

NOM.SG	<i>prophete(s)</i>	NOM.PL	<i>prophete</i>
OBL.SG	<i>prophete</i>	OBL.PL	<i>prophetes</i>

Both these analogical innovations demonstrate that the morphological reversal that emerged as a consequence of mainly phonological developments in the first subclass of masculine nouns could extend throughout the declensional system on purely morphological grounds. Even if the origin of the inverse marking pattern in nouns like *murs* or *filz* was somehow extramorphological and even contradicted, at least seemingly, the principles of morphological naturalness (briefly referred to in Section 2.1 above), this inflectional polarity was not subject, as far as we know, to immediate replacement. On the contrary, far from undergoing a ‘remedial’ innovation (Andersen’s [1980: 10] term), it was even generalized within certain limits. Thus, this Old French example proves that a morphological reversal may be or come to be well rooted in the grammatical and functional structure of a language (for a critical assessment of this perspective, see now Kihm 2017: 56–58), as a morphological device based on an economical use of minimal formal inventory to target a certain degree of morphosyntactic ambiguity (see Section 4 below).

7. This analogical change is mirrored in the history of several Slavic languages by a similar process whereby masculine nouns belonging to the old \**ā*-stem declension have adopted (fully or partially) the inflectional morphology of other masculines: thus, in Czech and Slovak the DAT.SG *sluhovi*, from *sluha* ‘servant’, contrasts with the former *sluhe* or *sluge* (which is preserved in other Slavic languages like Russian); cf. also Polish NOM.PL *poetowie* ‘poets’, GEN.PL *poetów*, with characteristically masculine endings instead of the former \**ā*-declension suffixes (Bräuer 1969: 118; similar shifts took place in Slovene, cf. Nahtigal 1961: 172).

### 3.2 The expression of paral reference in Upper Sorbian

Dual reference (including natural pairs as well as occasional duals) was expressed in old Slavic languages by dedicated dual exponents. Unsurprisingly, languages such as Old Church Slavonic or Old Russian/Old East Slavic had dual formatives for dual reference and, correspondingly, plural formatives for plural reference. The subsequent loss of the dual category in the majority of Slavic languages (except for Slovene and both the Upper and Lower Sorbian languages) reduced the opposition of number to only two members.

In Upper Sorbian (and, to a lesser extent, in Lower Sorbian), a change led to an unexpected distribution of dual and plural markers whereby dual reference in natural pairs (mainly body parts) began to be marked by the plural (and not the dual), the use of dual formatives being reserved for occasional pairings of nouns. Thus, in natural pairs we find plural morphology (instead of the expected dual forms), whereas in plural reference there is no change (a full reversal would require here the improbable use of dual forms). This morphological situation has been illustrated in Table 13 above.

This tendency to replace the dual morphology by plural forms is attested already in the first Sorbian texts. In Miklawuš Jakubica's translation of the New Testament (from 1548), which roughly reflects the structure of transitional dialects between Lower Sorbian and Upper Sorbian, the genitive dual is commonly marked by *-owu*, while in the case of natural pairs this form is expressed by *-ow* or  $\emptyset$ , i.e. the corresponding plural forms (*plunu iomu do woczow* 'he spat at his eyes', Mk. 8, 23; *twohih ruk* 'of your hands', Heb. 2, 7). The same process of substitution affects other cases as well: cf. DAT. PL *-am* (for paral meaning) vs. DAT. DU *-ama* (regular dual), as illustrated by *k iogo noogam* (Luk. 17, 16) 'to his legs' instead of the expected *noogama* (Igartua 2005a: 297–298). All this indicates that when natural pairs were referred to, plural markers were used instead of the corresponding dual forms. This constitutes an innovation with respect to the original situation, in which occasional and natural pairs were both marked with dual suffixes (for Common Slavic, see Žolobov 1998). The quasi-reversal in Jakubica as well as in later Upper Sorbian (a kind of inverse marking termed this way because it operates just in one direction, otherwise we would find dual marking in plural reference of natural pairs), was probably based on a semantic distinction between paral and dual values.

It is noteworthy that a formal differentiation between paral and dual values might have been reflected, according to some scholars, in the Indo-European languages Tocharian A and B. Both systems have their own sets of suffixes for the two values (see Krause & Thomas 1960: 76): cf. Toch. A *aš-äm* 'eyes' vs *pratr-i* '(two) brothers', Toch. B *pai-ne* (paral) 'feet' vs (*wī*) *pwār-i* (dual) '(two) fires'. This argument was, however, criticized by Winter (1962: 122, 134), who denied

the existence of such a formal opposition and, among other things, showed that, for example in Tocharian B, only the ending *-ne* qualified as a true dual marker. Nonetheless, even though Winter's explanation has been assumed by several specialists (Pinault 2008: 462; Peyrot 2008: 116), other authors still consider it possible that the Tocharian languages made this morphological distinction (see Van Windekens 1979: 168).<sup>8</sup>

Even if this alleged Tocharian innovation turns out to be no longer defensible, there are still other instances that seem to point in the direction of a specific encoding of the paral reference. Among the Slavic languages, it has been claimed that Old Russian (Old East Slavic) exhibits a specific tendency towards the inflectional differentiation of paral and dual values. From the 13th century on, the ending *-i* became the typical suffix of NOM-ACC for natural pairs, replacing other dual endings. The case of such forms as Old Russian *kolěno* is particularly telling: when *kolěno* means 'generation', the occasional dual forms that it takes present the regular endings of neuter *\*o*-stems (the inflectional class to which the noun ultimately belongs), i.e. NOM-ACC.DU *kolěně*. But when *kolěno* means 'knee', its nominative-accusative dual form takes the ending *-i* by analogy with other nouns designating natural pairs (this *-i* was the original ending of the old *\*i*-stems, subsequently extended to other classes), as in the following examples: *preklonivъ kolěni* 'having gone down on (his) knees' (*Chronicle of Georgios Amartolos*, 13-14th c., 159a), *preklonъ kolěni* '(h)e went down on (his) knees' (Grigorij Bogoslov, *16 slov*, 14th c.), cf. Šul'ga (1985: 228); Igartua (2005b: 617).<sup>9</sup> Thus, as represented in Table 19 below, Old Russian had both the inherited form for the general dual value (occasional pairs) and the innovated one for the paral meaning.

**Table 19.** Dual and paral forms in Old Russian

Dual meaning	Paral meaning (innovation)
NOM-ACC <i>kolěn-ě</i> 'two generations'	NOM-ACC <i>kolěn-i</i> 'two knees'

Unlike Tocharian and Old Russian, Sorbian has made use of the same morphological exponents of dual and plural for expressing – by means of a form inversion – a

8. This Tocharian development has been introduced as a typological oddity into the *Raritätenkabinett* of Konstanz and cited in general introductions to linguistic typology like that of Velupillai (2012: 160).

9. Other paral forms that can be found in Old Russian or, in general, in the history of Russian are *nozi* 'legs' (instead of the dual *nozě*, from *noga*) and even *pleči* 'shoulders', which has not evolved into *pleče*, as expected, precisely because of its paral reference (Šul'ga 1985: 220; Igartua 2016: 117–118).

new distinction within the dual category. Another explanation for this change might be that the formal opposition between dual and plural paradigms was neutralized with regard to natural pairs, which seems highly improbable in view of the retention and even vitality of the dual category in these systems. In addition, the paral meaning usually constitutes the semantic core of the dual, although its origin may be linked to other values (like the inalienability of body parts, see Fritz in Meier-Brügger 2003: 191) and it is precisely in natural pairs (paired body parts) where the dual morphology tends to be preserved in processes of category loss (for Slavic, see Bräuer 1969: 131).

In any case, in the Sorbian development it seems clear that a frequently used form-meaning matching (with an expected dual/paral meaning) is deprived of specific dual exponents, which are replaced by general plurality markers (a kind of zero or less specific coding which, on the other hand, does not impede the paral interpretation of these forms). This kind of recoding of a frequent category is in accordance with an economical design of grammar (see Haspelmath 2006: 54). Similar stimuli and mechanisms may also have been at work in some of the morphological reversals for which we have no diachronic evidence.

#### 4. The economy of marker inversion and the role of morphological ambiguity

Turning now to the mechanisms and principles giving rise to marker inversion, it has been argued that morphological reversals can emerge as a consequence of analogy. The phenomenon, as Baerman (2007: 58) puts it, “starts with some change that brings about a distribution of forms within a paradigm which superficially looks like a reversal”. This pattern is noticed by speakers, then reanalyzed as the product of a systematic principle of reversal, and finally extended by analogy to other contexts. The spread of the polar distribution in the case of Old French declensional subclasses appears to give support to this diachronic schema, even though the morphological reversal was probably extended due not to the intrinsic properties of marker inversion as a morphological device, but by virtue of such a fundamental factor as the high productivity of the masculine paradigm of *murs*-like nouns.

Despite the scarcity of historical data for some morphological reversals, at least in some instances it seems that in the emergence of inverse inflectional patterns deeper principles of economy and markedness (or frequency) are also involved. Different (and even diverging) uses of the same morphological resources, conveniently anchored in context, can be regarded as economy-driven linguistic phenomena. In addition, as illustrated in the Labrador Inuttut examples studied by Smith (1979), the interpretation of plural second person forms as unmarked (in the sense

of more natural, more expected, or more frequent) with regard to the singular forms may lie behind the marker inversion that characterizes second person plural forms. Examples from different languages can be adduced in favor of such a reinterpretation (like the singular use of plural pronominal forms in French, Czech, Indonesian, as well as in the history of English, among other cases, see Smith 1979: 161–163).

On the other hand, one might think that morphological reversals are not always necessarily the (undesirable) byproduct of a certain phonological or morphological change in the system. As a morphological device, reversals seem to be related to one of the three basic strategies for matching phonological forms with morphosyntactic values or specifications, as argued in Lahne (2007: 7). These are, according to the author, the three main strategies:

1. Targeting minimal ambiguity with maximal formal inventory (no syncretisms at all), which is at least partly reflected in the separative technique of morphological encoding (but may also provide the basis for multiple exponence, see Table 3 above).
2. Making use of syncretisms in natural classes, which is associated with the cumulative technique of morphological encoding.
3. Targeting minimal ambiguity with minimal formal inventory (i.e. yielding evenly distributed syncretisms, the source of reversals).

Lahne (2007: 7) states further that “[t]he implication of this typology of matching strategies is that polar distribution of inflectional markers is in no way unexpected, but the most efficient way of referring to feature specifications minimally ambiguously with a minimal formal inventory (i.e. minimal formal inventory, but at the same time minimal ambiguity)”. This possibility of taking a reversal as a basic encoding strategy appears to be realized in the diachronic behavior of the paradigmatic model of *murs* or *filz* in Old French, a declensional subclass that not only does not become recessive because of its internal case structure, but can even extend across inflectional classes, replacing other paradigmatic models (see Section 3.1 above).

On the other hand, the alleged efficiency of morphological polarity seems to be fully in line with the conclusions of recent works about ambiguity as one of the constitutive elements of the communicative function of language (see Piantadosi, Tily & Gibson 2012 for such an approach). From this perspective, ambiguity emerges as a necessary and even desirable feature of any communicative system when context is informative about meaning. As suggested above, ambiguity is tightly related to linguistic economy and efficiency, to the extent that the same formal resources are used for different functional purposes, which usually are disambiguated on syntactic and pragmatic grounds. As Hawkins (2011: 216) argues, “[i]t is not efficient



to have a distinct form (F) for every possible property (P) that one might wish to express in everyday communication”. To do so would increase the number of form-property pairs in a language. And this is why, following Hawkins, choices have to be made “over which properties get priority for unique assignment to forms, and the remaining properties are then assigned to forms that are ambiguous, vague, or zero-specified with respect to the property in question”. Morphological reversals enter into this category of linguistic phenomena.

There are also, of course, evolutive factors whose relevance cannot be understated: the members of a morphological reversal usually come from different etyma, as in Old French and Kham. In the latter case, the Takale dialect (see example 4 above, in Section 2.1) has presumably eliminated a distinction between declarative perfective (*-ke*) and declarative future (*-te*), which was retained in other Kham dialects (Watters 2002: 99). The complete reversal in Takale is partly the result of a phonological conflation between the perfective suffix *-ke* and the original future marker *\*-te*.

Furthermore, ambiguity itself can be viewed as a byproduct of certain grammatical and cognitive constraints. As argued in Wasow, Perfors & Beaver (2005: 277–278), limits on the number of morphemes that can be learned and remembered, a quantity which tends to be smaller than the number of semantic meanings (or atoms) expressible in languages, may lead to an ambiguous use of at least certain morphemes (see again Hawkins 2011: 216), reflected in inflectional phenomena like syncretism and polarity. The number of morphemes is in turn restricted by the number of phonemes in a particular language and by the possibilities of sequencing them. Hence, conclude the authors, “if a language needs a large inventory of atomic meanings, it will have ambiguous morphemes”.

## 5. Conclusion

Full as well as partial morphological reversals and, to a lesser degree, other inflectional phenomena (like the quasi-reversals discussed in this article) seem to point in the direction of a rather robust interplay between economy and markedness as the possible origin of marking inversion in inflection. In this way, economy (or minimality) in combination with other factors seems to be at the basis of morphological polarity. The rise and subsequent development of morphological reversals in certain languages demonstrates that this kind of inflectional pattern, which tends to be viewed as deviating, is not necessarily avoided in linguistic systems (by means of those ‘remedial’ innovations identified by Andersen [1980: 10]), but rather can even spread to other inflectional classes through analogical change.

Economy in morphological reversals is reflected in the use of limited formal resources to create functional contrast, which implies the ambiguous reuse of morphological substance, as is also the case in common syncretisms. Their second economical property is that the ambiguity inherent in morphological polarity generally disappears thanks to an informative context, which may be morphosyntactic, lexical, and pragmatic. Finally, and in connection with the preceding remark, economy of morphological means operates in combination with other factors, especially local markedness phenomena (based on frequency correlations), which can reverse the usual semantic/formal oppositions.

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# Deconstructing markedness in sound change typology

Notes on  $\theta > f$  and  $f > \theta$

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Many sound changes have been attributed to misperception (Ohala 1981, 1993). When two sounds A and B are perceptually similar, A can be misperceived as B and vice versa. One sound change attributed solely to perceptual similarity is  $\theta > f$  (Blevins 2004). Misperception of  $[\theta]$  as  $[f]$  yields  $\theta > f$ , while hearing  $[f]$  as  $[\theta]$  should lead to  $f > \theta$  changes. Context-free shifts of  $\theta > f$  are attested, but regular  $f > \theta$  changes are rare. Recent research questions the existence of  $f > \theta$  changes and the perceptual basis of  $\theta > f$  changes. Historical, typological, experimental, developmental, and language contact data reviewed here support the original perceptual account of  $\theta > f$  and  $f > \theta$ , suggesting that the observed asymmetry can be explained phonetically and structurally, without reference to markedness (cf. Andersen 2008).

**Keywords:** sound change, markedness, perceptual similarity, dental fricative

## 1. Asymmetries in sound change typology

It has long been observed that there are asymmetries in sound change typology.  $A > B$  is common, but  $B > A$  is rare, as in the common debuccalization of  $s > h$ , but the rare strengthening of  $h > s$ . As our understanding of the phonetic bases of sound change deepens, more and more of these asymmetries can be attributed to phonetic explanation, eliminating reference to markedness (Blevins 2004; 2008; 2015; cf. Andersen 1989; 2001). For example,  $s > h$  is common because many instances of  $[s]$  are produced with spread vocal folds; weakening or loss of oral constriction yields  $[h]$ . In contrast, there is no simple phonetic explanation for  $h > s$ ; strengthening of  $[h]$  may yield a non-laryngeal fricative, but the articulatory properties of this fricative typically reflect the secondary features of the original  $[h]$ , with  $[s]$  expected only when  $[h]$  has a secondary articulation that is coronal/apical. No reference to

markedness is necessary. [s] and [h] are equally “good” sounds, but articulatory properties of [s] make  $s > h$  common, while those of [h] make  $h > s$  rare.

One sound change that continues to invoke notions of markedness is  $\theta > f$ :  $\theta > f$  is attested in a range of language families, but  $f > \theta$  is rare or unattested. Here I present data not discussed in earlier literature, and assess a range of explanations for the clear asymmetry, including: articulatory difficulty of [θ] (Wells 1982; Kjellmer 1995); lack of perceptual saliency of [θ] (Labov et al. 1968; Jones 2002) and perceptual similarity of [θ] and [f] (Harris 1958; Jones 2002; Blevins 2004). This case is of particular interest, since, as noted as early as Sweet (1874: 10),  $\theta > f$  does not have a clear articulatory basis and, in his terms, is “no doubt purely imitative”. Can innocent misperception account for the observed asymmetry, or is a theory of markedness necessary to implement observed bias in the directionality of sound change?

## 2. Perceptual similarity and sound change: The case of $\theta > f$

A common explanation for context-free sound change  $A > B$  is that A and B are perceptually similar sounds, so much so that A can be mistaken for B in the course of language acquisition (Ohala 1981; 1993). If A and B are easily confused with each other, the expectation is that, all else being equal,  $B > A$  should be just as common as  $A > B$ .

One apparent case of this kind is the sound change  $\theta > f$ , [θ] a voiceless dental or interdental fricative, and [f] a voiceless labiodental fricative.<sup>1</sup> Context-free  $\theta > f$  is best known as having occurred in a range of English dialects, including Cockney (Severtsen 1960; Wells 1982). Earlier literature on perceptually-based  $\theta > f$  includes Rotuman, an Oceanic language, where  $*t > *θ > f$  is hypothesized, and the Veneto dialect of Italian where  $\theta > f$  is ongoing (Blevins 2004: 134–135; Blevins 2006: 11–12).

Two other language families that show evidence of context-free  $\theta > f$  are Semitic and Athabaskan. In the Southern Anatolian Siirt dialect of Arabic, original interdentals  $*θ$ ,  $*ð$ ,  $*ð'$  (emphatic) have become labiodentals /f, v, v'/: *fa'lab* ‘fox’ <  $*θa'lab$ ;

1. We focus on voiceless sounds [θ] and [f] for several reasons, though similar observations hold for [ð] and [v]. First, since voiceless obstruents are, overall, more common than voiced obstruents, the highest frequencies of this change are expected with the voiceless pair. Second, it has been argued, for example, by Ohala (1983), that voicing is, to some extent, inhibited in sibilants and other fricatives that require high oral air pressure to maintain turbulence. The primary role of perception in this kind of sound change, then, should be more visible in shifts of  $\theta > f$  or  $f > \theta$  than their voiced counterparts. Finally, there is more data available in the experimental literature on perception and production of [θ] and [f] than [ð] and [v].

*vahab* ‘gold’ < \*ðahab; *v’arab* ‘he hit’ < \*ð’arab (Fischer and Jastrow 1980: 50). In addition, incipient  $\theta > f$  changes are reported for Shiite Hasaawi Arabic, Eastern Saudi Arabic, Bahraini (*falaafa* <  $\theta$ alaa $\theta$ a ‘three’) and Tunisian Arabic (*fəm:a* <  $\theta$ əm:a ‘there is’) (Hetzron 1997: 275).

In at least one Northern Athabaskan language, a shift of  $\theta > f$  has also occurred (Tharp 1972; Howren 1975; Rice 1989; Flynn and Fulop 2014). This sound change is of special interest since it is clearly not a merger. It appears to have occurred at a stage when the language lacked a labiodental series, or any labial obstruents. Northern Athabaskan/Early Slave is reconstructed with \* $\theta$  and \* $\delta$  from Proto-Athabaskan \**s* and \**z* respectively, but with no labiodentals or labial obstruents.<sup>2</sup> In the Dene Tha dialect of South Slave spoken from Northwest Alberta to northeast British Columbia these interdental persist, but in the Tulita district of the Northwest Territories, Tulita-Slavey has undergone \* $\theta$ , \* $\delta > f$ , *v*. Compare: Dene Tha *θa*, Tulita *fa* ‘sand’; Dene Tha *θε-*, Tulita *fε-* PERFECTIVE; Dene Tha *-ðáz*, Tulita *-va* ‘mouth’; Dene Tha *-ðež*, Tulita *-ve* ‘liver’ (Flynn and Fulop 2014).

Context-free  $\theta > f$  sound changes are summarized in Table 1.<sup>3</sup> Each sound change in Table 1 appears to be an independent development. All are complete with the exception of the Veneto example. Though some, like the English case, have diffused, each is associated with a variety in which the change is unconditioned.

**Table 1.** Context-free  $\theta > f$  sounds changes

Language/Dialect	Family/sub-group	Sound change	Data source
English/Cockney	Indo-European/Germanic	$\theta > f$	Sevrtsen 1960
Rotuman	Austronesian/Oceanic	* <i>t</i> > * $\theta > f$	Blust & Trussel 2013
Italian/Veneto	Indo-European/Romance	$\theta > f$	McKay 1995
Arabic/Siirt	Afro-Asiatic/Semitic	$\theta, \delta, \delta' > f, v, v'$	Fischer & Jastrow 1980
Slave/Tulita-Slavey	Athabaskan/Northern	$\theta, \delta > f, v$	Flynn & Fulop 2014

2. The full series of Proto-Northern Athabaskan dental obstruents includes plain, aspirated, and glottalized affricates \**tθ*, \**tθ<sup>h</sup>*, \**tθ'*, in addition to the plain fricatives \* $\theta$  and \* $\delta$ . The sound change described for \* $\theta$  and \* $\delta$  affected these sounds as simple segments, and, as release portions of the dental affricates. For purposes of cross-linguistic comparison, we focus on the simple changes involving \* $\theta$  and \* $\delta$  here.

3. Recall that the investigation is limited to context-free cases of  $\theta > f$  so as to ensure the central role of perception. Context-sensitive changes, like late pre-Latin  $\theta > f$  in the context of labials (e.g. Latin *fu:mus* ‘smoke’ < *θu:mus*, cf. Greek *θumós* ‘spirit’ Hockett 1985: 271; Kümmel 2007: 193), may involve coarticulatory influence of the lips, or acoustic consequences of vowel context, weakening arguments based on misperception of [ $\theta$ ] as [*f*].



As a context-free sound change,  $\theta > f$  is not assimilatory, and cannot be attributed to coarticulatory effects. At the same time, it cannot be viewed as a gradual articulatory shift, since there is a change in active articulator, from tongue tip/blade in the production of dentals to lower lip in the production of labiodental sounds. Given its dissociation from articulatory origins, within the typology of Blevins (2004),  $\theta > f$  exemplifies a pure case of CHANGE: sound change with a primary source in misperception.<sup>4</sup>

The perceptual account of  $\theta > f$  is supported by a range of experimental data. In an early study where noise was used to mask stimuli, the highest confusion rates for English-speaking adults were found between  $[\theta]$  and  $[f]$  and  $[\delta]$  and  $[v]$ , respectively (Miller & Nicely 1955). More recent studies continue to show high confusion rates for  $[\theta]$  and  $[f]$ , independent of whether  $[\theta]$  is contrastive in a language or not (Johnson & Babel 2010). Infants also have some difficulty with this contrast. Though categorical perception is exhibited robustly for many other contrasts, pre-linguistic infants do not show the same facility in distinguishing interdental fricatives from their labiodental counterparts (Eilers & Minifie 1975; Eilers 1977; Levitt et al. 1988; Vihman 1996:60). Acoustic studies also demonstrate spectral similarity of interdental and labiodental fricatives, making their confusion unsurprising (e.g. Lambacher et al. 1997; Tabain 1998; Jongman et al. 2000).

Speech errors in the course of language acquisition also suggest perceptual confusion. In Dyson & Amayreh (2000), 50 children acquiring Educated Spoken Arabic are shown to have difficulty acquiring  $[\theta]$ . Instead of pronouncing this sound, they use  $[t]$ ,  $[s]$  or  $[f]$ . At the age of 4;4, when  $/\theta/$  is being pronounced as  $[\theta]$  most of the time, about 20% of tokens are still being pronounced as  $[f]$ , suggesting that perceptual confusion, and not articulatory difficulty, is at work.

Finally, the perceptual similarity of  $[\theta]$  and  $[f]$  is supported by other situations in which one sound is substituted for the other. In second language acquisition, speakers of European French and Japanese sometimes substitute  $[f]$  for English  $[\theta]$  (Wenk 1979; Brannen 1998; Guion et al. 2000; Brannen 2011).<sup>5</sup>

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4. Garrett and Johnson (2013:72) suggest that all cases of  $\theta > f$  are actually  $\theta^w > f$ , where the original interdental fricative is produced with lip-rounding, and so, includes a labial gesture from the outset. See Section 6 for further discussion.

5. A relevant anecdote involves a famous TV host in Spain, the late Matías Prats Sr. The announcer was from Córdoba in southern Spain, and could not produce  $[\theta]$ . He claims that at the beginning of his career he pronounced  $[f]$  instead, and nobody noticed (Montserrat Batllori, personal communication, 2009).

### 3. $\theta > f$ without pre-existing /f/?

Numerous sound changes in the world's languages show evidence of structural analogy, occurring more often when their output is a pre-existing sound or sound pattern in the language in question (Blevins 2004: 154; Chitoran & Hualde 2007; Blevins 2009). For example, a significant factor in the historical reanalysis of short vowels as long vowels under compensatory lengthening is the pre-existence of long vowels in a language (De Chene & Anderson 1979; Kavitskaya 2002). Within Evolutionary Phonology, pre-existing categories can prime or bias categorization in the course of language acquisition, giving rise to historical patterns of this type (Blevins 2009). A reasonable question, then, is whether the  $\theta > f$  sound change requires pre-existing /f/ in a language in order to take place.

The acquisition data from English and Arabic noted above suggests that the existence of labiodentals within a segment inventory might play a role in  $\theta > f$  sound change, priming [f] by exposure to auditory data, and practice with articulatory routines in the early stages of acquisition (Hockett 1985: 273). Since early stages of English, Italian and Arabic all show phonemic /f/, data from Cockney, Veneto, and the Arabic dialects noted earlier would all be consistent with this kind of priming.

However, in Rotuman and Slave,  $\theta > f$  sound change may have occurred without a pre-existing \*f phoneme. In Rotuman, /f/ reflects Proto-Oceanic \*t in directly inherited vocabulary, though /f/ has also entered the language through indirect inheritance in Polynesian loanwords (Biggs 1965). Table 2 illustrates Rotuman correspondences for the two distinct lexical strata.

**Table 2.** Direct and indirect sound correspondences in Rotuman

Proto-Eastern Oceanic	*p	*t	*k	*q	*l
Rotuman (Direct inheritance)	h	f (< * $\theta$ )	ʔ	ø	l
Rotuman (Indirect, via Polynesian)	f	t	k	ʔ	r

In Table 3, reflexes of four Proto-Eastern Oceanic lexemes illustrate direct and indirect strata of the lexicon. In the case of /fau/ which is directly inherited, /f/ < \* $\theta$  < \*t; however /faka-/ reflects borrowing from another Eastern Oceanic language in which /f/ < \*p, and /k/ < \*k.

**Table 3.** Direct and indirect sound correspondences in Rotuman lexemes

Proto-Eastern Oceanic	*puke 'uncover'	*paka- CAUS	*taqu 'season'	*toqa 'brave'
Rotuman (Direct inheritance)	huʔe	–	fau	–
Rotuman (Indirect, via Polynesian)	–	faka-	–	toʔa

While the Rotuman data could be interpreted as supporting  $\theta > f$  without ambient [f], an alternative interpretation is possible. Given the clear evidence of Polynesian contact with Rotuman, the  $\theta > f$  sound change could be a consequence of this contact. Speakers of a Polynesian language with /f/, acquiring Rotuman, would replace native pre-Rotuman  $*\theta$  with the perceptually closest sound from their native inventory, /f/. If Rotuman  $*\theta > f$  could be shown to pre-date the influx of Polynesian loans, this scenario could be ruled out. However, while all other regular sound changes must pre-date the entry of loans, including hypothesized  $*t > \theta$ ,  $*\theta > f$  would be inert in the Polynesian lexicon, and therefore need not pre-date the influx of borrowings. In sum, Rotuman  $*\theta > f$  could have occurred prior to the evolution of /f/ as a phoneme, in a language without labial obstruents, or, after the influx of Polynesian loans with /f/, as a consequence of this contact. In the first case, it would illustrate  $\theta > f$  without pre-existing /f/. In the second, it would strengthen the case for perceptual similarity, linking  $*\theta > f$  with L2 learners of Rotuman whose native language had /f/, but no /θ/, or Rotuman speakers with extensive exposure to Polynesian. In the contact situation, Polynesian /f/ could act as an external “perceptual magnet”, resulting in an otherwise, unexpected sound change (Blevins 2017).

For Slave, it might at first seem clear that  $\theta > f$  occurred without  $*f$ . Recall that Northern Athabaskan/Early Slave is reconstructed with  $*\theta$  and  $*\delta$ , but with no labiodentals or labial obstruents (Tharp 1972; Howren 1975; Rice 1989; Flynn & Fulop 2014). In the Tulita dialect of Slave,  $\theta > f$  has occurred without prior existence of a labiodental series, or any labial obstruents at all. Nevertheless, as in Rotuman, contact may have introduced ambient labials into the linguistic landscape. French and English both have bilabials and labiodentals, and loans from both languages exist in Slavey. European contact in this area dates back to the early fur trade of the 17th century. Unless Slave  $\theta > f$  can be argued to pre-date European contact, contact-induced change cannot be ruled out. More interesting, perhaps, is a possible influence from Inuit. While all Inuvialuktun varieties to the north of North Slavey have bilabial stops and /v/, Inuinnaqtun, bordering on Northern Slave to the northeast, is the only dialect where historical /ps/ clusters have evolved into /ff/.

To summarize, it may be the case that context-free  $\theta > f$  occurs only when /f/ is pre-existing in the linguistic environment. Although Rotuman and Tulita Slavey did not directly inherit /f/, both languages have been in contact with languages that did have /f/. To date, there is no known case of a context-free  $\theta > f$  sound-change where speakers have, arguably, had no exposure to [f]-sounds.

#### 4. Frequency of $\theta > f$

Perhaps because of the diffusion of  $\theta > f$  within English dialects, or numerous instances of conditioned  $\theta > f$  sound change,  $\theta > f$  is sometimes classified as a relatively frequent sound change in contrast to  $f > \theta$ , which is considered rare. Before turning to the question of  $f > \theta$  and the issue of this asymmetry more generally, some notes on frequency within a large language family are offered in the hope that they may prove useful in assessing cross-linguistic frequencies.

The Austronesian language family may be a good starting point for the investigation of /f/ and /θ/ frequency, and the frequency of  $\theta > f$  and  $f > \theta$  sound change because Proto-Austronesian reconstructions are widely agreed upon, the language family is large with over 1,000 living descendants, and, most importantly for this study, Proto-Austronesian lacked both \*f and \*θ, but contained \*p, a common source of [f], as well as \*s and \*t, both common sources of [θ]. Proto-Austronesian, then, may be viewed as a neutral starting point for exploring how often  $\theta > f$  and  $f > \theta$  sound changes arise, and the extent to which this can be related to the frequency of /f/ and /θ/ in phoneme inventories.

Rotuman, an Oceanic language, has undergone  $*t > *θ > f$ , as proposed above. However,  $\theta > f$  is rare within the Austronesian language family. After reviewing a wealth of comparative materials, including the ever-growing *Austronesian Comparative Dictionary* (Blust & Trussel 2013), it appears that Rotuman is, in fact, the *only* instance of  $\theta > f$  within this family of over 1,000 languages (Blust 2009). If only 1 out of 1000 Austronesian languages shows  $\theta > f$ , one may conclude that it is not a very common process. However, if we take into account the fact that only a small number of Austronesian languages have /θ/, expectations change.

Proto-Austronesian is not reconstructed with \*θ. The most common source of /θ/ in Austronesian is dental \*s, as in Thao, Papura, Dehu, Anejom, Ulithian, and Yapese. In To'amba'ita and closely related Mbaelelea and Mbaengguu, some /θ/s are from \*s, but there is also evidence of word-initial excrescent /θ/, possibly from \*y (IPA [j]) (cf. PMP \*qasu, To'amba'ita /θasu/ 'smoke'). In Yapese and Ulithian, one source of /θ/ is \*s, but as in pre-Rotuman, another source of /θ/ is \*t. Table 4 includes all known Austronesian languages with phonemic /θ/, with historical source, where known, and information on /f/ for the same language. Overall, then, in a family of 1,000 or more languages, there are a dozen or so with /θ/ or \*θ/, but no major subgroups reconstructed with \*θ.

Table 4. Austronesian languages with /θ/

Language(s)	Sub-group (Area)	Source of /θ/	has /f/?	Source of /f/
Thao	Western Plains (Formosan)	θ < *s	yes	f < *b
Papora	Western Plains (Formosan)	θ < *s	no	
Dehu	Oceanic/Loyalty Islands	θ < *s	yes	f < *p /..., other
Anejom	Oceanic/South Vanuatu	θ < *s	yes	??
Ulithian	Oceanic/Micronesian	θ < *s, θ < *T	yes	f < *p
Yapese	Oceanic	θ < *s, θ < *t	yes	??
To'amba'ita	Oceanic/SE Solomonian	θ < *s, θ < *y?	yes	f < *p /...
Mbaelelea	Oceanic/SE Solomonian	θ < *s, θ < *y?	yes	f < *p /...
Mbaengguu	Oceanic/SE Solomonian	θ < *s, θ < *y?	yes	f < *p /...
**Pre-Rotuman	Oceanic/Central Pacific	(f) < *θ < *t	maybe	Polynesian loans
**Pre-Pulo Annan	Oceanic/Micronesian	(ð) < *θ < *f	no (had)	*f < p
**Pre-Sonorolese	Oceanic/Micronesian	(ð) < *θ < *s	yes	f < *p

\*\* See discussion in text.

Of these dozen or so languages, Rotuman is the only to have undergone context-free \*θ > f. Given that /θ/ in the Northern Malaita languages To'amba'ita, Mbaelelea, and Mbaengguu, appears to stem from a single innovation with shallow time depth, we could count these as a single instance of /θ/. If we do so, the data compiled in Table 4 suggests the rate of context-free \*θ > f sound change for languages with /θ/ is approximately 1/10 or 10% in the Austronesian language family. This figure suggests that the view of \*θ > f as common may be overstated. It may also be consistent with the observation that there is a strong correlation between \*θ > f and pre-existing /f/.

## 5. Is there f > θ sound change?

Confusability of [f] and [θ] as evidenced in the early perception study of Miller and Nicely (1955) is attributed to the spectral similarity of these two types of sounds (Harris 1958; Ladefoged and Maddieson 1996; Tabain 1998). Given this similarity, and a model of sound change in which misperception can play a central role, f > θ sound change is also expected to occur. Two potential cases of f > θ (or f > θ > ð) have been reported in the literature, though neither in the context of general sound change typology.

Pulo Annan is a Chuukic language of Palau. Proto-Chuukic is classified as Micronesian, with Proto-Micronesian a subgroup of Oceanic, within the greater Austronesian language family (Bender et al. 2003). In Pulo Annan, Proto-Chuukic \*f is reflected as the voiced interdental fricative /ð/, as illustrated in Table 5.

Table 5. Pulo Annan reflexes of Proto-Chuukic \*f and \*T with comparative data

Proto-Chuukic	*faca 'pandanus'	*ɲafa 'fathom'	*faTu 'to weave'	*fida 'how many?'
Pulo Annan	ðasa-	ɲaða-	ðaðú-	ðite-
Chuukese	fache-	ɲafa-	féwú-	fite-
Ulithian	–	–	fasu-	feθa-

I propose the changes \*f > \*θ > ð. The final shift, θ > ð, is independently motivated by /ð/ reflexes of Proto-Chuukic \*T (= [s]) in Pulo Annan and Sonsorolese, where the shared development is \*T = [s] > θ > ð (op cit). Compare for example Pulo Annan *ðiði-*, Sonsorolese *fiðu-*, Chuukese *fusu-*, all from Proto-Chuukic \*fiTu- 'seven'.

A further suggestion is that Pulo Annan and Sonsorolese both underwent a late shift of \*θ > ð as a consequence of Palauan contact. In Palauan, [θ] occurs only as an allophone of /ð/, usually in word-final position or word-initially before a consonant. It is not unreasonable to believe that first language speakers of Palauan would pronounce [θ] as [ð] in other positions of the word, resulting in the apparent context-free θ > ð sound change which is otherwise highly unusual and unexpected. Returning to \*f > \*θ > ð, we can now integrate \*f > \*θ into the wider typology of [f]/[θ] misperceptions, and understand θ > ð voicing in the final stage as a more general consequence of Palauan influence, as just discussed.

Other potential cases of f > θ are described for several Spanish varieties, including Spanish of Castilla la Nueva by Moreno Fernández (1996), and the Spanish of Equatorial Guinea by Quilis (1996). In his chapter on Castilla la Nueva, Moreno Fernández states that:

Las consonantes fricativas presentan en Castilla la Nueva aspectos interesantísimos, muchos de ellos compartidos con otros territorios hispánicos. El fonema /f/ se realiza como bilabial en buena parte de la región. En hablantes con pocos estudios se encuentran equivalencias acústicas del tipo *Celipe* 'Felipe', *cinca* 'finca', *escalazón* 'escalafón'.  
(Moreno Fernández 1996: 216)

[The fricative consonants in Castilla la Nueva show very interesting features, many of which are shared with other Spanish-speaking regions. The phoneme /f/ is produced as a bilabial in a good part of the area. For speakers with little education one finds acoustic equivalencies like *Celipe* 'Felipe', *cinca* 'finca', *escalazón* 'escalafón' [tr. JB], [where <c> / \_ <i,e> and <z> / \_ <o> write [θ].]

While this description may look like \*θ > f, it appears to be sporadic, and is put into perspective by descriptions of other varieties. In particular, Quilis (1996) is illuminating. He describes a frequent θ > f change: "Algunos hablantes, con relativa frecuencia, sustituyen el fonema /θ/ por /f/ [Some speakers, with relative frequency,

substitute the phoneme /f/ for /θ/ [tr. JB]: [félja] *Celia*, [kamfjón] *canCIÓN*, [felestino] *Celestino*, ...” (ibid: 384). He also notes that “Hemos encontrado con cierta frecuencia la pronunciación [θ] por [f] [We have found with some frequency the pronunciation [θ] for [f] [tr. JB]: [gáθas] *gafas*, [flasθémja] *blasfemia*” (ibid: 383). It appears in this and other Spanish dialects that the regular sound change, if any, is \*θ > f (perhaps spreading areally in certain regions), and that instances of f > θ can be viewed as sporadic examples of hypercorrection.<sup>6</sup> If this is the case, Pulo Annan may stand as the only clear case of context-free f > θ sound change described to date. Or is it?

Perhaps, dismissal of Palauan contact with Pulo Annan as a factor in \*f > θ was too hasty. Even if Palauan lacked phonemic /θ/, an L1 speaker of Palauan might produce Pulo Annan [f] as [θ], since [θ] would have been the closest perceptual match to the target [f]. Indeed, recent theories of loanword phonology suggest that the best explanation for violations of native sound patterns in loanword phonology is viewing them as a result of phonetic decoding in the course of speech perception (Peperkamp 2004).

In sum, the typological landscape is somewhat bleak. There are no unambiguous examples of language-internal spontaneous, context-free \*f > θ. And there are no clear examples of language-internal spontaneous, context-free \*θ > f in languages that lack /f/. We are left with a conundrum. Though [f] and [θ] are perceptually similar, [f] is very rarely systematically misperceived as [θ] and, [θ] is only systematically misperceived as [f] when /f/ is a pre-existing category in the mind of the speaker.

## 6. Explanations

Most researchers are in agreement that context-free \*θ > f sound change has a perceptual basis (Jones 2002; Blevins 2004; Flynn & Fulop 2014). An exception is Garrett and Johnson (2013: 71–72). They express uncertainty about attributing the frequency differences in θ > f vs. f > θ sound change to asymmetric misperception, and suspect that all instances of θ > f are actually θ<sup>w</sup> > f, with the shift from a labialized sound to a true labiodental as a consequence of perceptual enhancement. Under their account, θ<sup>w</sup> > f, occurs so that [grave] (labiality) will enhance [flat]

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6. I am grateful to an anonymous reader for bringing this data and analysis to my attention.

(rounding).<sup>7</sup> They provide several reasons for their suspicions, none of which seem consistent with the full range of data available.

The first reason to suspect  $\theta^w > f$  as opposed to  $\theta > f$  is that in one variety of Glasgow English, where  $\theta > f$  has diffused, there is a description of a labialized dental fricative. While this may be an accurate description of the phone, there is no evidence for labialization of dentals in Southern British English, Castillian Spanish, or varieties of Arabic which are precursors to  $\theta > f$  shifts. In Arabic, the situation is more interesting. Recall that in the Southern Anatolian Siirt dialect of Arabic, all original interdental \* $\theta$ , \* $\delta$ , \* $\delta'$  (emphatic) have become labiodentals / $f$ ,  $v$ ,  $v'$ /, including plain and emphatic interdentals. Since emphasis is contrastive in Arabic, and emphasis is classified as a [flat] feature, under the perceptual enhancement account we expect only the emphatic interdentals to undergo labiodentalization. A second observation Garrett & Johnson (2013) offer is that there are conditioned interdental  $>$  labiodental fricative changes that take place in labial contexts. This, of course, is true. I have purposely excluded contextually conditioned sound changes from this discussion so as to ensure that perception, and not coarticulation, can be singled out as a primary factor.

At the same time, there is strong evidence against their perceptual enhancement account from perceptual studies of the  $\theta/f$  contrast in different vocalic environments. Experiment 1 of Johnson & Babel (2010) compares English- and Dutch-speaking listeners in their similarity judgments of segment pairs, including [f] vs. [ $\theta$ ] in three distinct vowel contexts: a\_\_a, i\_\_i, and u\_\_u. Interestingly, listeners from both groups had the highest similarity judgments for [f] and [ $\theta$ ] in a\_\_a and i\_\_i contexts; in the u\_\_u context, similarity judgments for both groups were significantly lower (Figure 2, p. 131). Similar findings are reported in Brannen (2011: 81-82) where speakers of Japanese, Quebec French, European French, and English all show significantly better discrimination of [f] vs. [ $\theta$ ] before /u/ than before /a/ or /i/. Assuming coarticulation in the u\_\_u or \_\_u contexts, Garrett & Johnson's (2013) hypothesis predicts worse discrimination: coarticulatory rounding of [ $\theta$ ] enhances its flatness, making it more grave, and hence more [f]-like. However, the pattern is the reverse. Coronal sounds before /u/ appear to be more distinctly coronal, and less labial-like. In sum, the evidence that Garrett & Johnson (2013) bring to support  $\theta^w > f$  (instead of  $\theta > f$ ) as the true recurrent sound change is not compelling.

While most, then, agree that \* $\theta > f$  has a perceptual component, explanations for the absence of \* $f > \theta$  and the structure-preserving nature of \* $\theta > f$  are disputed.

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7. Enhancement is also invoked by Flynn and Fulop (2014) to account for the noted asymmetry. Under their account, [ $\theta$ ] and [f] share the acoustic-auditory feature [grave]. Since [f] is a better instance of a grave consonant than [ $\theta$ ], [ $\theta$ ]  $>$  [f] can be viewed as an enhancement of this feature.



Kjellmer (1995) makes a general argument that /θ/ is a marked segment, and therefore dispreferred on articulatory and perceptual grounds to /f/. However, Jones (2002) questions this, and follows Miller & Nicely (1955) in suggesting a role for visual cues. Jones (2002: 5) suggests that infants may use visible lip movement as a cue for the weak frication of [f], and then invoke the same production strategy in attempting to produce the very similar acoustic target of [θ]. This suggestion has received experimental support. McGuire & Babel (2012) looked at the strength of audio and visual cues for /f/ and /θ/ identification in CV, VC and VCV contexts and found that that /θ/ is more variable than /f/ in both audio and visual conditions. Since this proposal relies on the pre-existence of /f/ in a language as a *visible* articulatory target, it is also able to explain why context-free \*θ > f sound changes are nearly always mergers: if a language does not have /f/, the visible articulatory target will not be a factor, and, without it, no change will occur. In other words, though [f] and [θ] are confusable in noisy conditions, misperception alone does not appear strong enough to result in a sound change in either direction.

## 7. Markedness?

As similar sound changes from the world's languages are collected and catalogued, an extremely interesting landscape emerges. Most recurrent sound changes have clear phonetic explanations grounded in articulatory, aerodynamic, and/or acoustic properties of speech. In some rare cases, like the θ > f and possible f > θ sound changes catalogued here, a categorical shift appears to take place through innocent misperception, swayed, perhaps, by visual input that biases the learner to use labiodental articulation to reach an approximate auditory target. The “markedness” of [θ] was thought to relate to the articulatory difficulty of interdental fricatives in contrast to labiodental fricatives (Wells 1982; Kjellmer 1995). However, McGuire & Babel's (2012) study may be more informative: they found greater variability for [θ] in contrast to [f], for both audio and visual conditions, suggesting that it is the stability of [f] (unrelated to articulatory effort or difficulty) that may play an additional role in its tendency to dominate categorization.

Recent work demonstrates the complexity of explanation when confronting asymmetries in sound change. In the case of θ and f, cross-linguistic phonemic distribution, variability in articulation, and visual cues present may all play a role. A theory of markedness treating /θ/ as marked and /f/ as unmarked falls short in many ways: it does not predict the many languages that have /θ/ but no /f/; it has little to say regarding the absence of θ > f in languages that do not already have /f/ as a category; and, it appears to duplicate the phonetic explanation above, which suggests that variability and instability of [θ] play a role in its liability to merge. While

we must remain open to true evidence of markedness in phonological systems, as phonetic, historical and typological study of voiceless labiodental and interdental fricatives continues, we will be able to better assess other potential factors that may be involved in context-free changes of these sounds over time.

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PART II

# Indexicality



# Diachronic morphology, indexical function and a critique of the morpheme analysis

## The content and expression of Danish *forstå*

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With a critical assessment of morphomic morphology (Aronoff 1994; Maiden 2008) as point of departure, this paper presents an analysis of the structure of the Danish verb *forstå* ‘understand’ and its development from Early Middle Danish to Modern Danish. Based on a semiotic-functional framework (Andersen 1980, 2010; Harder 1996), the analysis examines the strong past tense form *forstod* ‘understood’ and its relation to the inflection of the simplex verb *stå* ‘stand’. The original isomorphism between expression plane and content plane has been lost, but indexical relations on the two planes ensure that structural meaningfulness is maintained. The structure and development of *forstå* is compared to that of the verb *overvære* ‘attend, witness’, and the paper offers an alternative strategy to Aronoff’s (1976, 1994) morpheme analysis of English *understand*.

**Keywords:** diachronic morphology, Danish, indexicality, morphemes, verbal inflection, paradigms, isomorphism, compositionality, metaphor

### 1. Introduction

The idea of morphological meaningfulness and morphology as a component of language that is distinct from semantics and not a content system plays a significant role in contemporary discussions of morphology. It has done so especially since Aronoff’s 1994 *Morphology by itself*, where he introduces the *morphome* as a term for meaningless phenomena that are purely morphological. An example given already in Aronoff (1976) and repeated by Aronoff and others is the English verb *understand* and the strong *stand*-based inflection of the verb (as seen in, e.g., the past *understood*) despite the lack of *stand* meaning. Henning Andersen has long been a staunch opponent of morphomic analysis from a semiotic perspective, and the idea of autonomous morphology is fundamentally at odds with a functional approach to



morphology, following the functionalist credo that “linguistic elements can only be understood by looking at the jobs they do in communication, because that is what explains why they recur and pattern the way they do” (Harder 1996: 154).

In this paper, I examine the Danish parallel to *understand*, the verb *forstå* ‘understand’, which is likewise derived from the root *stå* ‘stand’ and has strong *stå*-based inflection. I present a diachronic analysis of the emergence and development of *forstå* and a synchronic description of the semiotics of the verb in Modern Danish (ModD),<sup>1</sup> and I compare *forstå* with the structure and development of the verb *overvære* ‘attend, witness’, which is likewise derived from a strong verb, *være* ‘be’, but whose inflection changed in the course of history away from *være*-based strong inflection to weak default inflection.

The point of departure is an outline in Section 2 of the conception of morphology and morphemes within the component model of language and the morphomic analysis of *understand*. In Section 3, I discuss a foundational problem in morphomic morphology, and I present key aspects of morphological analysis in a functional understanding of language as a sign system. Section 4 is a short account of the emergence and development of *forstå* and *overvære*, which are analysed and discussed in Section 5. Two central topics are the concept of metaphorical compositionality and the role of indexical function and (non-)isomorphism. Section 6 offers some concluding remarks.

## 2. Autonomous morphology and the *stand* morpheme

The idea of meaninglessness in morphology plays a key role in the conception of morphology as an autonomous system, since autonomous morphology is thought of as a specific domain of grammar which is not defined by meaning. This way of thinking is a product of the component model of language developed in Generative Grammar (Croft & Cruse 2004: 225–227; Harder 2005b: 148; Jackendoff 2002). In standard component models, there are three components, or modules, associated by interfaces and linking rules: phonology, syntax and semantics.<sup>2</sup> Generative

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1. Abbreviations for Danish language periods used in this paper are EMidD: Early Middle Danish (1100–1350), LMidD: Late Middle Danish (1350–1500), MidD: Middle Danish, ModD: Modern Danish, i.e. present-day Danish (thus I use the abbreviation ModD with a different reference than in the ordinary use where Modern Danish is used for the period 1500–present and divided into subperiods, cf. Skautrup 1944, 1947, 1953). Other language abbreviations used are OE: Old English and MLG: Middle Low German.

2. The lexicon is placed “on top”, across all the three components as its items have phonological, syntactic and semantic properties.

Grammar has a history of ignoring morphology, focusing on syntax as the central “engine” of linguistic structure (Jackendoff 2002: 107). However, this view has been challenged by Aronoff, defending the position that morphology is a component of grammar in its own right.

Aronoff (1994) argues that there are morphological phenomena that are purely morphological, meaning that they lie between morphological features controlled by syntax (morphosyntax) and features controlled by phonological rules (morphophonology) (Aronoff 1994: 28). Such phenomena are named morphemes (ibid. 25), and this concept and the idea of morphomic patterns have been debated over the last couple of decades, notably in the anthology *The Morphome Debate* where morphomic structure is defined as “patterns of morphological realization that are not motivated by phonology, syntax, or semantics” (Luís & Bermúdez-Otero 2016: 1). Oft-cited examples of morphomic patterns are various inflectional paradigms in Romance languages (Maiden 2005, 2008: 308–309). Maiden (2005: 152–164) describes the so-called “N-pattern” in the stem allomorphy of a large number of Romance verbs. In present tense indicative, one stem is used for 1SG, 2SG and 3SG and for 3PL, while another stem is used for 1PL and 2PL (in bold below), e.g. in Italian *sedere* ‘sit’ (1).

- (1) *sied-o sied-i sied-e **sed-iamo sed-ete sied-ono***  
 sit-1SG sit-2SG sit-3SG sit-1PL sit-2PL sit-3PL

The pattern originally emerged in early Romance as a phonologically conditioned alternation, but in later Romance languages, the phonological conditioning was lost, and the languages acquired many new N-pattern alternations without any phonological conditioning. According to Maiden (2005: 159), the N-pattern “is a matter of pure morphology, synchronically independent of phonological, semantic, or functional factors.”

Henning Andersen (2010: 140) convincingly argues against Maiden’s claim of the meaninglessness of the pattern, however, pointing out that 1PL and 2PL have in common that they have multiply ambiguous reference potential in contrast to all other person/number configurations (they refer to the speaker (1PL) or addressee (2PL) and one or more others, addressees or not), and this shared feature of their semantics is reflected in the stem alternation as a grammatical index. Thus, this example of a morphome is not a convincing argument for Aronoffian autonomous morphology, so let’s turn to the case of *understand*.

In his 1976 monograph on word formation, Aronoff describes how words may be composed of distinct formal parts with a particular well-defined morphological behaviour but without, he argues, their own stable meaning (Aronoff 1976: 8–14). An example of this is the verb *stand* and the prefixed derivative *understand* (Aronoff 1976: 14–16). The simplex verb has multiple senses (*I stood in the corner, I can’t*

*stand that guy*, etc.), but always exhibits the same strong inflection, viz. the form *stood* in past tense and perfect participle, a case of a systematic, well-defined morphological behaviour without a constant meaning.<sup>3</sup> The fact that *understand* (and all other derivatives, e.g. *withstand*) has the strong inflection of *stand* (past tense and perfect participle *understood*) is even more compelling to Aronoff, as – in his view – it is impossible to pose any relation to any of the senses of the root *stand*, or to the meaning of the prefix *under-* (ibid: 14). The inflection of *understand* is brought up again in the presentation of the morpheme in Aronoff (1994:28) as a case of inheritance of irregular morphology, this time with an emphasis on how such irregular morphology is inherited despite “absence of compositionality”.

Aronoff uses the case of *understand* in his argument against the conception of the morpheme as the minimal meaningful element, i.e. a sign that associates expression (*signifiant*) and content (*signifié*). The line of reasoning in the rejection of the meaningful morpheme is based on a very narrow definition of the morpheme, associated with the Bloomfieldian tradition of American Structuralism, as a monolithic one-to-one union of a uniquely identifiable expression in the shape of a contiguous string of phonemes and one invariant element of content,<sup>4</sup> a widespread definition among morpheme-sceptics (cf. Anderson 1992: 49; Beard 1995: 6 and *passim*; Steele 1995: 261). Used as the only possible way of conceiving of the morpheme as meaningful, it stands out as something of a straw man from the perspective of the European structural tradition in linguistics (see Section 3.2 below).

Maiden (2008) presents Aronoff’s analysis of *stand* as a morpheme in his discussion of the purely morphological aspects of lexical formatives. Praising so-called *separationist* approaches to morphology (cf. Aronoff 1994: 8–9; Beard 1995) for their acceptance of “a pervasive lack of isomorphism between the meaning of a word-form, on the one hand, and its inner morphological structure, on the other” and for “abstracting away from lexical or grammatical meaning and, indeed, from phonological form” (Maiden 2008: 307–308), he argues that “[w]hat one feels one wants to say about all the different *stands* under consideration is that they are ‘the same word, except they don’t mean the same thing’”, and that one must accept that “the various *stands*, while sharing no lexical meaning, do share the purely *morphological* one of being a lexical formative” (Maiden 2008: 311). Thus, Maiden fully subscribes to Aronoff’s description of *understand* as semantically non-compositional with an inflection inherited from *stand*, which functions as a

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3. The different senses of the simplex verb *stand* seem readily explainable in terms of polysemy and metaphorical extension, but Aronoff explicitly dismisses any such attempt (1976: 16).

4. Bloomfield (1935: 161) defines the morpheme as “A linguistic form which bears no partial phonetic-semantic resemblance to any other form”.

meaningless morpheme, all regarded as evidence of pure autonomous morphology distinct from phonology, semantics and syntax.

### 3. Content and expression of morphology

In this Section, I first discuss a foundational problem in the morphomic understanding of morphology based on a functional sign-oriented critique of generative syntax (Harder 1996), after which I turn to the key aspects of a semiotic functional approach to morphological analysis.

#### 3.1 The problem with autonomous syntax and morphology

As noted above, the idea of autonomous morphology and the morpheme is rooted in a component model of grammar that originated in generative grammar. Morphology regarded as something which is neither phonology, semantics or syntax suffers from the same problems as generative autonomous syntax. Harder (1996: 176–183) describes in detail the fundamental flaw in the idea of syntax as an autonomous module in between phonology and semantics, a formal mechanism that is neither expression nor content (cf. Harder 2005a: 29). This view is not only central in Chomsky's models of grammar, which assign a special status to syntax as the sole engine of structure (Jackendoff 2002: 107–111, cf. Chomsky 1965), but also in a non-syntacto-centric model such as Jackendoff's where syntax is described as a "way-station" between sound and meaning (2002: 126). The problem with this view stems from not fully recognising that all of language is essentially a system for bringing together expression and content, thus ignoring that syntax, too, must concern both expression phenomena and content phenomena. The alternative to this view is the understanding of syntax as a sign system with an expression side and a content side (Harder 1996: 193–196). The relational coding of syntax has both expression and content; an example is the head-modifier relation, which consists of relations between expression elements, e.g. linear order, and relations between content elements, namely the semantics of the head-modifier relation. Thus, it does not make sense to consider syntax as something that is not both expression *and* content, or only one of the two, but an odd third aspect of language, neither fish nor fowl.

Autonomous morphology can be criticised following the same line of reasoning. Taking as point of departure the component model of language, with its flawed conception of autonomous syntax, observations of phenomena particular to the morphological domain lead to the claim of one more autonomous component that is neither fish nor fowl. But morphological phenomena, too, must be described

in terms of expression and content. For example, the number inflection of nouns in English has an expression side: the paradigmatic selection of no ending vs. the ending *-s* (with its allomorphs), and a content side: the specification of singular vs. plural. Thus, morphology is fundamentally a two-sided semiotic system just like syntax: expression morphology, dealing roughly with sub-word-level entities and their relations, and content morphology, dealing with the content elements provided by morphology and their relations.

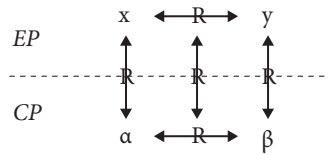
One may want to identify the morphemics of Aronoff and Maiden as the particular expression side of morphology (cf. Maiden's (2008: 307, n.1) comment to Henning Andersen's critique of his understanding of morphology), leaving only the content side of morphology out of the picture (as belonging to a distinct independent component: semantics). However, the whole notion of autonomous morphology and morphemes rests on ignoring the fundamental semiotic nature of language and the entailed demands for careful analysis of that which belongs to the expression side and that which belongs to the content side (cf. Harder 1996: 193, 200). As a consequence, the morphomic approach and the semiotic approach have almost opposite aims. The former programmatically wishes to identify meaninglessness and understand assumed instances of it as just that: proofs of a morphological system that is independent of meaning; the latter wishes to establish the meaningfulness of morphology and search for the functional motivation behind morphological expression and for its meaningful contribution.

### 3.2 Sign relations in grammar

As recognised by the European structural tradition, which provides the background for the Danish brand of functionalism (cf. Harder 1996; Engberg-Pedersen et al. 1996, 2005), grammar is a sign system that associates expression (*signifiant, signans*) and content (*signifié, signatum*), and this is true of syntax (Harder 1996) as well as morphology (Andersen 1980, 2010).

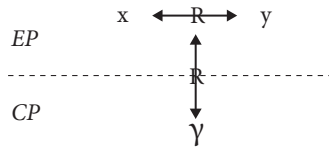
The basic idea of the linguistic sign is the conventional union of an element of expression (or form in the Anglo-Saxon tradition) and an element of content, a "chunk of meaning", usually illustrated with a lexical item such as a noun – the expression *cat* is associated with the content 'cat' in the *sign relation* or *sign function*. However, the sign function is more properly understood as relations between *the expression plane* and *the content plane*, which may be a relation between individual items, but may also be a relation between a relation on the one plane and a relation on the other, the syntax of head-modifier structure described above being an example. To illustrate this, Figure 1 shows how two expression elements *x* and *y* are

each related to “their own” content elements  $\alpha$  and  $\beta$ , and the relation between  $x$  and  $y$  is related to the relation between  $\alpha$  and  $\beta$ .



**Figure 1.** Relations (R) on and between expression plane (EP) and content plane (CP)

However, such symmetry as in Figure 1 is not necessary. The sign function may obtain between a composite structure (i.e. a relation) on the one plane and a simple component on the other as in the case of negation in French where the elements *ne* and *pas* form a complex expression associated with the content ‘not’. This is illustrated in Figure 2 (the simple content element represented as  $\gamma$ ).



**Figure 2.** Asymmetrical relations (R) on and between expression plane (EP) and content plane (CP), two expression components, one content component

The semiotic structure illustrated in Figures 1 and 2 forms the basis of the alternative to the monolithic understanding of the morpheme concept noted above in Section 2. As the minimal association of expression and content, the morpheme is not necessarily a one-to-one union of an invariant phonetic segment and an invariant meaning; it is the product of the association of an identifiable expression feature, simple or complex, and an identifiable content such that the expression feature is “a difference, which makes a difference” (Bateson 1972:460).

The non-monolithic description of the sign function between expression and content entails that the structure on one plane does not need to be one-to-one identical on the other plane, cf. the French negation and Figure 2. Indeed, lack of total inter-plane isomorphism can be regarded as a prerequisite for any bi-plane model of the linguistic sign system, as total isomorphism would entail that a bi-plane description would fall victim to Occam’s razor (cf. Hjelmslev 1943:99). As a system, language is motivated and shaped by the needs of communication and therefore the need for *utterances* to be functional associations of expression and content, and it is thus not necessary – nor a constitutive feature – that any element of expression

always align directly with an element of content or vice versa, nor that any specific relation on one plane be mirrored faithfully and directly on the other plane.

An example of non-isomorphism from syntax is the dummy expression subject *det* of meteorological verbs such as *regne* ‘rain’ in a language such as Danish that has mandatory subject expression. The obligatory dummy subject is functionally motivated in two ways: it is a practical generalisation of the way sentences are organised in Danish – there is an expression slot for the topical nominal argument, also in the peripheral case with no such argument – and it provides the item for marking declarative vs. interrogative speech act: *det regner* ‘it’s raining’ vs. *regner det?* ‘is it raining?’ (Harder 2006: 101, 111–112). This example demonstrates that language does not stop being a functionally motivated sign system because of cases of non-isomorphism where the number of items and kinds of relations are not identical across the two planes.

Structures on the expression side may get a life on their own, and expression and content may shift relative to each other. In Danish there is an ongoing shift on the expression side from prefixal expression of particle verbs (2) to the analytical (“loose”) structure where the particle occurs in its own topological position after the object position (3) (Harder 2006: 110; Nedergaard Thomsen 2002).

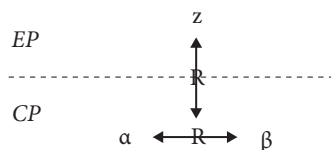
- (2) *hun ud-send-te brev-et*  
 she out-send-PST letter-DEF  
 ‘she sent out the letter’.
- (3) *hun send-te brev-et ud*  
 she send-PST letter-DEF out  
 ‘she sent out the letter’.

This change clearly involves two different expression structures – and a difference in the number of expression constituents – but without a change on the content side. This is a diachronic development on one plane of syntax without an immediate development on the other plane, a case of diachronic non-isomorphism that is evidence of the weak, partial autonomy between the expression plane and the content plane (cf. Harder 1999). However, this partial autonomy is subordinate to the sign relation between expression and content: the structural leeway of the expression structure does not compromise the sign function that always relates the two planes, and it makes syntax no less functionally motivated. Indeed, the wiggle room for non-isomorphism is an engine behind functionally motivated innovation and language change: only if the links between expression and content are not monolithic blocks, but allow for reinterpretation of the relations, is it possible to establish new patterns.

The above general outline of sign structure in language with examples from syntax applies to the fundamental structure of morphology as well. Word structure

and morphological phenomena in word formation and inflection are likewise sign structures (cf. Andersen 2010), and they exhibit similar characteristics concerning the association of elements and relations on the two planes.

Relations between expression and content in morphology can be symmetrical as illustrated in Figure 1, e.g. in compounds such as *chokolade-kage* ‘chocolate cake’ (the expression items *chokolade* and *kage* and the relation between them correlate with the content items ‘chocolate’ and ‘cake’ and the relation between them), or the number inflection in *kage-r* ‘cake-PL, cakes’. We also find asymmetrical, non-isomorphic relations, for instance in the portmanteau desinences of the declension of nouns in Latin, e.g. the *-us* of *domin-us* ‘master-SG.NOM’ where the expression component *-us* correlates with two content components, singular number and nominative case, i.e. *-us* stands in a relation to the relation between singular and nominative. This may be illustrated as in Figure 3.



**Figure 3.** Asymmetrical relations (R) on and between expression plane (EP) and content plane (CP), one expression component, two content components

A related but slightly different type of non-isomorphism is found in lexical blends (cf. Andersen 1980: 16) such as *brunch* (blend of *breakfast* and *lunch*) and *camcorder* (blend of *camera* and *recorder*), whose expressions are combined chips of the full individual input words that are not meaningful in isolation (e.g. *-unch* is not a morpheme<sup>5</sup>), but typically the “switch point” between the first and the second component falls at a major phonological joint (Mattiello 2013: 112–113, 118, 134). The structure on the expression side of the blend combines fragments of morphemes according to phonological principles, while the content side combines two distinct components, most clearly in *camcorder*, which designates a device that is both a camera and a recorder). This provides an illustrative example of the weak, partial autonomy of the two planes of the sign system in morphology (Nielsen 2017: 271–272). The wiggle room on the two planes paves the way for innovations such as blends.

5. It could be argued that in a strict Bloomfieldian sense, *-unch* must be a morpheme of some kind, given the pair *br-unch/l-unch* (I thank Brian D. Joseph for pointing out this analysis). However, as *-unch* does not occur elsewhere with the identifiable function of expressing, by itself, the content ‘lunch’, such an analysis must be rejected (cf. Mattiello 2013: 117).



An important concern for any functional theory of morphology is morphological content, not least in an argument against the morphomic theory of meaninglessness. My point of departure is the definition of meaning by Harder (1996: 101): “The (linguistic) meaning of a linguistic expression is its (canonical, proper) communicative function, i.e. its potential contribution to the communicative function of utterances of which it forms part”. A morphological contribution may be conceptual, or representational, e.g. number inflection on nouns, or it may be an instruction to the addressee about the internal structure of the syntagmatic whole (how the utterance and its sub-structures are organised), e.g. agreement marking (Nielsen 2016: 43, 293–305, 481–482). In semiotic terms, the contribution of morphological signs is symbolic, indexical and iconic (Andersen 2010: 119–121), and especially the indexical element in morphology (cf. Anttila 1975) plays a central role in understanding how morphological expression is a contribution to the functionality of the full word form and the full utterance, also in instances where the particular morphological expression does not have a clearly representational content. Indexing structure is a contribution, and that type of contribution is also linguistic content (cf. Mel’čuk 2006: 18–19).

Morphomists have also commented on the indexical aspect of morphology. Maiden (2008: 309, n.3) notes that “[t]hose who find the notion of ‘semantic emptiness’ unsettling may be consoled by the fact that the augments<sup>6</sup> do possess a kind of *intramorphological* ‘indexicality’: an augment ‘points to’ a preceding lexical root-formative ...”. However, this stance towards the concept of indexical meaning clearly demonstrates that such pointing is only a comfort blanket for the faint of heart that are frightened of the supposed emptiness. In a more general perspective, it is a consequence of the component model of grammar – leaving semantics as a separate business to be dealt with on its own – that all that is not representational is, typically, disregarded or at least thought of as second-rate in the assessment of meaningfulness or meaninglessness (cf. Maiden 2008: 308, n.2). In the analysis of the meaningfulness of *forstå* and *overvære* (Section 5), indexicality will play a central part.

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6. Maiden refers to the augment of certain Romance verbs, an element that is added between the root and the person/number inflection in some forms of the present tense, e.g. the *-sc-* in Italian 1SG of *finire* ‘finish’: *fini-sc-o* ‘I finish’ (Maiden 2008: 308–309).

## 4. The history of *forstå* and *overvære*

### 4.1 *Forstå*

Like English *understand*, *forstå* ‘understand’ can be formally analysed as the root *stå*, which as a simplex verb means ‘stand’, and the prefix *for-*. The *for-* prefix in Danish has two origins, the native *for-/fore-* (cf. Old West Nordic *fyrir-*) and the loan from MLG *vor-* (Skautrup 1944: 292, 1947: 82–83). Most verbs with the prefix are MLG loans (e.g. *forlange* ‘wish, demand’, from *vorlangen*), and *forstå*, with its unstressed prefix and main stress on the root, [fɻ'st̥ɔːʔ] – typical of such loans – is counted among the many MLG loans (Skautrup 1947: 84). Among the earliest *for-*verbs, however, some may be native (e.g. *for(e)biuþa* ‘forbid’), and native nouns with the prefix are found, e.g. *forældræ* ‘parents’ (Skautrup 1944: 292–293). The prefix expression is identical to that of the preposition *for* ‘for, before, in front of, to, because of, despite, in order to’ and other senses, typically spatial in a concrete or abstract sense. There are semantic similarities between the native prefix and the preposition, while the contribution of the imported *for-* is at least less clearly related to the meaning of the preposition.

The direct origin of ModD *forstå* is LMidD *forstandæ* (also *forstā*, see below), known since the end of the 14th century (GDO). However, the precursor of *forstandæ* is EMidD *undærstandæ*, known since the middle of the 13th century and found, e.g., in the preamble to *Jyske Lov*, the provincial law of Jutland (*Danmarks Gamle Landskabslove, II* (1933): 7).

*Undærstandæ* is described as a loan from OE *understandan* ‘understand, perceive, take for granted’ (Kristensen 1906: 24; Skautrup 1944: 302). The OE verb is known since the late 9th century (OED: *understand*). It is not a loan or calque, but a native formation (in Old Saxon, Newman 2001) with cognates combining an ‘under’ and a ‘stand’ morpheme that occur later in other Germanic languages, e.g. MLG *understân* and Old Frisian *understonda* (Newman 2001: 185–187; OED). Made from native material, EMidD *undærstandæ* could therefore be considered a calque, which suggests compositionality in the creation of the EMidD verb (see further in Section 5.1). Semantic compositionality certainly is at play in another sense of the combination of *undær-* and *standæ*, ‘stand underneath (something)’, and by metaphorical extension in the related senses ‘take on (a task)’ and ‘dare’.

By the time of the great influx of MLG loans in Danish, *forstandæ* begins to take over as the verb for ‘understand’. According to Skautrup (1947: 84) and ODS, this happens as a direct loan from MLG *vorstan*, but noticeably the verb is made from expression components already in the language. *Undærstandæ* is still used in

the ‘understand’ sense at least until the 16th century, e.g. in (4),<sup>7</sup> but eventually it is only used with the meaning ‘dare’ that has survived until ModD.

- (4) *at efftir wii nw haffu-e forfar-it oc vnderstand-it,*  
 COMP after we now have-IND.PRS.3PL learn-SUP and understand-SUP  
*at guldsmede-ne her i rig-et haffue her till somme*  
 COMP goldsmiths-DEF here in kingdom-DEF have here to some  
*forarbeidit saare wogt sølff*  
 produced most counterfeited silver  
 ‘that after we have now learned and understood that the goldsmiths in this  
 kingdom have until now (some of them) produced most counterfeited silver’  
 (1515).<sup>8</sup>

Thus, as an expression of the meaning ‘understand’, the composition of a prefix associated with a prototypically spatial preposition and the root *standæ* ‘stand’ persists, but the original prefix *undær-* is replaced with *for-*.<sup>9</sup>

Like ModD *forstå*, *undærstandæ* and *forstandæ* were inflected like the simplex verb *standæ*. This strong verb had three stems, the present stem *standæ-* with nasal infix before the final root consonant (Brøndum-Nielsen 1971:4), the past stem *stōth-* and the perfect stem *stath-*. A monosyllabic variant of the present stem without the nasal infix and the final root consonant, *stā-*, is attested in Old Danish (Runic Danish, *ibid*: 171), and the stem variation dates back to Proto-Germanic (Rix et al. 2001:590–592). Around 1400, the disyllabic present stem *standæ-* loses ground to the monosyllabic *stā-*, which becomes the norm (Brøndum-Nielsen 1971:175–176).

The main features of the MidD inflection of *standæ* are as follows.<sup>10</sup> Based on present stem are (a) the infinitive, present indicative plural and present subjunctive *standæ*, *stā*, (b) the present indicative singular *standær*, *stār* and (c) the present participle *standændæ(s)*, *stāændæ(s)*. Based on the past stem are (a) the past indicative singular *stōth* and (b) the past indicative plural and past subjunctive *stōthæ*.

7. In addition to standard Leipzig Glossing Rules abbreviations, SUP is used for supine.

8. GDSS (*Gammeldansk Seddelsamling*, the archive of notes with attested use of words in MidD), *understa*, note no. 3; *wogt* in the archive documentation is presumably a misread *wegt* (i.e. *uegt*) ‘false’.

9. Cf. the 1510 revision of *Eriks sjællandske lov*, the provincial law of Zealand, where an original *undærstandæ* is replaced with *forsto* (Skautrup 1947:101).

10. The account is based on Brøndum-Nielsen (1971, 1973) with some simplification and standardisation in accordance with Brøndum-Nielsen, e.g. unstressed vowels (schwas) rendered as *æ* and long vowels marked by a macron: *ā*, *ō*; imperative and passive forms are left out for the sake of brevity.

The perfect participle was originally based on the perfect participle stem: *stathin*. However, new forms are made on analogy with the present stem; with the disyllabic stem: *standin*, *standit*, and by the end of the MidD period (early 16th century) increasingly on analogy with the dominant monosyllabic stem: *stät*, *stāet*. Following the development of *standæ*, *forstandæ* has two present stem variants, *forstandæ*, *forstandær* and *forstā*, *forstār*, and a past stem, *forstōth*, *forstōthæ*. There is evidence of the same development of perfect participles based on the two present stems as found in the simplex *standæ*: *forstandet*, *forstaad*, *forstoeth* (Brøndum-Nielsen 1971: 209–210), and the same tendency for the monosyllabic present stem to become dominant, leading, eventually, to the monosyllabic stem becoming the only stem in non-past forms in ModD.<sup>11</sup>

In the development from EMidD to ModD, verbal inflection loses the number distinction and the distinction between indicative and subjunctive. In the phonological system, the long *ā* is rounded to [ɔ], represented in writing by *å* since the 1948 spelling reform. This leads from *forstandæ/forstā* to ModD infinitive *forstå*, pronounced [fʌ'sɔ:ʔ] (ʔ marking the prosodic feature *stød*, a kind of creaky voice, cf. Basbøll 2005: 82–87), and the present: *forstår*, past: *forstod*, perfect participle: *forstået* and present participle: *forstående*, viz. still with strong inflection, seen in the past tense.

## 4.2 *Overvære*

Like *forstå*, *overvære* ‘be present at, attend, witness’ can be formally analysed as a strong verb root, *være* ‘be’, and a prefix, *over-* meaning ‘over’ in various concrete spatial or abstract senses (e.g. being above or traversing something or covering something). Both components are old native material. Of particular interest in comparison with *forstå* is the development of the inflection of *overvære* from strong *være*-based to weak default inflection.

The verb dates back to EMidD *ywerwaræ* known since around 1250 (GDO), in LMidD *owerwaræ*.<sup>12</sup> It is a special innovation in the Nordic languages (Falk & Torp 1960: 808) and is not found in other Germanic languages. In two attested examples in GDSS, *owerwaræ* is a translation from Latin, a translation of *superesse* ‘be left

11. I leave the abstract noun *forstand* ‘intelligence’ out of consideration.

12. The earliest attested use in GDSS (*yvervære*, note no. 2) is *ywir varo* (IND.PST.PL) from a manuscript of the Scanic Church Law; the EMidD and LMidD infinitives given here are standardised constructs based on attested forms and the general principles of representation in Brøndum-Nielsen (1971, 1973).

over, be superfluous, survive' and *superabundāre* 'be very abundant'.<sup>13</sup> However, having completely different meanings, these calques are clearly distinct from the native verb. Cognate verbs are found in Modern Norwegian: *overvære* (Bokmål), *oververa* (Nynorsk), and Modern Swedish: *övervara*. The earliest attested use of the Swedish cognate is from 1402 (Söderwall 1884–1918:625). The precise origin and expansion of the innovation is unclear, but the attestation dates would suggest that it is a Danish coinage.

In MidD, the inflectional forms of *owerwærae* followed the pattern of the simplex verb *wærae* 'be'. The main features of the MidD inflection of *wærae* (leaving out non-essential details of the present and the subjunctive) are as follows.<sup>14</sup> Present indicative forms are based on the old root *es-*, singular: *ær*, plural: *ærae*. All other forms are based on stems belonging to the root *wærae*, infinitive and present subjunctive: *wærae*, past indicative singular: *war*, past indicative plural and past subjunctive: *warae*, perfect participle: *wærit* or *wæraet*, present participle: *wæraendæ(s)*.

In the data on MidD *owerwærae* in GDSS, only past, infinitive and participle forms are found, i.e. no present indicative or subjunctive forms are attested. An example of the past indicative plural is given in (5).

- (5) *aar effter gutz byrth mcdlx vpa thet ottende ... owerwore*  
 year after God's birth 1460 in the eighth ... witness.PST.IND.PL  
*werdugh father met guth erkebiscope Tuwe j Lund, ... oc flere*  
 honorable father with God archbishop Tuwe in Lund and more  
*gothe men ... at ...*  
 good men COMP  
 'In 1468 the honorable father with God the Archbishop Tuwe (Tue) at Lund ...  
 and other good men witnessed that ...'<sup>15</sup>

The strong *wærae*-based inflection is seen in the past form *owerwore* in (5) and in other past tense examples (from Kalkar 1881–1918:438): *ouer ware* (from 1397), *offuervar* (from 1594–1603). However, a new weak inflection with one invariant stem, *overvær-*, and the productive default past ending *-ede* emerged and is attested in the beginning of the 18th century: *overværede*,<sup>16</sup> and during the 19th century the weak past tense was adopted in the norm of the standard language (Skautrup 1953:207). The conservative grammarian and lexicologist Christian Molbech denounced the

13. GDSS, *yvervære*, n. 26, dated 1459, and n. 30, dated 1475–1500.

14. The account is based on Brøndum-Nielsen (1971, 1973), cf. footnote 10, above.

15. GDSS, *yvervære*, n. 15, dated 1468.

16. In the work *Dannemarks Riges Historie* (1732–1735) by the playwright and historian Ludvig Holberg (Kalkar 1881–1918:438).

weak past form as a “grave language error” and a “false, made-up” form (Molbech 1859: 377), and examples of the strong past are found at least until the end of the century.<sup>17</sup> Nevertheless, the strong past becomes obsolete, and in ModD the weak past *overværede* is the only acceptable form. In contrast, the Modern Norwegian cognate *overvære* still has the strong past form *overvar* (*Bokmålsordboka* 2007: 752), and in addition to the normal, regular weak past tense form in Swedish, *övervarade*, the strong form *övervar* is still deemed acceptable (*Svensk ordbok* online).

At some point, presumably after the MidD period, a present tense form based on the infinitive stem emerges: *overværer*. It is attested in the middle of the 19th century,<sup>18</sup> but it is unclear when it first occurred. As there are no attested strong inflection present tense forms from any period, it is uncertain if such present tense forms have been in use. Indeed, Moberg (1815: 241) and *Svenska Akademiens ordlista* 7 (1900: 326) state that the Swedish cognate *övervara* has defective inflection with no present tense forms. In any case, by the 20th century the Danish *overvære* exhibits a full inflectional paradigm, all of the forms following the default weak inflection, infinitive: *overvære*, present: *overværer*, past: *overværede*, perfect participle: *overværet*, present participle: *overværende*.<sup>19</sup>

## 5. Explaining *forstå* and *overvære*

It is now time to analyse the diachrony and synchrony of the relationship between expression and content in *forstå* and *overvære* and their inflectional patterns and try to account for the persistence of the strong *stå*-based inflection of *forstå* and the change in the inflection of *overvære* from strong *være*-based to weak default inflection. In doing so, I present an alternative to a morphomic analysis of *forstå* and, by extension, to Aronoff’s analysis of *understand* outlined in Section 2.

The first issue to address is the source of inflectional patterns and lexicalisation. Aronoff (1994: 28) describes the inflection of *understand* as inherited from *stand*. However, there is an important distinction between synchronic and diachronic inheritance of strong inflection not addressed by Aronoff. In productive, “online” composition, e.g. by prefixation, strong inflection is inherited in a synchronic sense, based on a synchronic knowledge of the inflection of the verb stem in the composition. In fossilized – i.e. lexicalised – compositions, strong inflection is inherited in

17. In his account of Danish Golden Age poetry, Vedel (1890: 93) uses the strong past form *overvar*.

18. Example in ODS from the novel *Hjemløs* (2nd edn. 1853–1857) by Meir Goldschmidt.

19. For the sake of brevity, I leave out imperative and passive forms.

a diachronic sense: It is established by the time of the formation of the word, and subsequently it is a part of the lexical properties of the stem. However, it is only historically linked to the strong root. This is clearly the case with *forstå*, reflected in the prosody of the verb in its inflectional paradigm, namely that it has the prosodic pattern of a lexicalised polysyllabic stem (cf. Basbøll 2005: 499–502): *forstå* is pronounced with *stød*, e.g. perfect participle *forstået* [fɹʌ'st̥ɔːʔ̥], which signals that the stem *forstå-* is polysyllabic.<sup>20</sup> The observation that *forstå* is inflected like *stå* may therefore be an “analyst’s fact”, but not a “speaker’s fact”. Since *forstå* is lexicalised and its *stå*-based strong inflection is only diachronically inherited, one may argue that there is no compelling need for an explanation of how *forstå* in ModD has the inflection of *stå*. Nevertheless, the persistence of the inflection that still associates *forstå* with *stå* (at least metalinguistically) makes it reasonable to consider in what way this behaviour of the recurrent element *stå* is functional and meaningful. Likewise, the most charitable testing of the arguments in the morphomic analysis of *understand* and similar composite forms seems to be one that does not brush off the whole issue as a matter of lexicalisation but takes seriously the idea of morphological behaviour that is meaningless and has no content to offer.

## 5.1 Compositionality and metaphoricity

In basic combination of linguistic signs, the meaning of the whole is, by and large, compositional. Compositionality may be limited or absent in lexicalised compositions, fixed phrases etc., but the point of departure is composition. As a default, we expect combinations such as English *under-stand* and Danish *for-stå* to have compositional meaning, viz. that the complex structure is semantically motivated. Aronoff rejects without arguments any compositionality and semantic motivation in the relation between the expression *under + stand* and the content ‘comprehend’. However, several descriptions of the semantics behind the establishment of the content from these two items have been presented (Newman 2001, in addition to his own analysis he refers to two accounts from 1900 and one from 1990). Indeed, as English *understand* is not a loan word or a calque, the innovation must have been compositional, at least to a fair degree,<sup>21</sup> and that alone makes Aronoff’s description

20. Cf. the pronunciation of the perfect participle of the monosyllabic simplex verb *stå* without *stød*: *stået* [s̥t̥ɔːʔ̥]. This prosodic difference in the inflectional pattern appears to be a phonological index of *forstå* as not being composed of *for-* and *stå* in any synchronic sense. However, this line of argument is not pursued any further in this paper.

21. To the extent that the pattern itself ((spatial) prefix + (position) verb) played a significant role relative to the lexical substance of *under* and *stand*, compositionality should perhaps be considered less than total.

questionable at best. Furthermore, the metaphorical aspect of lexical compositions and the metaphorical relations between source items and target meaning (cf. Lakoff 1987) – not taken into consideration at all in Aronoff’s account – are central to the existing analyses of *understand*. The typical metaphorical analysis outlines a metaphorical extension from a concrete spatial meaning of the source items to the abstract mental meaning of the target along the lines of (6) (cf. Newman 2001: 189).

(6) ‘stand under/among’ > ‘be physically close to’ > ‘comprehend’

Thus, it is not correct to say that it is impossible to establish a semantic motivation for *understand*. The motivation existed when the verb emerged, and it is difficult to establish any specific time when the metaphorical compositionality disappeared.

Based on the relations between expression and content shown in Figure 1, metaphorical compositionality can be represented as in Figure 4. The structure of OE *understandan* is shown in Figure 5.

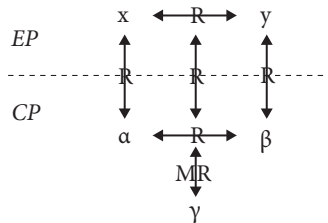


Figure 4. Metaphorical relation (MR) on the content plane

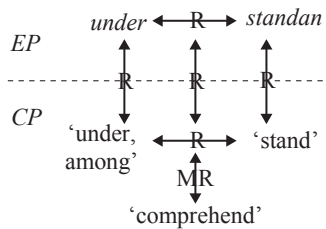


Figure 5. Expression and content of OE *understandan*

Danish *forstå*, its LMidD form *forstandæ/forstā* and its EMidD precursor *undærstandæ* are different from English *understand* and its OE form *understandan* in that they are loans, and as such it is not necessary to assume compositionality (although it is not ruled out by the fact that they are loans). Nevertheless, I argue that it is not unreasonable to suggest that *undærstandæ* was a metaphorically compositional verb, at least when it was introduced to EMidD. Supporting this interpretation



are the fact that *undærstandæ* is a calque constructed with already available native material, and the fact that words meaning ‘comprehend’ made with similar semantic material are found in a wide range of languages, both Germanic (Newman 2001: 187; OED) and others, e.g. Ancient Greek *epistánai* (*Oxford Dictionary of English Etymology*: 959). Indeed, since the propensity to develop ‘comprehend’ expressions in this way is attested cross-linguistically, it is hard to rule out the description of loan translations – made from native material and with native structure – as native innovations based on or inspired by foreign words or phrases, *undærstandæ* being a case in point. The metaphorical compositionality of EMidD *undærstandæ* is shown in Figure 6.

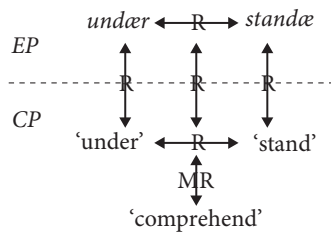


Figure 6. Expression and content of EMidD *undærstandæ*

In the original metaphorically compositional calque *undærstandæ*, we may assume that the metaphorical structure – the metaphorical relation between the content elements ‘under’ and ‘stand’ and the meaning ‘comprehend’ – played a role for speakers. However, any such *essential* metaphorical structure was later lost as conventionalisation and lexicalisation set in. The loss of essential metaphoricity enabled replacement of *undær-* with the more fashionable *for-*, and the metaphorical aspect became opaque. If an original metaphorical structure on the content side is to be considered entirely lost, the structure in Figure 6 would have changed to the structure in Figure 7, i.e. similar to the structure of the French negation (cf. Figure 2).

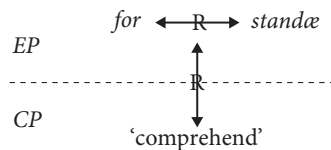


Figure 7. Expression and content of LMidD *forstandæ* without metaphorical structure

*Overvære* was metaphorically compositional from its emergence in EMidD: the concrete spatial meaning of *owær-* (> *over-*) provided the source for the abstract content component ‘proximity’ or ‘attention aimed at something’. With lexicalisation of the

verb, the metaphorical structure became non-essential for speakers. However, the latent metaphorical aspect of *overvære* appears more accessible to modern speakers than that of *forstå* due to the existence of the phrase *være over X* ‘be (very) attentively engaged with X’, lit. ‘be over X’.

## 5.2 Indexicality

In semiotics-oriented approaches to grammar, indexical relations and indexical meaning are an established aspect of syntactic and morphological analysis, owing in particular to seminal works on the topic by Henning Andersen (e.g. Andersen 1980). Linguistic signs are fundamentally symbolic (Andersen 2010: 119), but “to understand the relations among signs – in paradigms as well as in syntagms – purely iconic and purely indexical signatum-signans relations must be considered as well” (Andersen 1980: 5). As noted in Section 3.2, indexical function is a type of contribution to the functionality of the communicative whole, and therefore having the status as an index means having a content and providing a meaningful contribution.

The concept of indexical relations and indexical meaning is usually applied only to the syntagmatic axis, the combination of co-present elements into larger, complex structures. However, the concept also applies to paradigmatic relations, namely the pointing between elements in opposition (cf. Andersen 1980: 5). This type of pointing can be integrated with the syntagmatic pointing in an assessment of the different indexical aspects of grammatical paradigms. In the structural-functional model of grammatical paradigms presented in Nørgård-Sørensen et al. (2011), a paradigmatic selection is a choice between a limited number of signs (a closed paradigm) that is triggered by the domain of the paradigm: the syntagmatic context of the selection, in morphological paradigms<sup>22</sup> typically a class of stems (cf. Heltoft 1996). The choice is mandatory, which means that if the domain is activated, there must be a selection among the options of the paradigm. The link between domain and paradigmatic selection is indexical (cf. Nielsen 2016: 207–209): the domain points to the paradigm and the selection that must be made. To take a simple example, a Spanish count noun stem, e.g. *libro-* ‘book’, is an index of the number paradigm that contrasts singular and plural: *libro-Ø* vs. *libro-s*. Since the paradigm depends on the domain, and following the analysis of all dependency relations as indexical (Nielsen 2016: 114, 147–151), the paradigm and the selections that represent it are indexes of the domain; the Spanish plural suffix *-s*, for instance, is an index of the selection-triggering noun stem.

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22. The model also accounts for paradigmatic selections in syntax and word order: constructional and topological paradigms (Nørgård-Sørensen et al. 2011).

Domains of paradigms and the members of the paradigms are signs with an expression side and a content side. This means that the relation between domain and paradigm is an association between an expression relation and a content relation, which both exhibit indexicality. The expression of the Spanish count noun – the stem – indexes the set of inflectional endings of the number selection (zero vs. -s), and the content of the noun – the designation of a (countable) category – indexes the set of number specifications (singular vs. plural).

The domain/paradigm indexing is the syntagmatic indexicality of grammatical paradigms. In addition, the members of the paradigm index each other. This is most evident in the case of paradigm members with zero expression. Morphological zeros are “meaningful absence” (Melčuk 2006: 470). They are absences of overt paradigmatic alternatives, and it is by virtue of being just that that they may serve as the expression side of a sign. The Spanish singular zero ending conveys the content singular by virtue of being the absence of -s. This entails that the zero expression is an index of the overt alternative. The case of zero expression can now be generalised: Overt expressions in paradigms are also indexes of their paradigmatic alternatives (overt or zero), and the content elements that stand in paradigmatic opposition are, too, indexes of each other.<sup>23</sup>

When the inflection has segmental expression, there is indexing between the stem and the paradigm of affixes – in Anttila’s (1975: 11) words, “paradigmatic structure always diagrammatically indicates the same part vs. the differences” – and there is paradigmatic indexing between the affixes of the paradigm. When the inflection involves stem change as the expression of the paradigm, the paradigmatic indexicality between the components expressing the different inflectional selections gets integrated with the indexing between stem and inflection. Rather than having a syntagmatic indexical relation between stem and inflectional paradigm plus the paradigmatic indexical relation between the expression components of the members of the paradigm, the individual stem variant, with its inflectional value as e.g. present tense or past tense, becomes (a) an index of the stem set as a lexical item (i.e. the set of stem variants belonging together as an element for word-building) and (b) an index of the paradigmatically contrasting alternative stem variant.

In the case of *forstå*, the past tense stem *-stod* has the symbolic content PAST and the indexical content of pointing to the stem set {*stå*, *stod*} and of pointing to its paradigmatic alternative, the stem *-stå*, which in its turn has the symbolic content NON-PAST (rather than PRESENT, since it is used in all non-past forms) and

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23. Cf. the Saussurean description of *rapports associatifs* between that which is present and members of the same ‘mnemonic group’, in absentia (Saussure 1916: 173–175) and Hockett’s Resonance Theory, according to which words and word forms resonate with each other in a vast network of multifarious relations (Hockett 1987: 87–96).

the indexical content of pointing to the stem set {*stå*, *stod*} and of pointing to its paradigmatic alternative *-stod*. The stem variant *stå* furthermore has the indexical content of pointing syntagmatically to the set of affixes for marking the non-past forms *forstå*, *forstår* etc.

On the content side, the indexical relations are the same for *forstå* and *overvære*. In both cases the content element associated with the full stem (including prefix) is an index of the inflectional specifications of the grammatical category verb (i.e. not any specific verb lexeme), and vice versa.

### 5.3 Isomorphism and non-isomorphism

The historical development of *forstå* and *overvære* can be described in terms of demotivation (Brinton & Traugott 2005: 56). In ModD, the content of *for-* and *stå* does not in any direct way motivate the content of *forstå*. The paradigmatic expression pattern of *forstå* is an index of the root *stå* as an expression component, and this indexing of the root *stå* has lost semantic motivation. However, that is acceptable in the semiotic model of the expression and content plane of morphology; just as in syntax, it is not necessary that structures on one plane are always fully and directly motivated. In the case of the MidD *wærae*-inflected *owærwærae*, the content of *owær-* and *wærae* originally motivated the content of *owærwærae*, but also in this verb the motivation was weakened or perhaps lost altogether, and the paradigmatic expression pattern of *wærae*-inflected *owærwærae*, indexing the root *wærae* (> *være*), lost semantic motivation. In this case the loss of motivation provided the background for the “adjustment” of expression, the abandonment of the *være*-indexing inflectional pattern. This leads us to the analysis of isomorphism and non-isomorphism between expression and content in *forstå* and *overvære*.

There are two types of structures whose (non-)isomorphism must be assessed, (a) the relation between the expression components making up the lexeme vis-à-vis the relations on the content side and (b) the relation between the paradigmatic pattern of the inflection and the lexeme or parts of the lexeme. Regarding the former, the relation between the expression components of *forstå* was isomorphic with the content side at the metaphorical stage of *undærstandæ/forstandæ*; cf. Figure 6. Later, when demotivation set in, the relation on the expression side became non-isomorphic with the content; cf. Figure 7. For *overvære*, the relation between the expression components was also isomorphic with the content side at the metaphorical stage. Also in this case, isomorphism was lost due to demotivation. While a metaphorical understanding of contemporary Danish *overvære* appears reasonably justified, the abandonment of the *være*-associated inflection is a clear sign of the interpretation of the verb as semantically non-compositional (i.e.

an interpretation of the structure as being like Figure 2 and thus similar to Figure 7). This role of non-isomorphism in the change of inflection leads us to the assessment of the (non-)isomorphism between the paradigmatic pattern of the inflection and the lexeme or parts of the lexeme.

The expression and content of inflection can be described as the two subsystems of inflection bound to each other in the sign relation. The paradigmatic indexicality between the contrasting options of the expression contributes to the cohesion of the expression subsystem (cf. Anttila 1975 on the cohesive function of indexicality). The indexical structure of the expression subsystem is thus meaningful, but need not be isomorphic with the indexical structure of the content subsystem. In *forstå*, the indexicality of the strong inflection integrates the stem/inflection indexing and the indexing between the paradigmatic options, thus creating a tight relation between the inflection of the verb and the root element *stå*. This is non-isomorphic with the indexing between the predicate content and the inflectional specification on the content side. In *overvære*, we find a similar non-isomorphism at the stage with strong inflection, between the association of inflectional expression and the root element *være* and the structure on the content side. The non-isomorphism regarding the indexicality of inflection is fully acceptable and within the wiggle room of expression vis-à-vis content, as long as expression side and content side team up in the sign function (cf. Section 3.2). The link between the expression plane and the content plane of morphology must provide an adequate means for communication, and the association of structures on the two planes gets evaluated by the language user and in language use over the course of time. This evaluation may lead to changes as speakers “check for isomorphism” (cf. Section 3.2), and that is what happened to *overvære*, which underwent inflection adjustment as a way of creating greater interplane isomorphism. However, this type of improvement of the alignment between content and expression does not necessarily happen, as witnessed by *forstå*, which maintains its strong inflection motivated by expression indexicality.

## 6. Conclusion

With a functionalist scepticism against meaningless morphology as my point of departure, I have examined the development of Danish *forstå* and *overvære* and the structure of the two verbs based on a sign-based theory of morphology, to account for the inflectional behaviour of *forstå* in functional terms and to argue against the morpheme analysis of such verbs.

I have shown how both *forstå* and *overvære* are semantically motivated in a diachronic perspective, and how the persistent *stå*-based inflection of *forstå* shows

itself as a meaningful contribution to the functionality of the verb in a semiotic analysis that recognises the role of indexical meaning. The relation between the expression plane and the content plane in the morphology of *forstå* is not isomorphic, and while isomorphism is often the result of the functional shaping of the sign system, it is not necessary for the understanding of morphology as meaningful, contrary to the line of reasoning in arguments for autonomous morphology. The two sides of morphology have leeway for structural divergence, which may arise over the course of time.

A divergence between expression structure and content structure may lead to adjustments, as witnessed by *overvære*, where the indexical relations of the expression side of inflection were made to fit the indexical relations on the content side. However, while non-isomorphism in the indexical properties of inflection may pave the way for change that enhances the alignment between content and expression, the absence of such change is not evidence of an autonomous component of morphology by itself. Morphology is essentially a content system, and as argued here, meaningful content is found also in non-isomorphic structure, namely in the indexicality in syntagmatic and paradigmatic relations.

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# Word order as grammaticalised semiotic systems

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Meillet (1921 [1912]: 147–48) briefly states that word order is grammatical and that word order change is an alternative way of grammaticalisation, a stance that has had few followers within mainstream grammaticalisation studies. In the context of Henning Andersen's view of morphology and the principles of its analysis, I propose a typology of the ways word order can grammaticalise, i.e. organise in closed paradigms, built on the distinction between symbolic, indexical and iconic meaning.

**Keywords:** grammaticalisation, paradigms, word order, iconic meaning, indexical meaning, symbolic meaning, Old English

## 1. Introduction: The neglect of word order

Most linguists working within the field pay tribute to Meillet as a founding father of the study of grammaticalisation. Surprisingly, however, his views on word order and word order change as an alternative way of grammaticalisation have had few followers within mainstream grammaticalisation studies. “Word order change has not been regarded as a case of grammaticalization”, Sun & Traugott (2011: 378) conclude. Word order change, “whether a shift from discourse-prominent to syntax-prominent order, or from OV to VO, may result from and be a trigger for grammaticalization of morphosyntax”. According to them, word order change is not a grammaticalisation process – a stance implying that word order does not form grammatical systems. Word order and word order change are external to grammaticalisation and grammar in the sense that they may follow from morphosyntactic change, or vice versa, induce morphosyntactic change.

Joseph (2015: xiii) quotes Meillet on word order, without further comments on the issue. Meillet's point is that word order and morphology can be similar with respect to grammatical function, although formed differently. Word order is

in some cases an alternative and different expression system, one might say. Word order change can lead to new grammar and even to grammar where there was none before. The stylistic value of Latin word order was replaced in French by fixed word order as in *Pierre bat Paul* ‘Peter beats Paul’ vs. *Paul bat Pierre* ‘Paul beats Peter’ (Meillet 1921 [1912]: 147–48).

The present article is an attempt to take Meillet seriously, in the context of Henning Andersen’s view of morphology and the principles of its analysis. Henning Andersen’s semiotic background is Peirce’s semiotic theory, with a specific focus on the sign theoretical difference between symbolic, indexical and iconic meaning, cf. Andersen (1980). My point of departure will be Andersen’s (2010) detailed exposition of the theory’s use in morphological analysis and in historical morphology. To what extent will Andersen’s use of Peirce’s sign theory shed light on the grammatical functions of word order and the relations of word order to morphosyntax? How can the Peircean sign typology be applied to word order? What are, in this respect, the differences between morphology and word order – referred to from here on as topology, the systematic organisation of word order as a part of grammar? The exposition will run as follows:

1. Introduction: the neglect of word order.
2. Symbolic and indexical signs in morphology.
  - 2.1 Andersen’s analysis of Latin *cucurristi*.
  - 2.2 Indexicality in the analysis of case and word order.
  - 2.3 The symbolic function of constructional case.
3. Word order systems as diagrams of morphosyntactic structure.
  - 3.1 Valency, construction and topological diagrams: Danish direct objects and prepositional objects.
  - 3.2 The semantic change of *several* and diagrammatic mappings.
4. Word order differences as symbolic signs.
  - 4.1 Diagrammatic representations of information structure.
  - 4.2 Germanic V2 examples.
5. The example of Old English.
  - 5.1 V2 order and SOV order in Old English.
  - 5.2 Topological integrity of pronominal forms.
  - 5.3 Examples for topological generalisation.
  - 5.4 The grammatical function of the second position in Old English.
6. Conclusion.

## 2. Symbolic and indexical signs in morphology

Symbolic and indexical signs will be discussed first. The function of iconicity will be easier to expose once the other two concepts have been introduced.

Indexicality is the tricky concept in this context, and the reader should *not* think of the standard prototypical examples of genuine indices in Peirce's theory: natural signs (depending on causality, e.g. smoke as an index of fire) and from the world of non-natural signs, the contextually determined use of personal pronouns as deictic signs. The relevant subtype of indices is the so-called *degenerate* (or derived) index, relating to mental, not to external objects. Prototypical examples are the letters A, B, C used for the corners of a triangle, or from linguistics, relative pronouns and relative subordinations. Indexical sign relations are redundancy relations and will normally presuppose and relate to a symbolic sign relation elsewhere in the relevant syntagmatic or paradigmatic structure.

### 2.1 Andersen's analysis of Latin *cucurristi*

Andersen (2010: 219–20) demonstrates how complex morphological signs like Latin *cucurristi* 'you have run, you ran' (present perfect 2SG) can be analysed in terms of symbolic and indexical signs. His analysis is a comment to Matthews (1972: 135), who makes no use of Peirce's notions, but intends to show complexity in morphological analysis, e.g. the manifestation of one meaning unit 'Perfective' in three different expressions: *ku-* (the reduplication syllable), *-is-* (the first perfective morpheme), and *-ti* (the 2P morpheme). Andersen tackles the example as shown in Figure 1.

Table 8.2 Latin *kucurristi* 'you.sg ran, have run'

Content:	'run'	+	Perfective	Present	+	2nd	+	Singular	
	↑		↑	↑		↑		↑	
		↗		↖		↗		↑	
Expression:	kukurr-	+	-is-	+	∅	+	-tī-	+	∅
			→						

Figure 1.

All vertical arrows show symbolic sign relations, all other arrows, horizontal and 45°, show indexical sign relations. Horizontal arrows are within one side of the sign, content or expression; vertical arrows and 45° arrows connect expression and content.

The perfective morpheme *-is-* has a bound variant found in double vocalic surroundings, namely *-er-* (showing so-called rhotacism); the form *-is-* indexes the expression feature responsible for the non-occurrence of rhotacism, namely the context *-ti*. Notice that this horizontal index is within the same plane of the sign, here the expression plane.<sup>1</sup>

The present tense morpheme is zero, as shown by its opposition to the past in *-a-* in *cucurr-er-a-s* (past perfect 2PSG); the 2P is *-ti-* in the context present perfect, an occurrence conditioned by the content elements present and perfect in collaboration.<sup>2</sup> All 45° index relations relate an expression feature to some content feature of another sign.

The reduplication syllable *ku-* is an unproductive stem extension found only in the perfective stem of certain verbs.

Finally, to the ending *-ti-*, a zero morpheme  $-\emptyset$  for SG must be added, cf. the PL in *-ti-s*, *cucurristi-s* ‘you.PL have run/ran’.

In this example from a classical inflectional language, fusional morphology is manifest in the case of *-ti*, symbolising its 2P content and indexing the symbolic content of other morphemes.

## 2.2 Indexicality in the analysis of case and word order

We move now to the analysis of case and word order within clauses. According to Henning Andersen, “the content syntactic properties (valence roles) of verbs (as well as of ‘transitive’ adjectives and adverbs) are specified in the respective lexical entries and/or by general grammatical rules; they are indexed by different morphological cases or by different word order” (Andersen no year: 3).

The sign function of what is normally called syntactic case can be understood in terms of indexicality. A German verb like *empfehlen* ‘recommend’ is a three-place verb taking a subject agent, a direct object (DO) patient and an indirect object (IO) beneficiary. The verb with its syntactic roles bears the symbolic sign function, and the roles are indexed, see (1a, b), by the cases nominative (subject index), accusative

1. An overview in German is Nöth (2000: 59–69, 185–187); Nöth (2008: 73–100) is also useful.

2. I miss an arrow here from the expression *-ti* to ‘present’, since this ending is only found in the present perfect.

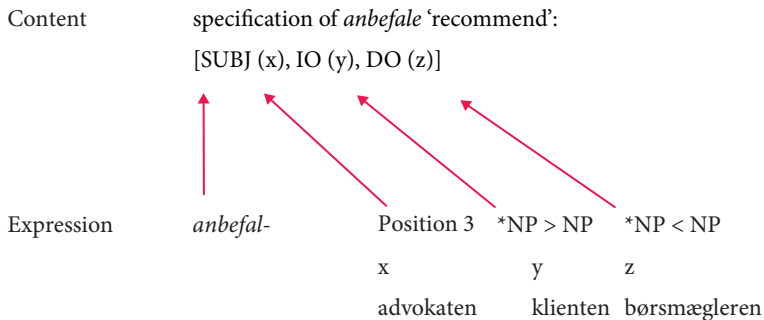
(DO index) and dative (IO index), thereby signaling which referents are to be picked up by which syntactic functions:

- (1) a. *Der Rechtsanwalt hat dem Klient-en den Börsenmakler empfohlen*  
 the.NOM attorney has the.DAT client-OBL the.ACC stockbroker recommended  
 ‘The attorney recommended the client the stockbroker’.
- b. *Er hat ihm ihn empfohlen*  
 he.NOM has he.DAT he.ACC recommended  
 ‘He recommended him to him’.

In Danish, the same functions are carried out by the lexical symbol and the positions of the relevant NPs, that is: by word order as the expression plane of an indexical system.

- (2) *Anbefalede advokaten (x) klienten (y) børsrådgiveren (z)?*  
 Recommended the attorney the client the stockbroker?  
 ‘Did the attorney recommend his client the stockbroker?’

The details are laid out in Figure 2.



\*Later than position 3.

y > z: NP (y) precedes NP(z).

z < y: NP (z) follows NP (y).

**Figure 2.** The Indexicality of modern Danish word order

These examples (modelled on Andersen’s analyses) are quite simple, especially because the symbolic function is only with the predicate and the indexes only with case and word order. We need to discuss some complex examples in order to specify in what respects the sign functions of word order relate to those of morphology.

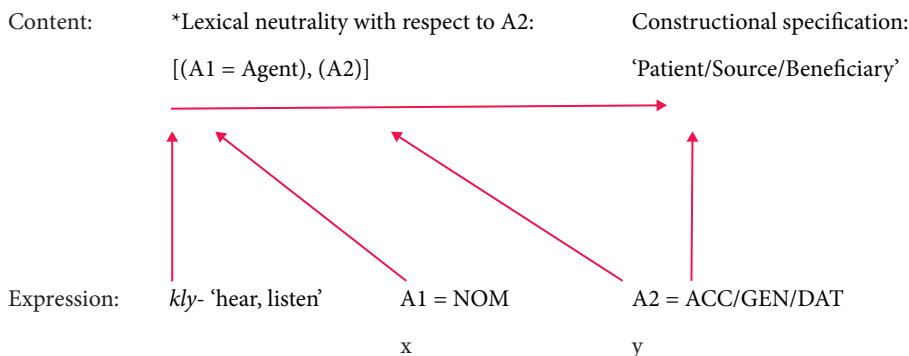
### 2.3 The symbolic function of constructional case

Old Indo-European case systems had symbolic case, a well-known residual example being Latin *cave canem* (ACC) ‘beware of the dog’ vs. *cave cani* (DAT) ‘take care of the dog’. The paradigmatic content opposition between the accusative and the dative is a symbolic one, say: between patient and interessee. The verb *caveo* with its abstract symbolic meaning ‘take care’ is compatible with such a subparadigm, but its stem is neutral with respect to this contrast. Meillet (1964[1937]: 358–59) analyses Greek free case, one example is the verb κλύω *klýō* ‘hear, listen’. With such polysemous verbs, the verb stem does not specify the relation between the referents of the arguments, but the choice of case does. I call this constructional case; see Nørgård-Sørensen (2011: 121).

- (3) a. ἔκλυον ἀυδῆν  
 ěklyon aúdĕn  
 ‘they were listening to a voice’.
- b. ἔκλυον αὐτοῦ  
 ěklyon aútou  
 ‘they were listening to him’.
- c. εὐχομένῳ μοι ἔκλυον  
 eúchoménoi moi ěklyon  
 ‘they were listening to me praying’ (i.e. ‘to my prayers’).

Here, the accusative (3a) symbolises the patient role, the dative (3b) the recipient role, and the genitive (3c) the source role. It makes no sense to speak of indices where the semantic roles are concerned; indexicality is reduced to a minimum, namely that of indexing the existence of an argument A2 not specified by its verb. Still, the indexing of the abstract A2 shows that (3a, b, c) are all examples of the verbal nucleus construction.<sup>3</sup> More importantly, the semantically underdetermined or neutral stem indexes the case paradigm for A2 as the locus for semantic specification; cf. the horizontal content arrow in Figure 3.

3. Meillet includes free adverbial adjuncts in this type: οὐασι κλύω *oúasi klýō* ‘I listen with my ears’ and οἴκοι κλύω *oíkoi klýō* ‘I listen when at home’, but such adjuncts have no indexical relation to the verbal stem, that is, they do not specify it semantically.



\*The horizontal arrow is an example of an indexical relation at the content plane, due to the underdetermined semantics of the verb stem. Informally: 'I cannot specify for semantic role in A2, consult my morphosyntactic specification partners', the stem says.

Figure 3. Greek constructional case. Examples (3a, b, c)

### 3. Word order systems as diagrams of morphosyntactic structure

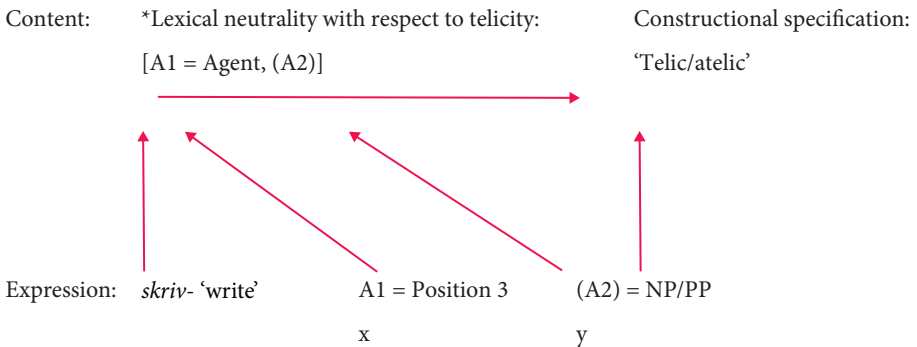
Andersen (2010) briefly mentions that word order systems can be iconic as well, typically in the form of diagrams, that is: isomorphic mappings of content relations onto linear constituent ordering. I shall be more specific at this point later on; first, I need to introduce a parallel to Meillet's analysis of Greek from a word order language, namely Danish.

#### 3.1 Valency, construction and topological diagrams: Danish direct objects and prepositional objects

Constructional paradigms analogous to the Greek case example are found with Danish direct objects and prepositional objects; the paradigmatic semantic frame is not semantic roles, but telicity, cf. Durst-Andersen & Herslund (1996); Hansen & Heltoft (2011). Many Danish transitive verb stems are neutral to the telicity distinction between telic and atelic readings, a distinction manifested by the choice of direct object vs. prepositional object as in (4a, b):

- (4) a. *hun skrev en roman*  
'She wrote a novel', i.e. completed it. (telic)
- b. *hun skrev på en roman*  
'She wrote on a novel', i.e. wrote with the intention of completing a novel. (atelic activity)





\*The horizontal arrow is an example of an indexical relation at the content plane, due to the neutrality of the verb stem with respect to telicity. Informally: 'I cannot specify for telicity, consult my morphosyntactic specification partners', the stem says.

**Figure 4.** Danish transitive verbs

The opposition telic vs. atelic is a symbolic opposition expressed by the choice of direct object vs. PP-object, respectively. The unmarked preposition is *på* 'on', cf. Durst-Andersen & Herslund (1996) for detailed information about the set of prepositions available.

Figures 3 and 4 show a basic structural similarity between the Greek and the Danish constructions, except for the fact that Danish as a word order language adds an obligatory topological layer to the symbolic and indexical relations. NP objects and PP objects hold different positions.

- (5) a. *skrive romanen færdig*  
 write the novel finished  
 'complete the novel'.  
 b. *skrive romanen om*  
 write the novel over again  
 'rewrite the novel'.  
 c. *skrive om på romanen*  
 write over on the novel  
 'add changes to the novel'.  
 d. *skrive på romanen*  
 write on the novel  
 'be in the activity of writing the novel'.

Such topological differences can be conveniently illustrated with so-called sentence frames (see further Section 4), linear representations showing the relative positions of the constituents with a view to some pivot, in the present case the organisation of the VP around the position for nonverbal predicates (P). Now the NPs preceding

the position for nonverbal predicates are always objects, but the PPs following P need not be PP objects, but can be valency bound PP arguments of all kinds, e.g. locative arguments *han stillede vasen i vinduet* ‘he placed the vase in the window’ and with an explicit P: *han stillede vasen ud i vinduet* (lit.:) ‘he placed the vase out in the window’. Thus, the isomorphy of morphosyntax and topology applies to the NP vs. PP opposition, not to the telicity opposition. The mapping is from telic object construction vs. atelic object construction to NP vs. PP, and further onto NP position vs. PP position; but the reverse does not hold.

(6) Positions for:	V	NP	P	PP
	skrive	romanen	færdig	
	skrive	romanen	om	
	skrive		om	på romanen
	skrive			på romanen
	stille	vasen	ud	i vinduet
	stille	vasen		i vinduet

A Peircean diagram is a subtype of the iconic sign function. *Relations* (not qualities<sup>4</sup>) at one level are mapped onto relations at another level, and the relationship is bidirectional or isomorphic. Thus, the positions for NP, P and PP diagram the constructional layout of (4ab). The NP position diagrams object arguments, the PP position diagrams PP arguments. Positional layout diagrams the morphosyntactic level of the construction.

However, the telicity paradigm is not part of the diagram. The paradigmatic opposition of NP telic vs. PP atelic must make use of the mapping of the direct object NP onto the NP position (NP > P), and of the prepositional object onto PP position (P > PP), but the NP-PP diagram has a wider range of application than the telicity paradigm.


### 3.2 The semantic change of *several* and diagrammatic mappings

Given the above example of diagrammatic morphosyntax and topology, we can apply it to Breban’s analysis of the bleaching of *several* (2008) and its role in Sun & Traugott (2011). In earlier stages of English, *several* meant ‘separate, distinct’, later also ‘respective’, acquiring in Modern English the meaning ‘rather many, a considerable amount of’, a bleaching process from an adjective to a numeral quantifier. Sun & Traugott interpret this category shift as a grammaticalisation process leading

4. An iconic sign mapping quality is an image. See Nöth (2008) for a general view of the importance of iconic diagrams in natural language.

to – according to them – a secondary development, namely a word order change from adjectival fourth position in the NP, see (7), to the third position (for numeral quantifiers) as illustrated in (8), the change of position represented by an arrow:

- (7) ... *under easy sail, the ivory Pequod had slowly swept across four several cruising-grounds; that off the Azores; off the Cape de Verdes; on the Plate ... and the Carrol Ground ...* Herman Melville: *Moby Dick*. 1851. New York: Modern Library 1992: 336. Cf. the modern meaning in *several distinct cruising-grounds*.



(8)	Quantifier	Determiner	Numeral	Adjective	N
		<i>(these)</i>	<i>four</i>	<i>several</i>	<i>cruising-grounds</i>
			<i>several</i>	<i>distinct</i>	<i>cruising-grounds</i>

Sun & Traugott are discussed in more detail in Nørgård-Sørensen & Heltoft (2015). Very briefly, we agree that the bleaching process leads to a change of *several*'s category or part-of-speech, but the example does not cast light on the word order issue. A word order change would consist in a change of the basic template or topological frame for the linear ordering of the NP, and this is not the case in the examples discussed by Sun & Traugott. Again, example (8) illustrates the function of topology as a diagram of morphosyntactic structure. Lexical items changing their part of speech and constituent function will be mapped onto the position of the target category, but the positional system itself will not change.

Morphosyntactic templates of the kind shown in (6) and (8) are readily understood as diagrams. Their content side are the syntactic categories, the positions their expression side. They are, in languages like Danish and English, obligatory positional grids for categories of syntactic constituents, and I do not hesitate to call them parts of grammar.

#### 4. Word order differences as symbolic signs

Until now, we have seen that word order systems can be indexes and that they can diagram morphosyntax. In this section, I turn to their function as primary symbolic systems. To show their possible status as parts of grammar, I shall argue that they are the expression systems of closed paradigms, implying that they are obligatory systems that carry grammatical meaning.

The topological analysis will follow the simple principles advocated by Danish linguist and philologist Paul Diderichsen (1941, 1946, 1966 [1943]; cf. Faarlund

1989; Heltoft 1992; Herslund 2006), a distributional analysis of the relative positions without any presuppositions about the character of the relations between constituent types and positions. For instance, the initial position of Danish V2 clauses (see 4.2 below) is open to all types of constituents, except for dialogical particles; cf. the P1 of Simon Dik's word order model (Dik & Hengeveld 1998:408). And the position for subordinations in subordinate clauses is open to *hv*-NPs (*wh*-NPs) and *hv*-adverbials (*wh*-adverbials), the point being that such questions are 100% empirical ones and must be answered by empirical tests.

#### 4.1 Diagrammatic representations of information structure

Symbolic contrasts expressed by word order differences will involve linear differences, that is, an expression system ascribing different symbolic meaning to a constituent according to the position of that constituent. An exclusive symbolic contrast maps onto relative positions.

Examples from (relatively) free word order languages concern information structure and the way it is diagrammed. Mithun (1992) analyses information structure in three languages (Iroquois, Ontario; Ngandi, Australian; Coos, Oregon). Characteristically, these three languages have no basic or preferred word order, but preposed constituents will express status as focus or new topic. In the present context, I choose examples from languages with a topology open to both information structural diagrams and morphosyntactic diagrams.

Old Scandinavian (West and East Norse) had a topological field organisation similar to that of Modern German main clauses. It was a verb second language, but its argument word order was relatively free. It had no fixed subject position, and in relation to the first non-finite verb, both VO and OV order (or generally: VX and XV) were possible. The zone between finite and non-finite verb is called the middle field, and within this morphosyntactically delimited field, backgrounded and focused constituents are subject to word order rules. The system is transparent in clauses with an explicit negation or other focus operators. Middle field constituents preceding a focus operator are background constituents outside the scope of the focus operator; a middle field constituent immediately following the operator must be (at least part of) the focus.<sup>5</sup> Example (9) has a backgrounded subject and a focused direct object.

---

5. The context of (9) shows that the focus is solely on *børn* 'children', since the point is that her family representatives are allowed to take her landowner's rights away from her. In (13), the focus includes the non-finite verb in *iarn bæra* 'carry (fervent) iron', in contrast to *thæt orka* 'this do', i.e. to organise 36 witnesses to swear in favour of your case. Contextual interpretation decides the extent of the focus; grammar says the first constituent after negation must be part of the focus.

(9) *tha mughæ men ei bõrn fra hennæ takæ*

then may men not children from her take

‘Then people may not take the children away from her’

(Jutish Law I, ch. 28, DgI II, 71, 6)

Subjects are not per se in background position, but they may equally well occur in focus position:

(10) *Thænnæ steen ma æi eld skathæ*

This stone can not fire do harm to

‘Not even fire can harm this gem stone.’

(Harpestreng p. 191, 13–14)

An adequate modern translation may run: ‘This stone even fire cannot harm’. Example (11) (from Pedersen 1993) has a backgrounded indirect object *bondanum* and a direct object with the modifier *mera* ‘more, greater’ as the focus bearer.

(11) *han giorthæ bondanum æy mera schatha j thy af hoggi*

he did landowner.D-DEF.D not greater harm in this cut

‘He did not cause a greater loss to the landowner in this cut’.

(Scanian Law, ch. 122, GL p. 25)

Anaphoric pronouns will hold the background position; stressed or emphatic pronouns may count as focus bearers and, as expected, they will hold the focus position. A neat contrast is (12) vs. (13):

(12) *..thy at han seer, at han kan them ey længher nythæ*

because he sees that he can them not longer use

Because he realises that he can no longer use them.’

(ML 61, 16)

(13) *vm han ma æy thæt orka. oc vil han hældær iarn bæra. tha*

if he can not that do and will he rather iron carry, then

*age thæs cost*

have-SUBJ this option

‘if he cannot do this, and he prefers the ordeal by fire, then he shall have this option.’

(Scanian Ecclesiastical Law GL ch. 7, p. 12)

The template for (9)–(13) is (14).

(14) X	V <sup>finite</sup>	Middle field positions			V <sup>non-finite</sup>
		Background	Neg	Focus	
tha	mughæ	men	ei	bõrn fra hennæ	takæ
Thænnæ steen	ma		æi	eld	skathæ
han	kan	them	ey	længhær	nythæ
han	ma		æy	thæt	orka

The focus operator (the negation or some other operator) indexes the positions that express what must be inside its scope and what cannot be. The symbolic contrast between backgrounded and focus function is a paradigmatic one (either a constituent is focused, or it cannot be). What the diagram does is to map this relation onto the syntagmatic axis.<sup>6</sup> Constituent X is either backgrounded or focused, but the syntagmatic expressions differ, and there is nothing but word order to express the difference.

Resuming the paradigmatic point, this is an example of word order that is grammaticalised *per se* in the sense that it is:

- part of a closed paradigm
- the expression system of a symbolic contrast
- the only relevant expression system

(For closed paradigms, see also Nørgård-Sørensen, Heltoft & Schøsler (2011:5–6).

Content:	background	neg	focus	V
	↑	↙	↑	
		↘	↗	
		↑	↑	
Expression: (positions)	pre-negation	neg. pos.	post-negation	
(tha mughæ)	men	æi	<b>børn fra hænnæ</b>	takæ
(han kan)	them	ei	<b>længhær</b>	nythæ
(vm han ma)		æy	<b>thæt</b>	orka
(oc vil)	han	hældær	<b>iarn</b>	<b>bæra</b>
(Thænnæ sten ma)		æi	<b>eld</b>	skathæ
(man scal)		æi	<b>børn (oc)</b>	
		æi	<b>gamlæ</b>	latæ bløth

The positions diagram the content of the paradigm as described above. The position for negation (the expression level) points to the two positional zones, background and focus; the content of the negation demands that something must fall within its scope, something outside, but it does not say what.

**Figure 5.** Indexicality and word order in the information structural diagram of the Middle Danish middle field

6. The Jakobsonian ring of this formulation should not confuse the reader; cf. Jakobson (1960). The mapping involved in the poetic function creates or adds meaning elements of its own to a syntagmatic sequence of signs. The mapping discussed here is the internal sign function of word order.

In Section 2.2, I referred to Andersen's analysis of indexical word order as a way of making Meillet's claim explicit within a semantic theory. This was the first direct counter-example to Sun & Traugott's view that word order systems are not grammatical per se. The second example, then, is the information structural diagram, both in languages with no word order mapping of their morphosyntactic structure (that is: no basic word order, see Mithun 1992), and in languages like Middle Danish with open windows for diagrams of information structure, within morphosyntactic conditions (the topological fields are defined by the finite and non-finite verbs). In Middle Danish, this word order diagram is the only system that codes the background vs. focus distinction, and it cannot be reduced to morphosyntax.

The third system of word order as grammatical per se is the topological use of paradigms including a zero opposition, that is: an empty position that carries symbolic meaning.

## 4.2 Germanic V2 examples

The use of topological zero is well known from Germanic V2 languages, normally (but inadequately) called verb-subject inversion, for instance from German: *Du hast die Mattscheibe* 'You are absent-minded' vs. *Hast du die Mattscheibe?* 'Are you absent-minded?', and from Danish: *Han beundrer hende* 'He admires her' vs. *Beundrer han hende?* 'Does he admire her?' Old Scandinavian had such a system as well, and so did Old English, coexisting with a SOV system. Examples (15)–(18) show four out of five semantic functions of the empty 1st position in the topological template for Old English verb second:

- (15) *Petrus, lufastu me?* (question of acceptance or denial)  
'Petrus, do you love me?'
- (16) *Swiga ðu!* (imperative)  
'keep quiet'.

An empty first position is also found in the so-called connective inversion<sup>7</sup> (sometimes called narrative inversion), probably marking the clause as an immediate continuation, specification or explanation of the preceding utterance, cf. Heltoft (2011b) and Fourquet (1938: 117).<sup>8</sup> In (17), also noticed and interpreted by

7. Old English has conditional verb second to some degree as well. We need not include this detail.

8. The cohesive relations are hard to render in English. Fourquet points to German as a language providing cohesive adverbials such as *nämlich* [Danish *nemlig* is completely parallel], meaning this utterance explains part of the preceding context. For another convincing example, see Fourquet p. 117.

Fourquet, the empty first position will be a signal that the section in italics unfolds the circumstances leading to the death of chieftain Hæsten. This warlord is returning from a pillaging raid just to find himself trapped by King Alfred's army. Hæsten sets out, certain that his own base is well fortified and secure, and certain that the king's army is in its home barracks. He returns home to find Alfred's army at his gates, and the text explains how Hæsten's disaster unfolded, including here this character's perspective:

- (17) *<ond eac se micla here wæs þa þærto cumen... >*  
 and also the great army had come to this place  
*Hæfde Hæsten ær geworht þæt geweorc æt Beamfleote, ond wæs*  
 had Hæsten earlier built the fortress at Beamfleote and was  
*þa ut afaren on hergaþ, ond wæs se micla here æt ham.*  
 then out gone on raid, and was the great army at home  
 'Hæsten had earlier built the fortress at B. and had then gone on a raid, and  
 (he thought) the great army was at home'.  
*þa foron hie to ond gefliemdon þone here. Ond þæt geweorc abraecon...*  
 'Then they (the king's soldiers) attacked and expelled that force (Hæsten's) and  
 broke down the fortifications'. (PC 894)

Finally, negative sentences, in the present case with univerbation of *ne hæfde* to *næfde* through absorption of the proclitic negation (Campbell 1959: 147):

- (18) *Næfde se here, Godes þonces, Angelcyn ealles for swiðe gebrocod*  
 not-had the army, thanks to God the angles wholly and fully destroyed  
 'Thanks to God the army had not fully destroyed the Angles'. (PC 897)

I return to Old English as an example of complex paradigm formation involving both diagrams and indexes in Section 5. A simple demonstration of the role of zero in verb second order can take Danish as a starting point (see also Heltoft 1996):

- (19) *Han beundrer hende*  
 he admires her
- (20) *Hende beundrer han*  
 her admires he  
 'Her he admires'.
- (21) *Beundrer han hende?*  
 admires he her?  
 'Does he admire her?'

Danish has obligatory subjects, but obviously, S – V inversion to V – S is not a sufficient way of describing truth-questions. Once the preverbal position 1 is filled



in (marked below as X), the sentence turns declarative. The zero filling of position 1 is a necessary part of this contrast.

The zero vs. X contrast in Modern Scandinavian verb second languages:

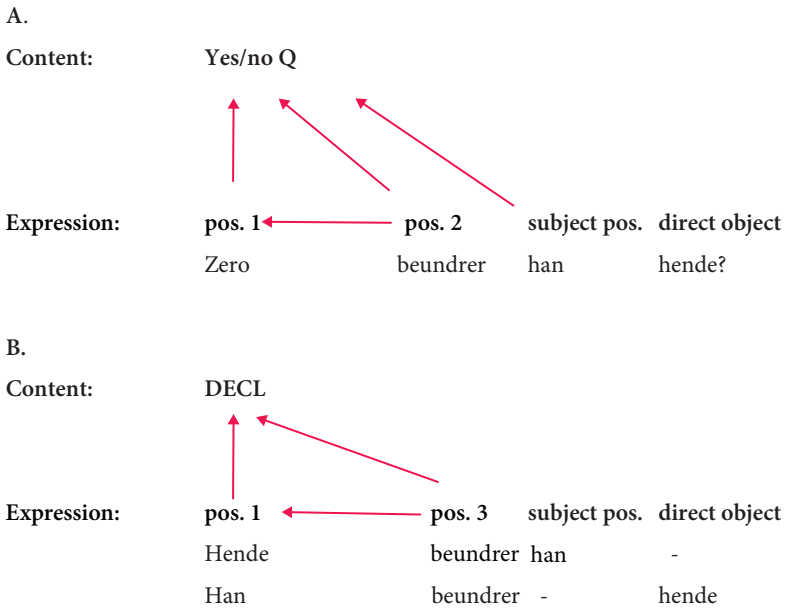
(22)	pos. 1	pos. 2	subject	direct object
	Han	beundrer		hende
	Hende	beundrer	han	
	Zero	Beundrer	han	hende?

Postulating a zero in position 1 will conform to Melčuk's principle for setting up zeroes in morphological paradigms, rendered here in simplified form; there is no substantial difference between zero as applied in morphology and the zero of topology. Three conditions must all hold for a proper zero sign to be admitted. I render them in a simplified, but substantial version:

1. The condition of **expressiveness**: Given a clause or word form E, this must contain some semantic unit that must be ascribed to the zero as its expression.
2. The condition of **exclusiveness**: This semantic unit cannot be ascribed to any other non-zero sign in E.
3. The condition of **contrastiveness**: There must be a possible non-zero contrast in E located in the zero's position. (after Melčuk 2006: 470)

Again, the essence of this is the following: There must be some meaning unit; this meaning unit cannot be ascribed to any other expression than zero; this meaning is in contrast with some other meaning with a positive expression. Structurally empty positions convey paradigmatically well-defined meaning potential and can be distinguished in this way from accidentally empty ones ('empty' because – for instance – the clause has no non-finite verb).

The function of the finite V is to be the well-defined indexical context of the zero sign. In (21), the finite verb is the first positive token, and it indexes the existence of a preceding paradigmatic opposition. Without the finite verb we could not identify the zero position with its content ('yes-no question') as a sign; nor could we in (19)–(20) identify the existence of one filled-in position (by X; it makes no difference which type of constituent) with its content 'declarative'.



**Figure 6.** The zero vs. X contrast in modern Germanic verb second-languages. Danish MC's

The finite V in 2nd position is an index of the preceding topological sign with the 1st position as the locus or syntagmatic domain of a paradigm. Informally, the occurrence of the finite verb tells you that 'I am being preceded by a symbolic paradigm, expressed by X vs. zero.' It identifies the zero and its opposite as signs organised in a paradigm.<sup>9</sup> Analysing morphological zeroes, Nielsen (2016: 204) stresses, "As a zero sign does not have perceivable expression by itself, it relies on something else to show that a sign expressed by zero has been selected." As a direct consequence, he adds a fourth criterion for zero, namely the *criterion of indexical support* (2016: 203–206). Thus, I draw the same consequence for topological zeroes.

9. Notice that in (21) the filled-in subject position is a necessary part of the sign function in Danish. Without it, the output would be a highly marked 'diary style' declarative: *Beundrer hende meget* 'Admire her a lot'. Since Old Scandinavian did not have obligatory subjects, no such special rules will apply at that stage.

## 5. The example of Old English

In this section, I present a sketchy analysis of Old English word order as an example of the way symbolic contrasts of word order may combine with morphosyntactic functions of word order. The analysis begins from scratch and presupposes an open-minded attitude towards the relation between linear word order and syntactic hierarchy, and between position and syntactic category.<sup>10</sup>

The data have been taken from handbooks of OE grammar and from the Parker Ms. of the Anglo-Saxon Chronicle. I have checked Shannon (1964) and Fourquet (1938) for counterexamples to my analysis and found no compelling ones; see Section 5.3.

### 5.1 Old English V2 order and SOV order

Old English preserves SOV order, but introduces V2 order as an alternative option, probably a common Germanic development, since V2 order is also found elsewhere in Germanic and in Old Scandinavian as the only option. (23) illustrates V2, Example (24) is SOV.

- (23) *hē wolde æfter ūhtsange oftost hine gebiddan* (V2 in MC)  
 he would after matins very often him adore  
 ‘He would very often adore him after matins.’ (Quirk & Wrenn 92)

- (24) *him þær se gionga cyning þæs oferfæreld-es forwiernan mehte*  
 him there the young king this.GEN crossing-GEN prevent could  
 ‘There the young king could block his crossing’ (SOV in MC)  
 (Pintzuk 2003; Nørgård-Sørensen, Heltoft & Schøsler 2011: 54)

Now, how to relate the V2 pattern and the SOV pattern? Before confronting this issue, I shall briefly address the problem of clitics and its importance for topological analysis.

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10. I cannot discuss the relation between compositional syntax and topology in this context. Experts of Old English working within Chomskyan generative grammar (Kemenade 2009 and Kemenade & Westergaard 2012) introduce specific categories and positions for the pronouns claimed to be in second position in my analysis of examples (25a, b, c, d), (27) and (29). I take such issues to be purely empirical ones, subject to simple distributional tests. The identification of the second position as a position for both the finite verb and for pronominal NPs and Adverbials is a simple descriptive fact that any theory must cope with.

## 5.2 Topological integrity of pronominal forms

Old English has no reflexive pronouns. Personal pronouns can have reflexive function, and they hold full topological positions. Examples (25a, b) are SOV examples. The pronominal forms *him* have reflexive function, but hold full positions (i.e. they are not clitics). Examples (25c, d) have non-reflexive pronouns. They are SOV examples with full pronominal objects (*hie* twice); (25c) is not a V2 example with a clitic pronoun.

- (25) a. *him þær scip-u begeton*  
 they.DAT.3PL (REFL) there ships-ACC.PL took possession of  
 ‘There they took possession of ships.’ (PC 897)
- b. *ond þa him hamweard for*  
 and then he.DAT.3SG (REFL) homewards went  
 ‘And then he headed for home.’ (PC 855)
- c. *þā burgware hīe gefliemdon*  
 the town people them expelled  
 ‘The inhabitants expelled them.’ (PC 895)
- d. *hē hīe fēdan sceolde and scrȳdan*  
 he the.ACC feed had to and dress  
 ‘He had to feed them and give them clothes.’ (Quirk & Wrenn 1957:93)

I shall say that such pronouns have topological integrity. Examples of languages with pronominal sets without topological integrity are found in e.g. Old French where the atonic pronominal series are genuine clitics (Heltoft 2011b:67–70) and do not hold positions, and in Danish reflexive pronouns (Heltoft 2011a:71–77).

## 5.3 Examples for topological generalisation

Given the basic distinction between topology and constituent syntax, the V2 and SOV patterns can be shown to be systematically related, and at this point my analysis transcends the limits of traditional word order pattern accounts (Fourquet 1938; Shannon 1964). The focus of the analysis is on the position of the pronouns, reflexive or not, in relation to the finite verb in V2. As in the analysis of Danish verb second, only the initial part of the clause will be analysed. The material in the positions compared is in italics. The positions for conjunctions and subjunctions do not count in the topological balance sheet.

- (26) pos. 1 pos. 2 (V2 in MC)  
*þær wearð ofslægen Lucumon cynges gerefa*  
 there became killed Lucumon the king’s representative  
 ‘There Lucumon the king’s representative was killed.’ (PC 897)

- (27) *hira þær tu sæ on land wearp* (SOV in MC)  
 they.G.PL there two.ACC.N.PL sea.NOM on land threw  
 ‘There two of them <i.e. the ships> were thrown ashore by the sea’ or ‘Two of  
 them the sea threw ashore there.’ (PC 897)
- (28) **subj. /conj. pos. 1 pos. 2** (V2 in SC)  
*forþæm þe hiora wæs oþer his godsunu*  
 because that they.G.PL was one his godson  
 ‘Because one of them was his godson.’ (PC 894)
- (29) *ond he hi him eft ageaf* (SOV in MC)  
 and he they.ACC he.DAT back gave  
 ‘And he gave them back to him.’ (PC 897)

According to this analysis, the second position is filled either by the finite verb (V2) or by a pronominal element: NP or ADV. Nothing in the approach will a priori exclude such results, but experts of Old English might object that many examples do not fit in. Such examples have the finite verb as the third token without being convincing SOV examples.

- (30) *Hæstenes wif ond his suna twegen mon brohte to þæm cyninge*  
 Hæsten’s wife and his sons two they brought to the king  
 ‘Hæsten’s wife and his two sons they brought to the king.’ (PC 894)
- (31) *tuegen hleaperas Ælfred cyning sende mid gewritum.*  
 two runners king Alfred sent with written messages  
 ‘Two runners king Alfred sent off with written messages.’ (PC 889)
- (32) *þara Denisc-ena þær wearð ma ofslægen*  
 they.G.PL Danish-G.PL there become more slain dead  
 ‘Of the Danes more were slain there.’ (PC 905; Fourquet 1938: 116)

These examples front valency bound constituents: direct objects (30)–(31) and a partitive genitive relating to the subject (32). With Quirk & Wrenn (1957: 93, §146), I take such examples to be verb second with a left disjunct initial constituent. Their position is external to topology, in what early Dutch functional grammar calls P2 position. Their closest modern cognate is the Modern English translation of (30): *Hæsten’s wife and his two sons they brought to the king*, but (26)–(27) have shown, there is no fixed subject position in Old English, cf. also (33) below.

Due to the style and the narrative strategy of the chronicle, paragraphs often begin with a locative pronoun *her* ‘here’ referring metaphorically to the year in question. Such pronouns are very frequent as the first token in the clause, and this comprises the P2 position, see (33):

- (33) *Her hiene bestæl se here on midne wint. ofer*  
 here he.ACC.3SG (REFL) sneaked the army at mid-winter during  
*tuelftan niht to Cippanhamme*  
 twelfth night to Chippenham  
 ‘Here the army sneaked away at mid-winter during twelfth night to Chippenham.’  
 (PC 878)

Thus, the external position can hold both nuclear disjunct constituents and free adjuncts. I name it EP (External Position) to avoid possible misnomers. Even *þa* ‘then’ is found.<sup>11</sup>

- (34) *þa on þæ-s wife-s gebær-um onfundon þæ-s cyning-es*  
 then on the-GEN wife-GEN conduct-DAT felt the-GEN king-GEN  
*þegnas þa unstillnesse.*  
 thanes the.ACC disquiet  
 ‘Then, in the wife’s conduct the king’s noblemen felt this agitation.’  
 (PC 755; Fourquet 1938:66)

Consequently, the topology of (30)–(34) is the following:

- |                                      |                      |          |  |
|--------------------------------------|----------------------|----------|--|
| (35) EP (for disjuncts and adjuncts) | 1. pos.              | 2. pos.  |  |
| Hæstenes wif ond his suna twegen     | mon                  | brohte   | to þæm cyninge                         |
| tuegen hleaperas                     | Ælfred cyning        | sende    | mid gewritum.                          |
| þara Deniscena                       | þær                  | wearð    | ma ofslægen                            |
| her                                  | hiene                | bestæl   | se here ... to<br>Cippanhamme          |
| þa                                   | on þæs wifes gebærum | onfundon | þæs cyninges þegnas þa<br>unstillnesse |

I assume that EP cannot hold anaphoric subjects. Examples like (36a, b) are therefore analysed as SOV examples analogous to (25c, d), even though the finite verb precedes the non-finite verb.

- (36) a. *he him hæfde geseald gislas & aþas*  
 he.NOM they.DAT had given hostages and oaths  
 ‘He had given them hostages and oaths.’  
 (PC 894)

11. Fourquet claims that there is no such overlap between *her* and *þa*. Still, I found (34) among his examples; cf. (1938:79).

b. <Their king was wounded>

*þæt hi hine ne mehton ferian*  
 so that they.NOM he.ACC not could transport  
 'so that they could not transport him.'

(PC 894)

#### 5.4 The grammatical function of the second position in Old English

As in modern verb second languages, a filled-in second position serves to mark the functional character of the clause, but OE preserves the SOV pattern as well. The two patterns relate systematically: Roughly, the finite verb in second position opens up for illocutionary specification, a PRON or ADV indicates the absence of the X vs. zero paradigm, and thereby of the whole array of illocutionary specification. It symbolises DECL, see Figure 7.

**Domain:** 2nd position

**Frame:** illocutionary potential

**Expression**

**Content**

2nd position holds finite V

Selection of specific illocutionary functions (potential).

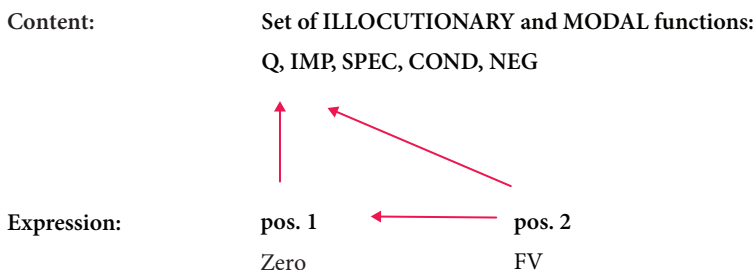
2nd position holds Adv/Pron.

Declarative. No illocutionary specification.

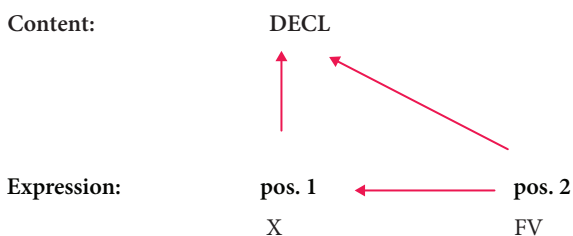
**Figure 7.** Paradigmatic interpretation of the filling of the 2. position in OE

The OE polysemy of the zero first position is different from Modern Danish (connective inversion is no longer an option; negative clauses cannot have zero 1. position) and from Old Scandinavian (negative main clauses with zero first position are not attested). OE and Old Scandinavian have no fixed subject position and no obligatory subject, and thus, no indexical relation will implicate the subject.

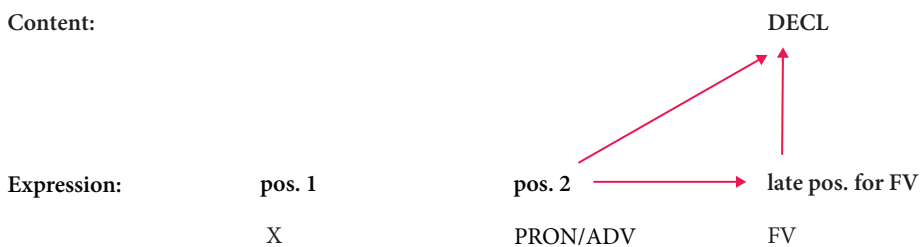
A.a. Zero fills pos. 1; Finite V (FV) fills pos. 2.



A.b. X fills pos. 1; FV fills pos. 2.



B. Pos. 2 is filled by PRON/ADV.



**Figure 8.** The function of the second position in OE topology. Morphosyntactic coding plays a role

The second position is the pivot of OE word order. From its filling, the semiotic potential of the clause is clear. Either it will hold PRON/ADV, pointing indexically to the finite V later in the clause and thereby to its declarative function, or it holds the finite V, pointing to the first position and its content potential. Again, this system is:



- part of a closed paradigm
- the expression system of a symbolic contrast
- the only relevant expression system

## 6. Conclusion

The stance taken by Sun & Traugott that word order is not part of grammar and does not undergo grammaticalisation is not tenable. First, their focus is not on clear-cut examples involving word order in isolation. Next, as Andersen insists, word order differences can be indexical systems and point out relations between syntactic roles and referents, a function they share with morphology, at least of the fusional type. Moreover, word order differences can code symbolic contrasts in ways comparable to morphemes. Importantly, they involve diagrammatic mapping of symbolic contrasts onto the syntagmatic axis. A constituent can be either a focus bearer or a background constituent sheltered from the focus function, and in this way, paradigm members alternate in word order paradigms. Since the expression system is one of precedence (X precedes Y in a given context), alternation must allow the filling of both positions at a time. The same constituent cannot occupy more than one position at a time, but given that X occupies position A, position B is open for Y to occupy. Not so in morphology, where the locus of the paradigm is normally fixed by lexical indexical support (either *can-em* ‘dog-ACC’ or *can-i* ‘dog-DAT’, not both). Thus, the point about topological diagrams is that their positions must be well-defined, syntagmatically and semantically, not that they must be fixed to one locus.

However, word order paradigmatic systems with a fixed locus are in fact found, namely in word order systems with symbolic zero positions, Germanic verb second being the core example. In this case, word order paradigms resemble morphological paradigms: Symbolic contrasts grammaticalise in an opposition including a meaningful zero, and the paradigm is indexed by other syntagmatic elements.

Approached from the right angle, even morphosyntactic templates like (6) and (8) are diagrams. Relations between syntactic functions map onto a linear sequence, also a basic principle in the main bulk of morphology. Now it is time to give the last word to Henning Andersen himself, speaking about the Russian example (37) (Andersen 2010: 119, his ex. (1), in phonemic notation):

- (37) *vi-rva-l-a-s'*  
 OUT:PFV-tear-PST-FEM-INTR  
 ‘It tore loose (escaped)’.

“In agglutinative morphology (1) [= my 37] all the individual expressions of the word are simple symbols. But the string of expressions directly reflects a string of content elements, it diagrams it.”

To my mind, the morphosyntactic templates of (6) and (8) are the topological parallels to agglutinative morphology as represented in Andersen’s example (1).

## Sources

- DgL = *Danmarks gamle Landskabslove*. Eds. Johs Brøndum Nielsen et al. Copenhagen 1933-.
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## Appendix. Tables of central examples from this article

### I. MCs: V2 and SOV

Conjunction	Pos. 1	Pos. 2	Middle field	V	Postfield
	þy geare	<i>gefor</i>	C. ærcebisc.		
	þa	<i>ne mehte</i>	seo fird hie na hindan	offaran	
	hē	<i>wolde</i>	æfter ūhtsange oftost hine	gebiddan	
	hira	<i>þær</i>	tu sæ on lond	wearp	
	hē	<i>hī</i>	him eft	āgeaf	
		<i>Næfde</i>	se here ... Angelcyn ...	gebrocod	
Ond	hie	<i>þa</i>	þær	gefuhton	
	þā burgware	<i>hīe</i>		gefliemdon	
	he	<i>him</i>		hæfde geseald	gislas & aþas

### II. SCs: V2 and SOV

Subjunction	Pos. 1	Pos. 2	Middle field	V
for þæm þe	hiora	<i>wæs</i>	ōþer his godsunu	
þæt	hira	<i>ne mehte</i>	nan to oðrum	
þæt	hi	<i>hine</i>		ne mehton ferian

### III. Disjunction and adjunction

External position	Pos. 1	Pos. 2	Middle field	V
Hæstenes wif ond his suna twegen	mon	<i>brohte</i>	to þæm cyninge	
tuegen hleaperas	Ælfred cyning	<i>sende</i>	mid gewritum	
þara Deniscena	þær	<i>wearð</i>	ma	ofslægen
her	hiene	<i>bestæl</i>	se here ... to Cippenham	
þa	on þæs wifes gebærum	<i>onfundon</i>	þæs cyninges þegnas þa unstillnesse	

PART III

## Problems of reanalysis



# Anticausative and passive in Vedic

## Which way reanalysis?

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In a 2001 publication on reanalysis and linguistic change, Henning Andersen states that “(i)t is not clear yet what constitutes structural ambiguity in surface realizations; this remains a question for the future”. As a tribute to Henning, this paper examines a case of (near-)systematic structural ambiguity regarding Vedic passives and anticausatives and demonstrates that this ambiguity creates serious obstacles to determining whether anticausatives are reanalyzed from passives or vice versa. In fact, given the persistent structural ambiguity it is possible that different speakers preferred different accounts, whether for all relevant verbs, for subsets of the verbs, or even for individual verbs, in individual contexts.

**Keywords:** reanalysis, structural ambiguity, passive, anticausative, historical change

### 1. Introduction

In his long, distinguished career Henning Andersen has repeatedly addressed the issue of what is commonly referred to as reinterpretation. Early publications dealing with language change (1973, 1980) employ the notions “abduction” and “reanalysis”. More recent publications adopt the notion “reanalysis” (e.g. 2001) as construing “a certain type of surface strings differently from previous cohorts of speakers” and actualizing “their reanalysis in usage that varies from received usage ...” (2001:234). Even more recently, “reanalysis” (e.g. 2006) takes on connotations akin to grammar formation in language acquisition, and the historical phenomenon is distinguished as “innovative reanalysis” (2006: 70). As a tribute to Henning, this paper focuses on the issue of the directionality of innovative reanalysis (“reanalysis”, for short) in the relationship between Vedic Sanskrit passives and anticausatives.

In a series of papers, Kulikov argues for reanalysis of anticausatives as passives for one class of anticausatives (1996, 2001/2012, 2011a), but for another class he



proposes reanalysis from passive to anticausative (2011b). I reexamine the evidence and arguments and show that with a few exceptions the Vedic evidence makes it difficult to decide on the directionality of reanalysis. The major problem is that Vedic passives generally lack overt agents and therefore are form-identical to inherently agent-less anticausatives. Put differently, in most utterances the structural difference between passive and anticausative is systematically ambiguous.

## 2. Structural characteristics of passive vs. anticausative in Vedic

From the time of Delbrück (1874, 1888), Speijer (1886, 1896), and Whitney (1879), western accounts of Sanskrit syntax have noted that *ya*-presents with middle voice endings of certain verbs such as *muc* vary between passive ('be released, be freed') and non-passive ('become free'). Kulikov plausibly argues that this variation is to be characterized as one between passive and anticausative, where the latter is defined as referring to actions that take place spontaneously, without implicit agents.

Following Delbrück and Whitney, Kulikov focuses on the fact that in contrast to passives, which always have suffix accent, certain anticausatives (henceforth, *muc*-anticausatives) exhibit variation between root and suffix accent; and just like Delbrück and Whitney he notes that different "schools" or "branches" of the Veda employ (or prefer) one accentuation or the other. See the difference between Rig Vedic (1a) and Atharva Vedic (1b).

- (1) a. *śvātrēṇa*            *yāt*    *pitṛór*                    *múc-ya-se*                    *pári*  
 swelling.INS.SG.N when father.LOC.DU.M release-*ya*-3SG.MID on  
 'when you (Agni) get free through swelling on your parents (the kindling sticks)'. (RV 1.31.4c)
- b. *imá*                    *uptá*                    *mṛtyu-pāśá*                    *yán*  
 this.NOM.PL.M cast.NOM.PL.M death-fetter.NOM.PL.M which.ACC.PL.M  
*ākrámya ná muc-yá-se* (AV 8.8.16ab)  
 enter.CVB NEG release-ANTICAUS-2SG.MID  
 'These fetters of death are cast, having entered which you do not become free.'

While the accent variation is indeed remarkable, its diagnostic value for distinguishing anticausatives from passives is limited (Hock 2016). First, root accent occurs only in some branches of the Veda; others have suffix accent just as in the passive. Second, main-clause finite verbs are accented only clause-initially (and under certain other conditions); in most cases they are unaccented. Third, some Vedic texts do not mark accent differences at all. Fourth, and perhaps most important, according to Pāṇini's Late Vedic grammar (6.1.195), only some roots show (optional)

root accent in the anticausative; others have suffix accent, and their anticausative thus is form-identical with the passive.

By contrast, there is clear syntactic evidence for the distinction in all Vedic schools (other than the Rig Veda, which has no relevant attestations), namely difference in converb<sup>1</sup> control. In passives, the UNDERLYING subject controls the converb, whether the subject is overt or implied, while in anticausatives the SURFACE subject controls the converb; see (2a) vs. (2b).

- (2) a. *na vā ahiṅkṛtya sāma gīyate*  
 NEG PTCLE NEG.making.hiṅ.CVB sāman.NOM.SG.N chant.PASS.3SG  
 ‘For the sāman is not chanted (by a person) not having made (the sound) hiṅ.’ (not: ‘(the sāman) not having made hiṅ’). (ŚB 1.4.1.1)
- b. *imā uptā mṛtyu-pāśā yān*  
 this.NOM.PL.M cast.NOM.PL.M death-fetter.NOM.PL.M which.ACC.PL.M  
*ākrāmya ná muc-yá-se* (AV 8.8.16ab)  
 enter.CVB NEG release-ANTICAUS-2SG.MID  
 ‘These fetters of death are cast, having entered which you do not become free.’ (not: ‘(somebody else) having entered which you are freed (by that person)’).

There can thus be no doubt that passive and anticausative are syntactically (and not just morphophonemically) different from each other. In practice, however, converb control is no more helpful than accent placement, since most attestations do not contain diagnostic converbs.

To this must be added that in the majority of cases, structures classified as passives do not have overt agents: Out of some 290 (putative) Rig Vedic passives found,<sup>2</sup> only 20 instances have unambiguous agent NPs (or about 7%). The remainder is, in principle, ambiguous between passive and anticausative interpretation, except in the rare cases where verb accent may favor one or the other interpretation. (As noted, there are no Rig Vedic passages with converbs.)

Even Kulikov notes that in many cases an unambiguous decision between passive and anticausative interpretation is difficult (e.g. 2001:218–219, 283). For instance, the passage in (3) is considered passive by Delbrück (1888:267–268), Geldner (1951), and Jamison & Brereton (2014), but anticausative by Kulikov (2001:283). Evidently, the root accent on *jīyate* did not prevent most scholars from a passive interpretation. Perhaps they were influenced by the parallel form *hanyāte*

1. Alternative terms include gerund and absolutive.

2. My search started out from Avery (1872); cross-checking with Lubotsky (1997) added further entries. For control, some of Kulikov’s anticausative verbs were included in the search: *jjā, tap, dhṛ, mī, muc, śf, hā*. The verb *jan* ‘be born’ was excluded, since syntactically it is not passive.

with “passive” suffix accent. However, given that root accent on anticausatives is optional according to Pāṇini and is restricted to just some verbs, it would be possible to interpret *hanyáte* as anticausative ‘comes to ruin’ as in the last gloss.

- (3) *ná yásya hanyáte sákhā ná*  
 NEG who.GEN.SG.M slay.PASS(?)3SG friend.NOM.SG.M NEG  
*jíyate kádā caná* (RV 10.152.1c)  
 defeat.ya/ANTICAUS.3SG ever at all

Delbrück: ‘dessen Freund nicht geschlagen, noch je besiegt wird’ (‘whose friend is not slain nor ever is defeated’).

Geldner: ‘... dessen Freund nicht getötet noch jemals vergewaltigt wird’ [‘whose friend is not killed, nor ever scathed’].

Jamison & Brereton: ‘... whose comrade is not slain nor is he ever conquered’.

Kulikov: ‘... whose (sc. Indra’s) friend is not killed, nor ever suffers loss.’

Alternative: ‘... whose friend does not come to ruin, nor ever suffers loss.’

There are even cases like (4), where all translators, including Kulikov (2001: 316), offer a passive translation – in spite of the root accent.

- (4) *śvātréṇa yát pitrór múc-ya-se pári*  
 swelling.INS.SG.N when father.LOC.DU.M release-ANTICAUS-2SG.MID on  
 Jamison & Brereton: ‘when through your swelling in your two parents [=the kindling sticks] you are set free ...’. (RV 1.31.4c)

Geldner: ‘Sobald du mit Kraft in den Eltern entbunden wardst ...’ [‘as soon as you were released in your parents with strength’].

Kulikov: ‘When you (sc. Agni) were released from both parents by force ...’.

Especially interesting are the passages in (5), where Kulikov (2011b) interprets (5a) as passive, but (5b) as anticausative.

- (5) a. *yát svápne ánnam aśnámi ná prātár*  
 if dream.LOC.SG.M food.ACC.SG.N eat.PRS.1SG NEG in.the.morning  
*adhigam-yá-te sárvaṃ tát astu me*  
 find-PASS-3SG all that.NOM.SG.N be.IMPV.3SG I.OBL(CLIT)  
*śívám nahí tát dṛś-yá-te*  
 propitious.NOM.SG.N for.not that.NOM.SG.N see-PASS-3SG  
*dívā* (AV 7.101.1)  
 day.INST.SG (ADV)

Kulikov 2011b: ‘If I eat food in my dream, [and it] is not found in the morning, be all that propitious to me, for that is not seen by day’ (formatting added).

- b. *bālād* *ékam* *aṇīyaskám* *utá*  
 child.ABL.SG.M one.NOM.SG.N more.minute.NOM.SG.N &  
*ékam* *ná + iva* *ḍṛś-yá-te* (AV 10.8.25ab)  
 one.NOM.SG.N NEG like see-PASS-3SG  
 Kulikov 2011b: ‘One [thing] is minuter than a child, and another is as if it were invisible.’ (formatting added).

Unfortunately, Kulikov provides no justification for the different interpretations in (5), and while Griffith’s (1895–1896) translations match those of Kulikov, Whitney (1905) translates both occurrences of *ḍṛśyate* as passive, and the Hindi translation by Śarmā Ācārya (2005) interprets both as non-passive, anticausative; see (5’). As far as I can see, there is nothing in the context in which either passage occurs that would unambiguously tilt the analysis one way or the other.

- (5’) a. *yát svápne* *ánnam* *aśnāmi* *ná* *prātár*  
 if dream.LOC.SG.M food.ACC.SG.N eat.PRS.1SG NEG in.the.morning  
*adhigam-yá-te* *sárvaṃ tát* *astu* *me*  
 find-PASS-3SG all that.NOM.SG.N be.IMPV.3SG I.OBL(CLIT)  
*śívám* *nahí* *tád* *ḍṛś-yá-te*  
 propitious.NOM.SG.N for.not that.NOM.SG.N see-PASS-3SG  
*dívā* (AV 7.101.1)  
 day.INST.SG (ADV)

Griffith: ‘The food that in a dream I eat is not perceived in early morn.’

Whitney: ‘What food I eat in dream, [and that] is not found in the morning...’

Śarmā Ācārya: *ve dikhāi nahīm dete* ... ‘they are not visible’.

- b. *bālād* *ékam* *aṇīyaskám* *utá*  
 child.ABL.SG.M one.NOM.SG.N more.minute.NOM.SG.N &  
*ékam* *ná + iva* *ḍṛś-yá-te* (AV 10.8.25ab)  
 one.NOM.SG.N NEG like see-PASS-3SG  
 Griffith: ‘One is yet finer than a hair, one is not even visible.’  
 Whitney: ‘One thing is more minute (*áṇu*) than a child (*bāla*), also one is hardly (*né* ‘*va*) seen.’  
 Śarmā Ācārya: ... *ek hote hue bhī dikhāi nahīm detā* ... *hai* ‘even if there is one, it is not visible’.

Differences in interpretation by different scholars are by no means restricted to the passages here examined. As noted earlier, even Kulikov acknowledges that it is frequently difficult to decide whether a given verb is passive or non-passive anticausative (e.g. 2001: 218–219, 283).

This uncertainty of analysis further supports the conclusion that Vedic verb forms in *-ya-* with middle-voice endings are of near-systematic ambiguous analysis.

In some Vedic branches, accent placement makes a distinction possible, but only in limited syntactic contexts. The syntactic evidence of converb control does not suffer from this limitation, but the number of passages in which converb control supports anticausative interpretation is extremely limited. The rarity of agent NPs makes most occurrences of putative passives and anticausatives form-identical.

### 3. Historical relationship between passives and anticausatives

A fundamental problem for a historical account of the relationship between passives and anticausatives is that neither can be traced back to Proto-Indo-European as a distinct category. Passives (and corresponding anticausatives) with suffixes reflecting PIE *\*-ye/o-* appear to be regional innovations in Indo-Iranian and Armenian. Historical accounts for Vedic therefore naturally focus on the evidence of Vedic.

#### 3.1 Early accounts

Early approaches agree on classifying *muc*-anticausatives as a subclass of intransitive “Class 4” *ya*-presents, but they differ in accounting for their origin and their relationship to passives. Delbrück suggests that the passive was a secondary development from Class 4 *ya*-presents; the non-passive value of anticausatives thus would be an archaism (1874: 168). Whitney suggests exactly the opposite: a partial “transfer from the passive or *yá*-class, with change of accent” (1879: §761). Speijer suggests an original class of intransitives in *-ya-* that split into Class 4 presents and passives (1886: 240, similarly 1896: 49–50). Unfortunately, none of these accounts is supported by detailed evidence or discussion.

#### 3.2 Kulikov’s accounts and a possible alternative

In his publications, Kulikov goes farther in the direction of an explanation. Regarding *muc*-anticausatives, he argues that the verbs are non-passive Class 4 presents in origin, that root accent is original, and that suffix accent is secondary. Kulikov (e.g. 2011a: 196) finds support for this hypothesis in the fact that root accent is attested in the Rig Veda, while suffix accent first appears in the later text of the Atharva Veda; see (1a) vs. (1b). Suffix accentuation is said to result from reanalysis of intransitive ‘becomes free’ etc. as ‘is released’ etc. and to be supported by the “increasing productivity of the *-yá*-passives”.

However, for another class, with invariable suffix accent (henceforth, “*srj*-anticausatives”), Kulikov (2011b) argues for reanalysis in the opposite direction,

from passive to anticausative. In support, Kulikov gives examples like (5) above, where (5a) and (5b) are claimed to illustrate the original passive and the innovated anticausative function, respectively.

Let us address the second claim first. As we have seen earlier, in passages like (5a) and (5b) it is by no means certain which is passive and which is anticausative; and since *srj*-anticausatives are not distinguished by accent from corresponding passives, the ambiguity is endemic. It is only in later Vedic passages with converbs that some particular instances can be shown to be anticausative, and not passive, in that the converb is controlled by the surface subject, not by some unnamed agent; see e.g. *asrjyata* in (6).

- (6) *tās simānam eva+ ūrdhvā udīrya +*  
 that.NOM.PL.F parting.ACC.SG EMPH above.NOM.PL.F rise.CVB  
*asrjyanta* (JB 3.104)  
 release.ANTICAUS.IMPF.3PL  
 ‘They, rising up above (his) hair parting, **came into existence.**’

The corresponding present, *srjyáte*, appears to be passive in the earliest text, that of the Rig Veda. The chronological difference between Rig Vedic passive and later Vedic anticausative therefore seems to support Kulikov’s (2011b) proposal that the later anticausatives result from reanalysis of original passives. (But see 3.3 below.)

By contrast, Kulikov’s first proposal, that the post-Rig Vedic *muc*-constructions with suffix accent are secondary, is problematic. First, it is not clear how an “increasing productivity of the *-yá*-passives” would have influenced the accentuation of NON-passive anticausatives. Second, as acknowledged by Kulikov, root vs. suffix accent in *muc*-anticausatives varies between different Vedic schools. The difference between the Rig Vedic root accent and the Atharva Vedic suffix accent, therefore, need not be a matter of chronology but may instead reflect differences between different Vedic schools. Finally, as we have seen, although Kulikov (2011b) offers evidence for reanalysis of passives as anticausatives (the *srj*-type), there is no historically verifiable evidence for developments in the opposite direction. Given the evidence examined so far, it is therefore more likely that the *muc*-class anticausatives originated by the same path as the *srj*-type – reanalysis of original passives. The difference in accentuation between *muc*-types (variable accent) and *srj*-types (suffix accent only) could then be attributed to chronological differences. Syntactic converb-control evidence for *muc*-anticausatives is found as early as the Atharva Veda (see (2b)), whereas converb-control evidence for *srj*-anticausatives seems to appear only in later Vedic. One may speculate that those Vedic schools that have root accent for *muc*-anticausatives acquired that accentuation on the model of the equally non-passive root-accented Class 4 verbs; *srj*-anticausatives may have come in too late to participate in that change.

### 3.3 Another alternative account

While there are, thus, plausible arguments for the hypothesis that both *muc-* and *srj-*anticausatives originate from earlier *ya-*passives by reanalysis, there are good reasons for caution.

First, there is the noted systematic ambiguity between passive and anticausative interpretation for the majority of relevant Vedic *ya-*presents with middle-voice inflection (with the relatively marginal exception of structures with overt agents). In this context, let us take a closer look at *srj*, for which forms in *srj-ya-* are attested four times in the Rig Veda (9.71.1a, 9.84.3a, 9.88.5a, 9.95.1a). The standard dictionaries (Grassmann 1873; Lubotsky 1997) list all occurrences as passive, and Jamison & Brereton (2014) offers the same interpretation; Geldner 1951 agrees in three cases, but has a non-passive, anticausative translation in one case; see e.g. (7a) vs. (7b). Similar variation between passive and non-passive translations is common in and between Geldner's and Jamison & Brereton's translations of the so-called aorist passive of the same root, (*a*)*sarji*, pl. (*a*)*srgran*/*(a)**srgram*; see e.g. their translations of Rig Veda 1.38.8c, 1.181.7a, 9.67.15b. What makes all of this variation in the interpretation of such passages possible is the absence of formal criteria distinguishing between passives and anticausatives, as well as the absence of overt (or inferable) agents.

- (7) a. *á yó góbbhiḥ srjyáta*  
 forth who.NOM.SG.M COW.INS.PL.F release.PASS.PRS.3SG  
*óṣadhīṣu á* (RV 9.84.3)  
 plant.LOC.PL.F forth  
 Jamison & Brereton: 'He who is **sent surging** along with the cows onto the plants'.  
 Geldner: 'Der mit Kuhmilch auf die Pflanzen **gegossen wird**' ['who is **poured** on the plants with cow milk'].
- b. *kánikranti hárir á*  
 whinny.INTENS.PRS.3SG tawny.NOM.SG.M forth  
*srjyámānaḥ* (RV 9.95.1a)  
 release.PASS(?).PTCPL.N.SG.M  
 Jamison & Brereton: 'The tawny one keeps roaring as he is **being set loose**'.  
 Geldner: 'Der Falbe wiehert laut, wenn er **hersprengt**' ['The dun horse whinnies loudly, when it **jumps forth**'].

Given these facts, it is possible to speculate that the distinction between passive and anticausative is secondary, not just for this verb but for all other *srj*-type verbs, including the *dṛśyáte* of (5). Under this view, formations like *srjyáte* simply were intransitive, and passive or anticausative readings would have been a matter of

pragmatics (except in the rare cases where an overt or inferable agent tilted the interpretation in favor of passive). Only in later Vedic would some forms of this type acquire unambiguous anticausative (or passive) functions, as indicated by the syntactic evidence of converb control (see e.g. (6)).

Now, as long as we restrict ourselves to the Vedic evidence, this account is problematic, since it fails to explain the fact that in the earliest text, the Rig Veda, *muc*-type verbs clearly distinguish passive from anticausative in terms of suffix vs. root accent. However, for pre-Vedic, the broader Indo-European context supports the present alternative account: The fact that no distinctly passive or anticausative functions can be reconstructed for the PIE verbs in *\*-ye/o-* > Skt. *-ya-*, requires the assumption that the ancestors of our passive/anticausative verbs originally only had undifferentiated intransitive function. (Other PIE *\*-ye/o-* intransitives as well as transitives became Sanskrit non-passive Class 4 verbs.)

### 3.4 A further possibility

Significantly, in contrast to PIE, the Rig Veda does have a distinct passive (as shown by rare examples with instrumental agents), and if the accent evidence can be trusted, it also had the *muc*-type of anticausatives. Given the affinity between passives and anticausatives, it is likely that this situation arose through reanalysis as passives of some PIE intransitive *\*ye/o-* verbs with middle-voice inflection and with anticausative-like value.

So, even if we lack direct evidence for a change from anticausative to passive in Vedic, the possibility of such a change cannot a priori be excluded.

### 3.5 Evaluation and conclusions

There are, thus, at least three different ways that the historical relation between anticausatives and passives can be accounted for. One is similar to that of Whitney's (1879) proposal that anticausatives are secondary developments from original passives; the second resembles Speijer's (1886, 1896) proposal of an original class of undifferentiated intransitives; and the third is compatible with Delbrück's (1874) view that passives are secondary and, by implication, anticausatives are original. The evidence that we have examined suggests that the "Speijer account" holds best for the PIE antecedents, but that for Vedic it would be possible only for *srj*-type verbs. That leaves two diametrically opposed accounts, the "Whitney" one and the "Delbrück" one. As we have seen, the latter one is needed to account for the development of passives from PIE non-passive intransitives; but for Vedic, the former



one seems to be more appropriate. A possible conclusion is that these two developments differed in chronology.

However, the fact remains that in most instances there is no unambiguous evidence favoring passive or anticausative interpretation: Except in rare cases, agents (that would favor passive interpretation) are absent; root accent (which for *muc*-verbs would favor anticausative) is limited to certain schools and syntactic contexts; and the evidence of converb control (which could disambiguate between the two analyses) is absent in the Rig Veda and rare in later Vedic. Under such near-systematic conditions of structural ambiguity, it is possible that different speakers preferred different accounts, whether for all relevant verbs, for subsets such as *muc*- vs. *srj*-verbs, or even for individual verbs, in individual contexts.

This may seem like an unfortunate conclusion to such a lengthy discussion, but only through such a discussion is it possible to demonstrate the difficulties of analysis that obtain in cases of systematic (or near-systematic) structural ambiguity. In that sense, I hope this paper makes a contribution to addressing the concern raised by Andersen in his 2001 publication, “It is not clear yet what constitutes structural ambiguity in surface realizations; this remains a question for the future” (234).

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# Grammaticalization and degrammati(calizati)on in the development of the Iranian verb system

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The present article contributes to the current theoretical discussions regarding the issues of *grammaticalization*, *degrammati(calizati)on* and *reanalysis* as practiced by scholars working predominantly in West European, Greek and Slavic languages. It brings into discussion relatively under-represented data from the West Iranian languages by surveying fundamental morphological and syntactic changes observable in the development of the verb systems of Persian, Tajik, Kurdish and Balochi: (i) the realignment of the Old Persian possessive construction as the finite verb form in Middle Persian, (ii) the establishment of the analytic Perfect in Early New Persian, (iii) degrammati(calizati)on of the copula in the Perfect aspect in Kurdish and Balochi, (iv) grammaticalization of the adverb *hamēw* 'always' as the Imperfect marker in Early New Persian, (v) the formation of the modal future tense in New Persian, and (vi) the role of grammaticalization and degrammati(calizati)on in the renewal of the passive diathesis in Early New Persian.

**Keywords:** grammaticalization, degrammati(calizati)on, tense/aspect system, perfect, evidential, conjectural, passive diathesis

## 1. Introduction

A long time ago, Kuryłowicz (1965) in his study of the evolution of grammatical categories described various paths of 'grammaticalization' elaborating on the affinity of derivational and inflectional categories in terms of the recategorization of the former into the latter along the cline Diathesis > Aspect > Tense. As far as the grammaticalization of temporal and aspectual categories is concerned, a number of cross-linguistic generalizations regarding them were provided more recently by Heine (2003:594). They include: (i) future tenses (derived from motion and

volition schemas), (ii) progressives (from location, action and companion schemas), (iii) completive markers (from verbs meaning 'finish'), (iv) iterative aspect markers (from verbs meaning 'turn' or 'return'), (v) present tense and imperfective markers (from progressive markers) and (vi) perfect aspect markers (from resultative or completive markers). In more general terms, Andersen (2010: 123) has defined grammaticalization as 'a macro-change' which comprises changes in content syntax (semantax), in expression, and in expression syntax (morphosyntax).

The main mechanisms relevant for grammaticalization are 'reanalysis' and 'extension' (or 'analogy') as defined by Harris & Campbell (1995: 61–119). Hopper & Traugott (2003) argue that reanalysis is the primary mechanism resulting in grammaticalization while Harris & Campbell (89–92) subsume grammaticalization under 'innovative' reanalysis. A lot of current discussion revolves around the role of 'analogization' whether it can be equated with grammaticalization and whether analogical change is actually reanalysis. Andersen (2010: 123) introduced another important term into the discussion, namely 'morphologization', viewed as "a kind of, or as a stage in, grammaticalization", but he is anxious to keep the common understanding of grammaticalization apart from the types of change for which the term morphologization is appropriate. He distinguishes two categories of morphologization: from syntax (or 'from above') and from phonology (or 'from below'). The former morphologizations are changes in morphosyntax by which grammatical expressions become affixes ('from Word to Clitic to Affix'); the latter morphologizations are labeled 'grammations' (such as metanalysis of the suffix *-j-* in Russian collective nouns and the development of vowel replacement (Umlaut) as a plural marker in German). In inflectional languages (and introflexional languages, my addition VB) content is organized in paradigms and morphological change can be studied conveniently under several headings (Andersen 2010: 134–142), such as: (i) elaboration of morphological paradigms (e.g. the rise of new aspectual categories in Slavic languages) (ii) simplification (e.g. a reduction in the Early Common Slavic aspectual system was reduced through a series of simplifications); (iii) expression changes (such as various syncretisms) and (iv) 'grammatical indexing' (here belong examples of paradigm differentiation as in Slavic in the development of nominal inflectional classes in terms of strengthening their correlation with gender). The opposite of 'morphologization' is 'demorphologization' which subsumes the types of change by which grammatical affixes change into clitics/words/expression elements with no grammatical function. Demorphologization in its turn can be due to either 'regrammation' (= reanalysis) or 'degrammation' consisting in the loss of inflectional elements or their reassignment to another expression(s); in the latter case they may end up as meaningless expression elements.

## 2. The realignment of the erstwhile possessive construction as the finite verb form

The fundamental event in the history of all Iranian languages was the rise of the ‘split’ ergative construction which took place between the (late) Old and (early) Middle Iranian periods. The Early Middle Persian data allow us to interpret this process as the realignment of the Old Persian possessive construction (Old Persian *manā kartam* ‘of me done’) through the Possessive-to-Ergative shift (OP *utā=mai y kartam* and=of me done > Middle Persian *u=m kard* ‘and I did’ (Table 1):

Table 1. Middle Persian tense/aspect system

Imperfective		Perfective	Perfect (> Preterit)
[Present]	kun-am/-ēm	(AORIST was lost)	kard h-am ‘I have done’
[Past]	(IMPERFECT was lost)	u=m kard ‘(and) I did’	kard būd h-am ‘I had done’
PROGRESSIVE (incipient)			
[Present]	hamē(w) kun-am/-ēm ‘I am doing’		

Estaji & Bubenik (2007) and Bubenik & Ziamajidi (2017) explicate this shift in terms of remorphologization (change in expression) of the aspectual ‘triad’ inherited from ‘Imperfective/Perfective/Retrospective by analytic means (Old Persian *kṛṇaot* ‘il faisait’ (Imperfect) > Middle Persian *u=š hamē(w) kard* ‘(and) he was doing’; OP *akumā* (Aorist) > MP *u=mān kard* lit. and=we+OBL do-PP ‘and we did’; OP (undocumented reduplicative perfect of the type Sanskrit type) \*ca-kār-a > MP *u=š kard ast* ‘and he has done’ (the OP documented form is the optative of the Perfect *ca-xri-ya* ‘may he have done’).

## 3. The establishment of the analytic perfect in Early New Persian

During the Middle Persian period the Old Persian ambiguous passive/possessive construction *utā=mai y kartam* and=I-OBL done ‘and it was done of/by me’ ~ ‘and I did’ was phonetically reduced to *u=m kard* and reinterpreted as an ergative construction by being moved into the erstwhile domain of the active perfective category (Aorist). In Early New Persian the possessive clitics were replaced by personal suffixes marking the subject in postverbal position. In other words, the earlier structure consisting of the clitic hosted by the clause initial items (such as conjunction *u*

‘and) and the past participle (PP) was restructured as the finite verb with the suffix marked for person and number: and=Cl + OBL ... V + PP > and ... V + P/Suffix:

- (1) u=m ... kard > u kard+am ‘and I did’  
 and=I+OBL do+PP and do+P/1SG  
 u=t ... kard > u kard+i ‘and you did’  
 and=you+OBL do+PP and do+P/2SG

In terms of grammaticalization the non-finite adjectival passive participle was grammaticalized as a finite verbal category expressing the past in the perfective aspect (ADJ > PP > P). In the same time the agentive adjunct of the passive/possessive construction was recategorized as the subject of the finite clause:

- (2) and=Ag+OBL do+PP > and do+P/Person

It is observed that in Middle Persian the oblique form of the Agent could be separated from its predicate by several intervening lexical items (3) and that the pronominal clitic does not necessarily be attached to the clause initial item (4):

- (3) u=š artaxšēr rāḏ ō āxvar i stōrān fristāt  
 and=he+OBL Ardašīr=ACC to stables=EZ cattle send+PP  
 ‘and he sent Ardašīr to the cattle stables’ [Kārnāme i.39]
- (4) pāpak ka=š nāmak dīt [Kārnāme i.41]  
 Pāpak when=he+OBL letter see+PP  
 ‘when Pāpak saw the letter’

This became less and less available during the process of univerbation whereby the Wackernagel pronominal clitics = *m* (= *t*, = *š*) had been replaced by personal suffixes -*am* (-*ī*, -*Ø*) (Bubenik 1994). In typological terms Middle Persian developed an accusative typology (OP *rāḏiy* ‘for the sake of’ > MP *rāḏ* > NP *rā* ACC) which was in ‘disharmony’ with the ergatively marked agent, and ultimately the Wackernagel pronominal clitics = *m*, = *t*, = *š* were recategorized as personal suffixes +*am*, +*ī*, +*Ø* (by “morphologization from syntax” in Andersen’s terminology (2010: 126)). In contemporary New Persian the possessive clitics can only express the pronominal object (but NOT the agent): *man dīd-am=eš* ‘I saw him’ and *o man rā dīd* ‘he saw me’ (but NOT \**o=man dīd* which is available in ergatively aligned Pashto *day=mā vūlid* lit. he=I+OBL see+PP ‘I saw him’). (5) is the New Persian equivalent of the MP sentence in (3):

- (5) (o) Ardašīr=rā be jāyghā=e gāvghā ferestād [NP]  
 (and) Ardašīr=ACC to station=EZ cow+PL send+P  
 ‘(and) he sent Ardašīr to the cattle stables’

#### 4. Degrammati(calizati)on of the copula in retrospective (perfect) aspect

This innovative morphologization was followed by the degrammati(calizati)on of the copula in the formation of the perfect (retrospective aspect) in several West Iranian languages (Kurdish, Balochi). In Balochi the suffix *-ag* (in *kurt-a(g)* ‘done’, *kapt-a(g)* ‘fallen’) appears in the Perfect and Pluperfect (Jahani & Korn 2009: 665) where it corresponds to the suffix *-e* in New Persian which goes back to the adjectival suffix *\*-ag* (*\*kard-ag* > *kard-a* > *kard-e*). It should be mentioned that the suffix *-ag* in addition to deriving the innovative past participle (PP form) derives also the infinitive when added to the present stem (*kan-ag* ‘to do’).

In the Balochi Pluperfect the final suffix *-at* is the degrammatized form (the 3rd SG) of the copula marking the Pluperfect in all the persons (*kapt-ag-at-un* ‘I had fallen’, *kapt-ag-at-ay* ‘you had fallen’):

(6)	Balochi Perfect and Pluperfect of <i>kapt-in</i> ‘to fall					
	Present	Preterit	Perfect	Pluperfect	[Balochi]	
	SG 1	<i>kap-in</i>	<i>kapt-un</i>	<i>kapt-a(g)-un</i>	<i>kapt-ag-at-un</i>	
		2	<i>kap-ay</i>	<i>kapt-ay</i>	<i>kapt-a(g)-ay</i>	<i>kapt-ag-at-ay</i>
		3	<i>kap-it</i>	<i>kapt-Ø</i>	<i>kapt-a(g)-Ø</i>	<i>kapt-ag-at-Ø</i>

Along the same lines in Kurdish (Mokri Sulaymani) the final *-a* in the Perfect *kird-û-y-a* ‘he has done’ is another instance of the copula generalized as a subjectless predicate:

(7)	<i>kird-û-m-a</i>	do+PP+1SG+COP	‘I have done’	[Kurdish]
	<i>kird-û-t-a</i>	‘you have done’	do+PP+1SG+COP	‘you have done’
	<i>kird-û-y-a</i>	‘he has done’	do+PP+1SG+COP	‘he has done’

In the form *kird-ûm-a* do+1SG + COP ‘I have done’ the reduced 3rd SG form of the copula *ast* > *-a* follows the finitized form of the participle.

An interesting instance of a degrammatized form of the copula in the past, *būd*, in the formation of the Pluperfect is found in Early Judaeo-Persian texts of 8th–12th c. (Paul 2013: 134):

(8)	<i>s’lt’n kyrdwm bwd</i>	[kerd-om būd]	‘I had asked’	[Early Judaeo-Persian]
	<i>mwlk gryptynd bwd</i>		‘they had seized kingship’	
	<i>p’dykš’yh ny nmwdy bwd</i>		‘br m’n (as if) you had not ruled over us’	

Instances of the PP *būd* functioning as an auxiliary are less common as in (9):

(9)	<i>hmgyn nbyšt bwdwm</i>	[nibišt būd-om]	‘I had written it all’
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Parallel examples to (8) of a degrammaticalized copula in the past (*byl-o* was+NEUTER ‘was’) are available in classical Russian literature in (10). Russian – unlike West Slavic languages – does not possess the ‘be’-Perfect and Pluperfect of the type *on byl-přiš-el* ‘he had come’ (obsolete in Czech):

- (10) *oná zasnúla-bylo* ‘she had just fallen asleep’ (Turgenev) [Russian]  
*(ja) protjanúl-bylo rúku* ‘I had just extended my hand’

The reduction of the person-number inflection and the generalization of the 3SG form as an impersonal (subjectless) predicate represents an instance of ‘degrammatication’ (see Andersen 2006, 2010: 144–5) for other parallels in South Slavic and Greek).

An interesting typological parallel to the strategy of adding the degrammaticalized form of the copula to the finitized form of the PP is found in the formation of the irrealis/past conditional in European Romani (Slovak variety in Šebková & Žlnayová 2001: 244):

- (11) European Romani Perfect and Irrealis/Past Conditional
- |            | ‘be’   | Perfect   | Irrealis/Past Conditional      |
|------------|--------|-----------|--------------------------------|
| SG 1       | s-om   | kerd’-om  | kerd’-om-as                    |
|            | be+1SG | do+PP+1SG | do+PP+1SG+COP (-s < as < *ast) |
| 2          | s-al   | kerd’-al  | kerd’-al-as                    |
|            | be+2SG | do+PP+2SG | do+PP+2SG+COP                  |
| 3 (hin(o)) |        | kerd’-as  | kerd’-ah-as                    |
|            | he+3SG | do+PP+3SG | do+PP+3SG+COP                  |

Another instance of degrammaticalization of the copula is found in the formation of the conjectural mood in Tajik, used to express “an unsubstantiated conjecture or assumption” (Windfuhr & Perry 2009: 466). It is based on the past participle in *-ag* (enlarged by *-ī*) followed by the degrammaticalized form of the copula *-st* (< *ast*) to which the personal endings are attached: *raft-agī-st* go+CNJECT+COP ‘he may have gone’/‘I suppose he went’. The other set is formed by the copula *-y-* (with personal suffixes *y-am*, *yī*, etc.). Its formation is surveyed in (12):

- (12) Perfect      Conjectural mode      [Tajik]
- |                   |                          |                              |
|-------------------|--------------------------|------------------------------|
| <i>raft-a am</i>  | <i>raftagī-st-am</i>     | <i>raftagī-yam</i>           |
| <i>raft-a ī</i>   | <i>raftagī-st-ī</i>      | <i>raftagī-yī</i>            |
| <i>raft-a ast</i> | <i>raftagī-st (zero)</i> | <i>raftagī-st (&lt; ast)</i> |
| <i>raft-a em</i>  | <i>raftagī-st-em</i>     | <i>raftagī-yem</i>           |
| <i>raft-a ed</i>  | <i>raftagī-st-ed</i>     | <i>raftagē-yed</i>           |
| <i>raft-a and</i> | <i>raftagī-st-and</i>    | <i>raftagī-yand</i>          |

The use of the degrammaticalized form of the copula proved to be very productive in the development of the inferential subsystem and in addition to the Past

conjunctural Tajik also forms the Present-future conjunctural (*me-raft-agī-st* ‘after he might be going, he is about to go’), exemplified in (13), and the Present progressive conjunctural (*raft-a-istoda-gī-st* ‘he might be going’).

- (13) pagoh [me-omad-agī]-st [Tajik]  
tomorrow IPFV.COME.CNJECT-COP  
‘he’ll probably come tomorrow’.

An interesting case of degrammaticalization is found in the languages which do not possess the present tense form of the copula. In Arabic it is possible to use the personal pronoun of the 3rd SG as the copula even in the 1st and 2nd Pers. The following pair of examples is from Gibrān (quoted after Cantarino 1974: 35):

- (14) anā ‘l-qalbu ‘l-bašariyyu ‘after I am the human heart’ [Arabic]  
anā huwa ‘l-qalbu ‘l-bašariyyu ‘after I am the human heart’  
I he ART=heart ART=human

Cantarino (1974: 35) states that “in such cases the ‘pronoun of separation’ can be considered as being a ‘mere’ copula between both members of the nominal sentence”. Given its optionality “it is difficult why such a personal pronoun should be considered as structural rather than merely as a stylistic device”.

## 5. Grammaticalization in New Persian of the adverb *hamēw* ‘always’

Another crucial event ushering into the New Persian state of affairs was the grammaticalization in Farsi (West Iranian) of the adverb *hamēw* ‘always’ as the Imperfect marker. According to Windfuhr (2010: 25) this event “reflects the re-emergence of aspect as a primary parameter of the verb system” after the loss of the Old Iranian Aorist. Intermediate forms (*ha)mē* > (*ha)me* > *mi* are documented in Early New Persian where they became the marker of the imperfective (indicative). Early New Persian authors may use the disyllabic and monosyllabic forms alternatively; most notably to suit the needs of verse as in Omar Khayyam (Stanza XXXVI):

- (15) *dī kūzagarī ba-dīdam andar bāzār*  
‘Yesterday I saw a potter in the bazaar;  
*bar tāza gilī lakad hamī zad bisyār.*  
he was **thumping** much upon a piece of fresh clay,  
*w-ān gil ba-zabān-i hāl. bā ū mī guft*  
and that clay in its state was **saying** to him,  
*man hamchu tu būda am marā nikū dār.*  
‘I was once just like you: be kind to me!’.

It should be noted that the French Imperfect *je faisais* captures better the aspectual value of the constellation of the adverb ‘always’ and the Past Participle *kard* (< OI *kar-ta* ‘done’) than English simple Past ‘I did’.

- (16) *u=m hamē(w) kard* ‘and of me always done’ (MP)  
 > *man hamē kardam* > *mē-kard-am* (Early NP)  
 > *mi-kard-am* ‘I did’ (NP) (cf. French Imperfect *je faisais*)

In Early New Persian *mē* became the marker of the imperfective aspect covering habitual actions and progressive aspect. Its source is seen in the Old Iranian nominal \**hama-aiwa-* ‘same duration, time’, compound of OI *hama-* ‘same’ (cognate with Skt *samá-* ‘same’) and *aiwa-* ‘one, alone’ (cognate with Old Cypriot *oiw-os*). Windfuhr (2010: 26) mentions the unique form *haṅ-ger-om* ‘I am taking’ in the Khorasani Persian dialect of Shahrud which indicates that its source was only the uncompounded \**ham(a)-*. The same uncompounded *ham-* is apparently also reflected in the Sogdian (and Khwarezmian) pre-vocalic imperfective marker *m(a)-* originating in < *ham* + augment *a-* (\**ham-a-anxaz-u* > *m-anxaz-u* ‘I rose’ (Imperfect) vs. *anxaz-ām* ‘I rise’ (Present), see Yoshida (2010: 296). Most recently in New Persian (20th c.) the unambiguous progressive aspect was created by grammaticalization of the lexical verb *dār-am* ‘I hold’ in conjunction with the main verb in the imperfective form: *dār-am mi-rav-am* ‘I am going’, *dāšt-am mi-nevešt-am* ‘I was writing’). While in Persian this construction is mostly found in colloquial speech in Tajik it is less restricted (Windfur & Perry 2009: 493). Interestingly, the Persian construction is double-finite while an earlier single-finite type combining the perfect participle of the main verb and the perfect participle of the grammaticalized auxiliary *isto-* ‘stand’ is found in Tajik. It is observed that the auxiliary in Tajik follows the main verb while in New Persian it precedes:

- |      |            |                   |                                |                          |         |
|------|------------|-------------------|--------------------------------|--------------------------|---------|
| (17) | man name   | <i>dār-am</i>     | <i>mi-nevis-am</i>             | ‘I am writing a letter’  | [NP]    |
|      | I letter   | hold+1SG          | IND-write+1SG                  |                          |         |
|      | man maktub | [ <i>nivišt-a</i> | <i>istod-a</i> ]-am            |                          | [Tajik] |
|      | I letter   | [write+PP         | stand+PP]+1SG                  |                          |         |
|      | man nâme   | <i>dâšt-am</i>    | <i>mi-nevist-am</i>            | ‘I was writing a letter’ | [NP]    |
|      | I letter   | hold+P+1SG        | IND-write+P+1SG                |                          |         |
|      | man maktub | [ <i>nivišt-a</i> | <i>istod-a</i> ] <i>bud-am</i> |                          | [Tajik] |
|      | I letter   | [write-PP         | stand-PP] <i>be-PP-1SG</i>     |                          |         |

## 6. Future tense

To refer to the future time zone, Farsi grammaticalized the lexical verb *xāst-an* ‘to want’ in combination with the short infinitive (*xāh-am zad* ‘I will hit’); in Afghan Persian this construction developed a ‘dubitative’ meaning; the 3rd SG *xāh-ad* ‘he wants’ in its degrammaticalized form (*xāt*) can accompany the main verb in any person: *zad-a xāt bud-om* ‘I might hit’. Pashto, East Iranian, on the other hand, exploits its perfective present form for the future time reference (very much as the Slavic languages do): *ba wá-kr-əm* FUT PFV-DO-1SG ‘I will do’.

The well-known parallel for degrammaticalization of the volitional auxiliary for the formation of the future tense marker is available in the history of Balkan languages (Bulgarian, Macedonian, Greek). The Greek unchangeable future tense marker *tha* (as in *tha gráf-o* ‘I will write’, *tha gráf-is* ‘you will write’, etc.) goes back to the degrammaticalized 3SG form *thél-i* ‘he wants’ (< *thél-i na gráf-o/-is/-i*) whose earliest shape was the syncretized construction of the infinitive *thél-ō gráf-ein* ‘I want to write’ > *thél-ō (h)ína gráf-ō* (lit. ‘I want that I write’ > *the na gráf-o* > *tha gráf-o* (for details see Bănescu 1915; Joseph 2003; Andersen 2010: 144–5).

To refer to events in the future time zone Tajik developed a contrast between “definite” future and the future of “intention and expectation” (Windfuhr & Perry 2009: 489–490). The former type *xoh-am raft* ‘I will (definitely) go’ contrasts with the unmarked imperfective present *me-rav-am* ‘I (will) go’. The latter type, *raft-an-i hast-am* ‘I am about to go, I have to go’ is based on the future participle (or gerundive) in combination with the auxiliary *bud* ‘be’. (This construction is reminiscent of the compound future in Latin *i-tū-r-us sum* ‘I am about to go’ expressing the inceptive aspect, cf. Bubenik 2017: 16). In Persian this construction is “marginal” (Windfuhr & Perry 2009: 489–490) limited to the present with verbs of motion but in Tajik there are no restrictions on its use with both intransitive and transitive verbs:

- (18) a. man raft-an-i hast-am ‘I am about to go, I have to go’  
 I go+GERVE be+1SG  
 b. man raft-an-i-yam ‘I am going, I’m off’  
 I go+GERVE-COP-1SG

As a parallel in Slavic languages we can mention degrammation and ultimate loss of the copula in the formation of the preterit in Russian *ja šěl* ‘I went’ from OS *šbd-lb jes-mb* (with the copula preserved in Czech *šel (j)sem* > *šel=sem*, and Polish *szył-em* with the copula reduced to a clitic/suffix +*em*; see Andersen 2009).

## 7. Passive diathesis

In New Persian the passive is formed by the auxiliary *šod-an* ‘to become’ in combination with the main verb in the past stem: *u košt* ‘he killed’ vs. *u košt-e šod* ‘he was killed’; *u košt-e ast* ‘he has killed’ vs. *u košt-e šod-e ast* ‘he has been killed’. The auxiliary *šod-an* arose by grammaticalization of the Ancient Iranian verb ‘to go’ (Old Persian *šiyav-* ‘set forth, go’, Gathic *š(y)av-aitē* ‘set in motion’, cf. Sanskrit *cyav-ati* ‘move, depart’). In Middle Persian the verb *šūd-an* (present stem *šaw-*) functioned as a full-fledged lexical verb ‘to go’ (*šaw-ēd* ‘he goes’, *šaw-ād* (Subj), *šaw* (Imp)). In Early New Persian *šūd-an* was grammaticalized as the passive auxiliary replacing the Middle Persian passive auxiliaries *būd-an* ‘to be’ and *ēstād-an* ‘to stand’ (the latter in the system of the Perfect). The erstwhile passive auxiliaries *baw-* and *ēst-* were degrammaticalized, and *būd-* ‘been’, the PP form of *būd-an*, was grammaticalized as a temporal auxiliary for the formation of the pluperfect (*u košt-e būd* ‘he had killed’ and *u košt-e šod-e būd* ‘he had been killed’). In other words, the erstwhile passive auxiliaries *baw-* and *ēst-* are continued in their lexical meaning, while the former lexical verb *šūd-an* ‘to go’ started being used as the passive auxiliary and nowadays only survives in its grammatical meaning. These two simultaneous processes of grammaticalization and degrammati(calizati)on are sketched in Table 2 (after Estaji & Bubenik 2007).

**Table 2.** The role of grammaticalization and degrammati(calizati)on in the development of the passive diathesis in Persian

	šud-	ēst-	baw-	būd (pp)
Middle Persian	‘go’	‘stand’	‘be(come)	‘been’
		(pass AUX)	(pass AUX)	
Early New Persian	(pass AUX)	(degrammaticalized)		(temp AUX)
New Persian	(pass AUX)	‘stand’	‘be’	(temp AUX)

## 8. Conclusion

The present paper aims at enhancing our comprehension of the history of the West Iranian languages by explicating long-term alternating developments in their verb SYSTEMS in crucial terms of Historical Morphology: *grammaticalization*, *degrammati(calizati)on* and *reanalysis*. It brings into discussion relatively under-represented data from West Iranian languages (Persian, Tajik, Kurdish and Balochi) by surveying fundamental morphological and syntactic changes observable in the development of their verb systems, namely: the rise of the analytic

perfect, the renewal of the imperfective category, the rise of the innovative future, and the renewal of the passive diathesis. In a larger context of Indo-European linguistics, it comments on several interesting parallels with the development of Slavic and Hellenic verb systems.

## Text (Middle Persian)

Bahrām, *Kārnāme* Farvahši. 1378. *Kārnāme Ardašir Bābagān*. Tehran: Enteshārāt-e dānešgāh-e.

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# Aspects of grammaticalization and reanalysis in the voice domain in the transition from Latin to early Italo-Romance

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This article discusses some aspects of the grammaticalization and reanalysis of lexical verbs as passive auxiliaries and light verbs in the passage from Latin to (Italo-)Romance, focussing on (i) the diachronic relationship between auxiliari- zation and light verbs, (ii) the direction of the changes and (iii) the pertinacity to change of light verbs. The light verb uses of the verbs under investigation (COME, BECOME), both in Late Latin and in some early Italo-Romance ver- naculars, exhibit a different type of decategorialization and desemanticization compared with auxiliaries, attested later than their auxiliary function.

**Keywords:** grammaticalization, reanalysis, voice, light verbs, auxiliaries

## 1. Introduction

This article investigates some aspects of the diachrony of auxiliaries and light verb constructions, in relation to the grammaticalization and reanalysis of the Latin verbs *feri* ‘become, arise’, *venire* ‘come’, occurring as passive auxiliaries and light verbs<sup>1</sup> in the transition to (Italo-)Romance, and to the alleged pertinacity to change of light verbs (Butt 2010; Butt & Lahiri 2013), trying to detect general and areal features in the patterns of change investigated (Bisang 2008; Heine & Kuteva 2011, among others).

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1. Although in the literature on Italo-Romance the term serial verb is used (Rosen 1997; La Fauci 2000; Cennamo 2007), the data investigated are to be viewed as instantiating light verbs, since the complex predicate they belong to does not consist of a sequence of distinct events functioning as a single unit (Seiss 2009; Butt & Lahiri 2013, among others for the distinction between serial and light verbs).



The discussion is organized as follows. Section 2 illustrates the notions of auxiliary and light verb in the light of the current debate on the *status of light verbs*. Section 3 analyses the semantic and syntactic changes associated with the auxiliary and light verb functions of the Latin verbs *feri* ‘become, arise’ and *venire* ‘come’ in the passage to (Italo-)Romance. Section 4 shows that the light verb uses of the lexical verbs under investigation, both in Late Latin and in some early Italo-Romance vernaculars, exhibit a different type of decategorialization and desemanticization and that the relationship auxiliary-light verb may be non-linear: one and the same verbal lexeme, in fact, can have simultaneously auxiliary and light verb function(s), the latter developing after their auxiliary uses. Section 5 explores the contribution of the Latin and early (Italo-)Romance data to the current debate on the status of auxiliaries and light verbs in relation to change. Finally, Section 6 draws the conclusions.

## 2. Auxiliarization, light verb constructions and voice

Light verbs are one of the three major types of *complex predicates*, comprising serial verb constructions, raising verbs and restructuring predicates (Bowerman 2008: 162–165), as well as auxiliaries, causatives and other types of “multi-headed predicates” (Alsina, Bresnan & Sells 1997: 1), consisting of “sequences of two or more verbs functioning syntactically as a single predicate”, either contributing and bringing together different events, as in the case of *serial verbs*, or modulating a single event, adding differences in control, aspect, benefaction (Hopper & Traugott 2003: 112), as with *light verbs* (Butt 2003: 4; 2010; Butt & Lahiri 2013), or conveying Tense-Aspect-Modality and voice distinctions, as with *auxiliaries* (see also Cennamo 2007).

### 2.1 Auxiliaries vs light verbs

Following current assumptions in the literature, auxiliaries instantiate different points along a grammaticalization chain, spanning from full verbs to grammatical markers of T(ense), A(spect) and M(odality), the so-called TAM chain (Heine 1993: 28, 53–58, 131; see also Harris & Campbell 1995: 173) (1), resulting from the interplay of four parameters, belonging to different domains (Andersen 2008: 15, n. 2), applying in varying ways and to a different extent: *desemanticization* (loss of lexical content, often referred to as “semantic bleaching”), *decategorialization* (loss of the grammatical behaviour associated with their lexical status, namely, reduced verbal behaviour), *cliticization* (loss of morphosyntactic independence/status as a separate word), *erosion* (loss of phonological substance) (Heine 2003: 578; Hopper & Traugott 2003: 111–114, among others).

Auxiliary verbs tend to be finite (carrying tense, aspect, or modality meanings/markers) and show “specialized syntactic behaviour” (Hopper & Traugott 2003: 111), occurring most typically only in specific syntactic contexts, characterized by O/S orientation<sup>2</sup> in the case of passive constructions (see Cennamo 2006 for an investigation of passive auxiliaries in Late Latin and early Italo-Romance).

The *verb to affix cline* is usually conceived of as involving the steps illustrated in (1), the (vector/)light verb<sup>3</sup> uses being often viewed as optional intermediate points (Hopper & Traugott 1993: 108; Rosen 1997; Giacalone Ramat 2000; Giacalone Ramat & Sansò 2014, among others):

- (1) Full verb > (vector/light verb) > auxiliary > clitic > affix

More recently, however, light verbs have been regarded as instantiating a different syntactic category, a subtype of lexical verbs, which does not involve grammaticalization. They are viewed as “diachronically pertinacious, although not completely inert to change” and as arising from the reanalysis of the main verb, according to the syntactic context in which it occurs (Butt 2003, 2010; Hopper & Traugott 2003: 114; Butt & Lahiri 2013: 20 and Section 2.1.2). As shown in Hopper & Traugott (2003: 114), and confirmed in the present study with examples from late Latin and early Italo-Romance, light verbs instead do appear to result from grammaticalization, although realizing a different type of decategorialization and desemanticization of the main verb from which they derive as compared with auxiliaries (see also Cennamo 2007 and Section 5).

I consider the interplay of these parameters in shaping the (passive) auxiliary and light verb uses of the verbs BECOME, COME in Late Latin and some early Italian vernaculars (namely old Tuscan), functioning as TAM markers in patterns with O orientation when occurring as voice markers, and conveying semantic nuances not directly/only marginally related to the core meaning of the lexical verb they originate from in light verb constructions.

### 2.1.1 *Auxiliarization and changes in the argument structure of predicates*

In the auxiliarization process the lexical verb becomes a tense-aspect-modality marker, and the original complement (e.g., a non-finite verbal complement) becomes the main verb (i.e., the lexical verb). The two predicates, initially conveying

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2. S, A, O are syntactico-semantic categories, referring to the sentence nuclear participants, following a well-established terminology for the core arguments of the clause (e.g., Haspelmath 2011 and references therein).

3. The term “vector” verb was introduced by Hook (1974, 1991) for Hindi and other Indo-Aryan languages, and viewed as a quasi-auxiliary, conveying aspectual and benefaction meanings (Hopper & Traugott 1993: 109; Butt 2010: 65–66 and references therein).



- b. nadya-ne xat hk<sup>h</sup> li-ya  
 Nadya.F.ERG letter.M.NOM make take-PRF.M.SG  
 ‘Nadya wrote a letter (completely)’ (Butt 2003: 2)

Light verbs are most typically finite and can occur in isolation: they may retain their original meaning and function. In Hindi and other modern Indo-Aryan languages, verbs such as ‘go’, ‘give’, ‘take’, ‘throw’, ‘strike’ ‘sit’, and others may function as light verbs, combining with a verb in a non-finite form, the *conjunctive participle* (corresponding to the Sanskrit ‘gerund’ or ‘absolutive’ in *tvā* (*ya*) or *-ya/yā*) (Butt 2010), carrying the main verbal meaning of the clause (Hopper & Traugott 1993: 109, 2003: 112), and conveying a semantic nuance of volitionality, inception/completion, suddenness, depending on the construction, and may affect the argument structure of the joint predicate, determining for instance the NOM vs ERG case-marking of the subject in Urdu (4) (Butt 1997, 2003, 2010).

- (4) a. vo ro par-aa  
 he-NOM weep-INF fall-PRF.M.SG  
 ‘He fell to weeping (burst into tears)’ (Butt 1997: 123)
- b. us-ne ro daal-aa  
 he.ERG weep put-PRF.M.SG  
 ‘He wept copiously on purpose’ (ibid.)

In Italian, verbs like *rimanere/restare* ‘remain’, *diventare* ‘become’, and *venire* ‘come’ occur both in auxiliary and light verb function (in its non-passive and non-motion activity use for *venire*), as revealed by their different syntactic behaviour. In point of fact, only light verb uses of lexical verbs (5a), (5c), (6a) can occur in participial absolute/conjunct participle constructions, which are impossible with auxiliaries, as shown in (5b), (5d), (6b) (Rosen 1997; La Fauci 2000; Cennamo 2007):

- (5) a. *restato/rimasto colpito* al collo  
 stay.PTCP.M.SG hurt.PTCP.M.SG at-the neck  
 ‘Having been hurt in his neck’ (lit. Remained struck)
- b. \**stato colpito* al collo  
 be.PTCP.M.SG hurt.PTCP.M.SG at-the neck  
 ‘Having been hurt in his neck’ (lit. Been struck)
- c. il ragazzo *rimasto colpito*...  
 the boy remain.PTCP.M.SG hurt.PTCP.M.SG  
 ‘The boy who has been hurt in his neck’.
- d. \*il ragazzo *stato colpito*...  
 the boy be.PTCP.M.SG hurt.PTCP.M.SG

- (6) a. una torta *venuta* *cotta* all'esterno  
 a cake come.PTCP.F.SG cook.PTCP.F.SG at-the-outside  
 ma cruda all'interno (*venire*: light verb)  
 but raw at-the-inside  
 'lit. A cake come cooked outside but raw inside'.  
 'A cake that came out cooked inside but raw inside'.
- b. \*una torta *venuta* *cotta* da Marco  
 a cake come.PTCP.F.SG cook.PTCP.F.SG by Mark  
 'lit. A cake (that has) come cooked by Mark'. (*venire*: passive auxiliary)
- c. una torta *venne* *cotta* da Marco, un'altra da Giovanna  
 a cake come.PST.3SG cook.PTCP.F.SG by Mark another by Jane  
 'One cake was cooked by Mark, another one by Jane'.
- d. la torta (*mi*) è *venuta/venne*  
 the cake I.DAT be.PRS.IND.3SG come.PTCP.F.SG/COME.PRF.3SG  
*ben cotta*  
 well cook.PTCP.F.SG  
 'The cake came out well cooked to me' (*venire*: light verb)

In its light verb function(s) *venire* occurs in both simple and compound tenses (6a), (6d); in its (passive) auxiliary function *venire* only occurs in simple tenses (6c) (cf. \**la torta è venuta cotta* the cake be.PRS.3SG come.PTCP.F.SG cook.PTCP.F.SG 'The cake has been (lit. is come) cooked' (auxiliary 'come') vs. *la torta è venuta (ben) cotta* be.PRS.3SG come.PTCP.F.SG cook.PTCP.F.SG – lit. 'The cake is come (well) cooked' (light verb *come*) (Rosen 1997; La Fauci 2000; Cennamo 2007). In addition, the A argument is in the dative when expressed, as in (6d), a pattern already attested in old Tuscan (cf. Section 3.2).

The different syntactic behaviour of light verbs in Hindi/Urdu and Italian stems from their different syntactic status: whereas light verbs contribute to the argument structure of the complex predicate, auxiliaries are just TAM markers (Butt 1997, 2003, 2010; Seiss 2009; Butt & Lahiri 2013, among others). Thus, light verbs instantiate a different syntactic category, a subtype of lexical verbs according to Butt (2010), Butt & Lahiri (2013): they structure or "modulate" the event, rather than changing the argument structure of the joint predicate, like auxiliaries. Under this view, only one lexical entry is postulated, with the light verb and full verb/auxiliary meanings triggered by the syntactic context in which they occur, as shown in (7) (adapted from Butt & Lahiri 2013: 24):

- (7) Underlying entry < main verb > auxiliary (via reanalysis) > clitic > affix  
 light verb

The explanation for the cross-linguistic spread of verbs such as ‘come’, ‘go’, ‘take’, ‘hit’, ‘rise’, ‘fall’, ‘throw’, ‘give’, ‘rise’, ‘do/make’ in light verb function/constructions is that these verbs are *passepertout* elements, characterized by a very general meaning and therefore susceptible of occurring in several syntactic contexts or “constellations” (Butt & Lahiri 2013: 24). Syntactic context, indeed, lies at the heart of the use of some of these verbs (e.g., *come*, *go*, *do/make*), also in auxiliary function, owing to the lack of “specificity” in their lexical meaning (Heine 1993: 28), with grammaticalization involved in both light verbs and auxiliaries.

A more insightful account for the light verb and auxiliary status of the lexical verbs recurring in this function is put forward by Bisang (2008: 56), who shows – in discussing the different uses of the verb *ba:n* ‘come to have’ in Khmer and generally in East and mainland Southeast Asian languages –, that the synchronic relationship among the different functions of a grammatical marker can be better described by means of the notion of a “source concept” spreading in different directions, rather than through the notions of cline or path of grammaticalization (cf. also Bisang 2011: 112). This notion proves more useful than the scheme proposed by Butt (2003, 2010), Butt & Lahiri (2013) for the description of the auxiliary and light verb uses of verbs denoting change of state, change of location and activity in the transition from Latin to early Romance and in some early Italian vernaculars, albeit the auxiliary and light verb functions of a lexical verb, when they are identical in form, arise from the syntactic context in which they occur, as also illustrated in (5)–(6) from contemporary Italian and in Sections 3.1–3.2.<sup>4</sup>

As we shall see in the course of discussion, the data investigated show that the relationship light verbs – auxiliaries may be more complex than usually assumed in the literature and that light verbs, although involving grammaticalization, following Hopper & Traugott (2003: 114), depending on the language, do not appear to instantiate an intermediate stage in this process (Butt 2003, 2010; La Fauci 2000; Cennamo 2007).

### 3. Light verbs and (passive) auxiliaries in Late Latin and early (Italo-)Romance

The Latin verbs *fieri* ‘become’, *venire* ‘come’ and their early Italo-Romance continuators \**fire* ‘be/become’, *venire* ‘come/become’, display both auxiliary and light verb functions, occurring, respectively, as TAM markers in passive constructions and

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4. A similar approach is put forward in Heltoft (2017) for the development of auxiliaries in Danish and Kragh & Schøsler (2015) for the diachrony of some progressive periphrases in French.

as “*vectors*” of semantic facets of resultativity, unexpectedness, involitionality/lack of control in their light verb uses, depending on the pattern.

### 3.1 *Fieri* and its early Italo-Romance continuants

In Late Latin, attested from the 4th century A.D., the accomplishment verb *fieri* ‘become, arise’ – also occurring in early and Classical Latin as the lexical passive of the verb *facere* ‘do, make’, *fieri* meaning ‘be done/made’ –, is employed as a voice marker, in imperfective passive function only, with [–Animate] subjects (8a) in the early attestations of this usage, subsequently also with [+Animate] ones (8c). This construction alternates, sometimes in the same text, with the canonical synthetic passive (i.e., the *–R* form) (8b) and with the canonical passive pattern for perfective tenses, *esse* ‘be’ + past participle (9) (albeit rarely and apparently initially only in some tenses, the present indicative and the present subjunctive) (Svennung 1935:457–458; Winters 1985). The latter structure gradually spreads to imperfective tenses in late texts (e.g., 6th–9th century A.D.) – although never replacing the canonical analytic passive *esse* ‘be’ + past participle –, as part and parcel of wider changes affecting the grammatical encoding of voice and the argument structure of the clause in the passage to Romance (Muller 1924; Svennung 1935:459; Cennamo 2005, among others):

- (8) a. *interpositae orationes fiunt*  
 intersperse.PTCP.F.PL.NOM prayer.PL.NOM become-PRS.IND.3PL  
 ‘Prayers are being/get interspersed’ (lit. become interspersed)  
 (*Per. Aeth.* 35, 6)
- b. *interponuntur orationes*  
 intersperse-MPASS.PRS.IND.3PL prayer.PL.NOM  
 ‘Prayers are being/get interspersed’  
 (*Per. Aeth.* 37, 6)
- c. *et fiat battutus et*  
 and become.PRS.SBJV.3SG beat.PTCP.M.SG.NOM and  
*missus in carcere*  
 put.PTCP.M.SG.NOM in jail  
 ‘And that he be beaten and imprisoned’ (*Lex Cur. Addit.* VIII, 42)
- (9) *ut forsitan... gemitus populi omnis auditus*  
 that perhaps the-moan crowd-GEN all-GEN heard.PTCP.M.SG  
*sit*  
 be.PRS.SBJV.3SG  
 ‘That perhaps the moan of the whole crowd is heard’ (*Per. Aeth.* 36, 3)

In a 6th century A.D. cookery book (*De re coquinaria*, Anthimus) the verb *fieri* ‘become, be made/done’ is also attested in examples where it appears to function





- (12) a. el morto desmonta        zo e va                                und  
 the dead go.PRS.IND.3SG up and go.PRS.IND.3SG where  
 e                                la madre *strangosada facta*  
 be.PRS.IND.3SG the mother anguished become.PTCP.F.SG  
*quaxe morta*  
 almost dead  
 ‘The dead gets up and goes to his mother, who is in anguish (lit. (who has) become anguished), almost dead’ (Passione, 16. 23)
- b. e como la madre ste                                in tanta afflictio[n]  
 and how the mother stay.PRS.IND.3SG in much despair  
 e *sta strangosada*                                oiando tal imbasata  
 and stay.PRS.IND.3SG anguished.PTCP.F.SG hear.GER such report  
 ‘And how his mother is in such despair and almost anguished in hearing the /report’ (Passione, 8.19–20)

In old Lombard (e.g. old Milanese), sometimes in the same texts where it occurs in light verb function, such as the *Passione* (Old Comasco), \**fire* + past participle (and its variants) also occur as imperfective passive markers, being the most common passive auxiliary, attested in all tenses except the past perfect and the gerundive, unlike in other northern early Italian vernaculars, where it is confined to some tenses only, e.g., crystallised forms of the subjunctive in present/future function in old Florentine (Bertuccelli Papi 1980: 72; 74), the present/imperfect indicative in old Venetian (Kontzi 1958; Cennamo 2003, among others):

- (13) Tu *fi'*                                *metua*                                sot pei e  
 you become.PRS.IND.2SG put.PTCP.F.SG under feet and  
*fi'*                                *fagia*                                *morir*                                (O. Milanese)  
 become.PRS.IND.2SG make.PTCP.F.SG die.INF  
 ‘You are trampled upon and are made to die’ (Bonvesin, *Disputatio*, 32. 98)

### 3.2 *Venire* in Late Latin and early Italo-Romance

*Venire* ‘come’ is hardly attested as a passive auxiliary in Late Latin, with only one clear and yet controversial<sup>6</sup> example of the use of this verb as a TAM marker in an O-oriented pattern, i.e., as a passive voice marker (although the issue needs further investigation), in a veterinary treatise from the second half of the 4th century A.D., *Mulomedicina Chironis* (14a), with later (8th–9th century A.D.) attestations of related verbs such as *pervenire* ‘come to, arrive at, fall to’ (14b), *evenire* ‘come out, come forth, happen, befall’ (14c), in patterns that are ambiguous, however, between

6. See discussion in Adams (2013: 721–723) and references therein.

a fientive<sup>7</sup> (i.e., transitional) (Haspelmath 1987: 9; 1990: 34) and a passive reading, at times also with overt expression of the agent, as in (14b) (Muller 1924: 80):

- (14) a. quem (sc. cibum) conceptum venire oportet  
that.ACC.M (food.ACC.M) take.PTCP.M.SG come.INF ought  
'Food that ought to be taken'. (Mul.Ch. 266)
- b. si ab eis aliquis interfectus evenerit  
if by they.ABL someone kill.PTCP.M.SG come.PRF.FUT.3SG  
'If someone happens to be killed by them' (lit. will-come/end up killed)  
(Cap. Sax., 797; Muller 1924: 80)
- c. dum bene instructus perveniat  
until well teach.PTCP.M.SG come.PRS.SBJV.3SG  
'Until he is well taught' (lit. comes/ends up well taught)  
(Cap., an. 802; Muller 1924: 80)

Light verb constructions with the verb *venire* 'come' are not found in early and Classical Latin (unless we regard *venire* as a light verb conveying resultativity, rather than the motion verb 'come' in (23) *irritata venit* 'lit. irritated comes (results/ends up)', an issue to be further explored). In contrast, in some early Italian vernaculars (e.g., old Tuscan), various subtypes of this structure occur, some of which attested already in 13th century texts, generally with subjectivization of the O argument, as exemplified in (15) and (16). In both patterns the finite form of the verb *venire* is followed by the past participle of a transitive verb (15c)–(15d) (less commonly intransitive ones), also with an unexpressed (15f) or a sentential O (15g), (17). The A argument (usually the third person (15a), more rarely the first and second persons),<sup>8</sup> is in the dative. It is most typically preverbal, occurring either before the light verb, as in (15a) or before the complex predicate (light verb + past participle), if realized by a pronoun, as in (15c). The A argument may also be postverbal if

7. The term refers to predicative constructions consisting of a transition verb (e.g., *become*) and an adjective, denoting the transition from a state to a new state, as in *caro spissa fit* 'Meat becomes dry', from the adjective *spissus* 'dry' (see also Michaelis 1998).

8. For instance, there are only two examples in *Decameron* (14th century) (Bertuccelli Papi 1980: 62):

- (i) *se ti venisse veduto Lapuccio ...* (*Decameron* VIII, 2.15)  
if you.DAT come.IMPRESBJV.3SG see.PTCP.M.SG Lapuccio  
'If you happened to see Lapuccio' (lit. if to you came seen Lapuccio)
- (ii) *spesse volte mi vien presa l'una*  
several times I.DAT come.PRS.IND.3SG take.PTCP.F.SG the-one.F.SG  
*per* (id. VI, 10. 49) *l'altra* (id. VI, 10. 49)  
for the-other.F.SG  
'Several times I mistake one for the other' (lit. 'to me comes taken the one for the other')

instantiated by a nominal, occurring either after the light verb, as in (15c) or after the complex predicate (15d). The construction shows different word order possibilities also for the O argument, encoded as a subject, as in (15b), ... *venne ... questa donna veduta*, and (15d), *venne ... alzato il viso* (Kontzi 1958: 43–49; Bertuccelli Papi 1980: 60–70; Vincent 1987: 248–249):

- (15) a. *se veduto le venisse un*  
 if see.PTCP.M.SG she.DAT come.SBJV.IMPRF.3SG a  
*giovanno* (transitive verb; [+agr])  
 young-man  
 ‘If she had happened to see a young man’ (lit. if seen to her came a young man)  
 (*Decameron*, V. 10. 24)
- b. *gli venne per ventura... questa donna veduta*  
 he.DAT come.PRF.3SG by chance this woman see.PTCP.F.SG  
 ‘He happened to see this woman’ (lit. to him by chance came this woman seen)  
 (*Decameron*, II.7.91)
- c. *le venne sentita una novella*  
 she.DAT come.PRF.3SG hear.PTCP.F.SG a story.F.SG  
 ‘She happened to hear a story’ (lit. to her came heard a story)  
 (*Decameron*, III. 9. 7)
- d. *...venne alla giovane alzato il viso*  
 come.PRF.3SG to.the girl raise.PTCP.M.SG the face.M.SG  
 ‘The girl happened to raise her face’ (lit. came to the girl raised the face)  
 (*Decameron*, IX. 2. 14)
- e. *e avvegnadiochè mortalmente gli venne*  
 and although mortally he.DAT come.SBJV.IMPRF.3SG  
*peccato* (intransitive verb)  
 sin.PTCP.M.SG  
 ‘And although he happened to commit mortal sin’ (lit. mortally to him came sinned)  
 (*Teologia Mistica*, Siense, 1356/67; 84, col. 1.18;  
 Giacalone Ramat & Sansò 2014: 25)
- f. *a Sagramorre venne mirato*  
 to Sagramorre come.PST.3SG look.PTCP.M.SG  
*in quella parte* (intr. verb)  
 in that part  
 ‘Sagramorre happened to look in that direction’  
 (*Tavola Ritonda*, 166.13, Florentine, 1st half of the 14th century)
- g. *venneli pensato d’andare in Grecia*  
 come.PST.3SG.he.DAT think.PTCP.M.SG of-go.INF in Greece  
 ‘He happened to think of going to Greece (lit. came-to him thought to go in Greece)  
 (*Leggenda di messer Gianni di...*, 43 r22)

More rarely, the pattern is found with the verb in the non-agreeing, impersonal form, the past participle reverting to the unmarked masculine singular form (16) (Bertuccelli Papi 1980: 61–72; Ambrosini 2000: 359):

- (16) gli *ne venne schizzato* ['lanciato'] *una* [sc. *fava*]  
 he.DAT of.it come.PST.3SG throw.PTCP.M.SG one.F (broad bean)  
*nell'orecchia*  
 into-the ear  
 'A broad bean hit his ear (lit. to him of them (= broad beans) came dashed into his ear' (Trecentonovelle, CLXVIII. 5)

In the light verb constructions illustrated above, *venire* is semantically empty, giving the complex predicate a nuance of unexpectedness and lack of control, involitionality of the A argument, encoded as an oblique, i.e., in the dative. The verb retains only the more general, transitional (i.e., entry into a new state) facet of its lexical meaning (Maiden 1995: 157) and combines with all aspectual classes (e.g., states, activities, accomplishments, achievements) (Bertuccelli Papi 1980: 61–68 for a wide range of examples; Giacalone Ramat & Sansò 2014), the sequence *venire* + past participle meaning 'happen' or 'end up, result'. The construction also occurs in compound tenses (Bertuccelli Papi 1980: 64; Cennamo 2007; Giacalone Ramat & Sansò 2014), as shown in (17):

- (17) E *venuta* *nella* età da *marito*, *non m'è*  
 and come.PTCP.F.SG in.the age from husband not I.DAT.be.PRS.IND.3SG  
*venuto* *fatto* *di poterla* *dare* *a*  
 come.PTCP.M.SG make.PTCP.M.SG of be-able.INF.she.ACC give.INF to  
*persona che mi piaccia*  
 person that I.DAT like.PRS.SBJV.3SG  
 'And, having reached the age of getting marriage, I did not happen to be able to give her to someone who I like' (Decameron V. 5, 365)

The light verb function of *venire* in compound tenses illustrated in (17), very frequent in old Florentine and generally in old Tuscan, is found in other northern vernaculars as well, e.g., old Mantoan (16th century) (Vincent 1987: 249). The construction may be ambiguous between a light verb and a passive interpretation, that is only resolved by the context, as in (18a), alongside clearly passive structures, with the A argument overtly expressed, introduced by the preposition *da* 'by' (18b):

- (18) a. disse      *esserle*      *venuta*      *involata*      *una sua*  
 say.PST.3SG be.INF.she.DAT come.PTCP.F.SG steal.PTCP.F.SG a her  
*collana d'oro*  
 necklace of-gold  
 'She said she happened to be stolen a golden necklace/she was stolen a  
 golden necklace of hers' (Ascanio de' Mori, *Novelle*, 954)
- b. ciò che *dal padre gli era venuto*  
 that which by-the father he.DAT be.IMPRES.IND.3SG come.PTCP.M.SG  
*lasciato*  
 leave.PTCP.M.SG  
 'What he had been given by his father' (lit. what by his father was come  
 left him) (Ascanio de' Mori, *Novelle*, 945)

In old Tuscan the light verb function of *venire* also occurs in a different subtype, where the verb appears to convey an aspectual function, resultativity, illustrated in (19), analogous to the construction discussed in (6), *una torta venuta cotta all'esterno* 'lit. 'A cake come cooked outside', the only light verb pattern used in contemporary Italian.<sup>9</sup> This usage is not found, however, in old Lombard and old Venetian, where only *venire*-passive occurs (Cennamo 2003), alongside the 'fientive' use of this verb (20a), attested in old Tuscan already in 13th century texts and found also in other early Italian varieties, e.g., old Lombard and old Sicilian, where also *venire*-passive occurs<sup>10</sup> (Kontzi 1958: 40; Bertuccelli Papi 1980: 69; Squartini 2003; Cennamo 2007; Giacalone Ramat & Sansò 2014). This construction, too, may be viewed as instantiating a subtype of the light verb *venire*, attested also in participial absolute/conjunct participle structures (20b) (from the 16th century),

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9. The involitionality marker use of *venire* in Italian is nowadays confined to fixed patterns, occurring most typically in simple tenses, only with the past participle of the verb *fare* 'to do, make' (e.g. *mi vien fatto* I.dat come.PRS.3SG do.pp.M.SG 'I happen to' ('to me comes done') and followed by a subordinate clause introduced by the preposition *di* 'to' (lit. 'of'), governing the infinitive of the verbs *dire* 'to say' and *pensare* 'to think':

- (i) *mi vien fatto di dire /pensare*  
 I.DAT come.PRS.3SG make.PTCP.M.SG of say.INF /think.INF  
 'I happen to say/think' ('To me comes done to say/think')

10. (i) *li quali venu partuti* (Senisio, Angelo. NA, a228.1) (passive auxiliary)  
 the which come.PRS.IND.3PL divide.PTCP.M.PL  
 'Who are divided' (lit. come divided)
- (ii) *li iornu di lu venniri santu* (Sposizione del Vangelo Secondo Matteo,  
 the day of it come.INF saint B110, 26.1) (fientive copula)  
 'The day when he became saint'

identifying the light verb behaviour of lexical verbs also in contemporary Italian (Rosen 1997: 200; La Fauci 2000 and Section 2.1.2):

- (19) la tela *era* ben *venuta* *fatta* *ad Aragnes*  
 the cloth be.IMPRF.IND.3SG well come.PTCP.F.SG make.PTCP.F.SG to Aragnes  
 'The cloth had come out well to Aragnes' (*Metamorfosi d' Ovidio*, B028, 14)
- (20) a. e allora li cavalieri *tutti vennero* *smarriti*  
 and then the knights all come.PST.3PL dismay.PTCP.M.PL  
 (= si smarrirono)  
 (RFL dismay.PST.3PL)  
 'And then all the knights got dismayed' (*Tavola Ritonda*, XCIII. 352)
- b. *venuta* adunque Madonna Modesta contro'l suo volere  
 come.PTCP.F.SG then Dame Modesta against-the her will  
*vecchia canuta*  
 old.F.SG white-haired.F.SG  
 'So, Dame Modesta having become against her will a white-haired old woman' (Straparola, *Le piacevoli notti*, 248)

Thus, the data investigated do not appear to support the claim often quoted in the literature (Kontzi 1958: 36–37; Rohlf's 1969: 128–129; discussion in Maiden 1995: 157, and recently Giacalone Ramat & Sansò 2014), whereby the rise of *venire*-passive in old Tuscan would be subsequent to the light verb use(s) of the verb (see also Salvi 2010: 146), since the two constructions are found in texts from the same period (cf. also Kontzi 1958: 42–43; Bertuccelli Papi 1980: 68).

#### 4. Origin of *BECOME* and *COME* as voice markers and light verbs

The patterns investigated result from a grammaticalization process following different paths or chains, leading to different syntactic categories, the auxiliary and light verb functions of the transition verbs *feri* 'become, arise' and *venire* 'come, happen, end up'. The auxiliarization of *feri* and *venire* involves an initial stage where these verbs are equivalent to the copula *esse* 'be', thereby occurring also with inherent properties, i.e., non-result states, as shown in (21b), from a 6th century A.D. text (Svennung 1935: 460; Cennamo 2005: 184). This stage is attested earlier for *venire*, in examples with nominal and adjectival complements from Classical Latin (especially in poetry, e.g., Virgil, Ovid, Juvenal, Propertius) (21a) – albeit apparently more frequently with a nominal complement – and, at a later stage, for the verb *feri*, a usage found in 4th–6th century A.D. non-literary texts such as *Mulomedicina Chironis*, Oribasius, Anthimus, illustrated in (21b) (Svennung 1935: 460; Löfstedt 1938/39: 181–184; Cennamo 2005: 189; 2007):

- (21) a. *seu tristis veniam seu... laetus*  
 either sad.NOM come.SBJV.PRS.1SG or... happy.NOM  
 ‘Whether I am downcast or joyful’ (when I meet my friends)  
 (Prop. 1, 12, 25)
- b. *utilis fiat ita, ut in lactes*  
 useful.NOM become.PRS.SBJV.3SG thus that in milk.PL.ACC  
*caprunos coquat*  
 goat.PL.ACC cook.PRS.SBJV.3SG  
 ‘Thus it is useful so as to cook goat kids in milk’ (Anthim. 82.2–3)

Subsequent steps involve the gradual “regrammation” (Andersen 2006, 2008), “extension” (Andersen 2001: 230) or “expansion” (Heine & Reh 1982: 38–39) of *fieri* and *venire* copulas into the syntax, as passive auxiliaries (8a), (8c), (10), (14a), and as light verbs (12)–(13), (15)–(17). In the former usage *fieri* and *venire* gradually integrate into the verbal paradigm, in so-called copula auxiliarization (Dik 1987: 57), becoming tense-aspect-modality markers and occurring in patterns with O-orientation, thus reanalysing as voice markers. This is the case when the past participle in the joint predication they occur in is no longer formed from accomplishments/achievements, e.g., *coquere* ‘cook’, *constringere* ‘contract’, *mutare* ‘change’, *irritare* ‘irritate’ (22a), (23a). With these verbs the sequence *fieri/venire* + past participle may be ambiguous between a spontaneous, anticausative or agentive anticausative-middle function when the subject is animate (Haspelmath 1987: 27–29), and an externally caused eventuality, as in its passive interpretation. With activity verbs, e.g., *gubernare* ‘to govern’ (22b), *concupere* ‘to take’ (23b), only the reading of an externally caused eventuality is available, since the change component is lacking in the event structure of these verbs, the causer optionally surfacing as an oblique already in Late Latin with the verb *fieri*:<sup>11</sup>

- (22) a. *et maxillae constrictae fient*  
 and the.jaws.PL.F.NOM contract.PTCP.PL.F.NOM become.FUT.IND.3PL  
 (= constringentur)  
 contract.MPASS.FUT.3PL  
 ‘Its jaws become contracted (= get contracted)’ (Mul. Ch. 307. 15)
- b. *per sacerdotes fiant gubernatas*  
 by priest.PL.NOM become.PRS.SBJV.3PL govern.PTCP.F.PL.ACC  
 ‘That they be governed by the priests’ (Cap. Gen. 783; Muller 1924: 79)

11. Cf. further discussion in Cennamo (2005: 186; 2006: 324–325); Adams (2013: 719–721); Pinkster (2015: 258) and references therein.

- (23) a. *irritata venit* (= irritatur)  
 annoy.PTCP.F.SG come.PRS.IND.3SG (= annoy.MPASS.PRS.IND.3SG)  
 quando contemnitur illa  
 when slight.MPASS.PRS.IND.3SG she.NOM  
 ‘She gets annoyed (lit. (be)comes annoyed) when she is looked down upon/  
 slighted’ (Prop. I, 10, 25)
- b. (= 14a) *quem (sc. cibum) conceptum venire*  
 that.NEUT food.NEUT take.PTCP.NEUT.SG come  
 oportet in duas partes  
 ought to in two parts  
 ‘Food that ought to be taken in two parts’ (Mul. Ch. 26)
- c. (= 14b) *si ab eis aliquis interfectus evenerit*  
 if by they.ABL someone kill.PTCP.M.SG come.PRF.FUT.3SG  
 ‘If someone happens to be killed by them’ (lit. will-come/end up killed)  
 (Cap. Sax., 797; Muller 1924: 80)

In contrast, in their expansion into the syntax as light verbs, *fieri* and *venire* are reanalysed as markers of resultativity and involitionality, respectively, developing from the weakening of the (indefinite) change component of their lexical meanings, and realized through different paths.

Thus, the past participle of the verb *fieri*, both in Late Latin and in old Lombard, occurs in conjunct participial constructions (characteristic of the light verb behaviour of a verb), carrying an aspectual meaning, resultativity, revealing the verbal function of the past participle of the lexical verb it occurs with (e.g., *caro vaporata facta* ‘lit. meat steamed become/made vs *caro vaporata* lit. ‘meat steamed’ (see also (10), Section 3.1)). Truly light verb uses of *venire*, instead, are not found in Latin but in its old Tuscan continuants (Section 3.2), albeit with Latin antecedents in desemantized uses of the verb in conjunction with adjectives, in copular-like constructions where the verb retains only the transitional-resultative facet of its original meaning, as in *rara venerint* (24a). In Latin, however, *venire* never comes to denote the transition from a state to a new state, with the meaning ‘become’, like *fieri* (e.g., *tumor durus fit* swelling.M.NOM hard.M.SG become.PRS.IND.3SG ‘the swelling becomes hard’). By contrast, its related form *devenire* (< *de-venire* ‘come down off, away from’) – where the prefix *de-* conveys a downward orientation, meaning ‘from’, ‘away from’ (Acedo-Matellán 2015: 53, note 21 and references therein) –, is found both in fientive patterns (24a) and in a seemingly light verb usage (24e) (Cennamo 2005: 190–191):

- (24) a. *carnes deveniunt siccae* (Anthim. 12, 3)  
 meat.NOM.PL (be)come.PRS.IND.3PL dry.NOM.PL  
 ‘Meat becomes dry’ (lit. come out)



- (24) b. ardet                      caro                      deforis et      deintus  
 burn.PRS.IND.3SG meat.NOM.SG outside and inside  
*devenit* (= est)      *cruda*  
 (be)come.PRS.3SG raw  
 ‘Meat burns outside and is (lit. comes out, ends up, results) raw inside’  
 (Anthim. 4, 1)

As a matter of fact, *venire* never occurs with a fientive meaning, even in late texts, as illustrated in (24c) (from the 8th century A.D. *Compositiones ad tingenda musiva*), where the verb may be interpreted as equivalent to *esse* ‘be’, i.e., as having a truly copular function, as well as denoting the transition to a state/condition, meaning ‘to end up, result’, developing an earlier usage, attested, for instance in Classical Latin (24g):

- (24) c. et si *rara*                      *venerint*,                      decoque                      eam (= ea)  
 and if runny.NEUT.PL come.FUT.PRF.3PL cook.IMPR.2SG it.ACC  
 usque                      dum *spissa*                      *fiant*  
 continuously until thick.NEUT.PL become.PRS.SBJV.3PL  
 ‘And if they are/result (lit. ‘will come’) runny, cook them until they become thick’  
 (*Comp. Ting. Mus.* M 18; Löfstedt 1938/1939: 183)
- d. *illic veniunt*                      *felicius*                      *uvae*  
 there come.PRS.IND.3PL more-successfully grapes  
 ‘There grapes grow (lit. come) more easily’ (an issue that deserves further study)  
 (Virgil, *Georg.* 1.54, 45)

Interestingly, in the fientive interpretation of the sequence verb + adjective, there occurs the verb *fieri*, rather than *venire*, as in (24c), *rara venerint* vs. *spissa fiunt*. The latter use of *venire*, in turn, appears to be related to its indefinite change meaning, as illustrated in (24c) and (25), in O-oriented constructions such as *in contemptiōnem venire* ‘to come to be despised’, *in consuetudinē venire* ‘to become habituated’, *in discrimen venire* ‘to fall in danger’, *in odium venire* ‘to come into hatred’, in *sermonem venire* ‘to happen to/to come to talk about someone’. In these patterns the [±An] subject undergoes the verbal process, and the use of the verb underlines its transition to a state/condition, and the A argument in the dative, depending on the pattern (25b) (see also Cennamo 2005: 187–189):

- (25) a. ne *in invidiam veniam*  
 not in hatred come.PRES.SUBJ.3SG  
 ‘That I do not come to be hated’ (lit. not I in hatred came/fell)  
 (Cic. *Fin.* 2.24, 79)

- b. ut non solum *hostibus* in *contemptionem* Sabinus  
 so-that not only enemies.DAT in contempt.ACC Sabinus  
*veniret*, sed ...  
 come.IMP.F.SUBJ.3SG but  
 ‘That Sabinus had fallen into contempt not only to their enemies, but ...’  
 (lit. came into contempt) (Caes. *B.G.* 3, 110)

The complement of the verb (the prepositional phrase *in* + accusative) expresses an abstract, event-like entity and the construction conveys the semantic nuances of unexpectedness, lack of control, involuntality, facets of meaning characteristic of some continuants of this pattern in old Tuscan, as shown in Section 3.2.

Thus, within the semantic space of transition, spanning from path of motion/change of state to the endpoint/result of a change of state, different verbs can be identified, instantiating different points within this domain: *venire* (motion/change of state) and *fieri* (change of state), focussing on the path/transitional and result state/endpoint facets, respectively.

In both changes, as illustrated in the above discussion, the syntactic context, (i) the A argument in the dative vs the nominative case, and (ii) the type of complement – adjective/noun, prepositional phrase, *in* + accusative (denoting the entry into a condition/state), past participle – play a crucial role, determining the auxiliary vs light verb interpretation.

However, as the analysis of Late Latin and old Italian (namely Tuscan) data reveals, the syntactic distinction between auxiliary and light verb functions of a lexical verb, manifesting itself in the non-occurrence vs occurrence of the verb in compound forms, respectively, is not always clearcut. This is so, for instance, for the verb *venire* ‘come’ in old Mantoan, that is found in a compound form also in its passive auxiliary function, even with the overt expression of the agent, as in (18b) (*ciò che dal padre gli era venuto lasciato* ‘What he had been given by his father’), thus violating a constraint differentiating its passive auxiliary and light verb use in old Tuscan (and in contemporary Italian) (Sections 2.1.2 and 3.2).

#### 4.1 Light verb behaviour of the passive auxiliary *essere* ‘be’

In Old Tuscan also the canonical passive auxiliary *essere* ‘be’, in the compound *stato*-patterns (supplied by the verb *stare* ‘stand’) (Cennamo 2016: 970 and references therein), may occur in compound participial forms (the *stato*-forms, in constructions usually regarded as differentiating the auxiliary from the light verb uses of a lexical verb. In this case an auxiliary, that is, a TAM marker, occurs in the syntactic contexts characteristic of light verbs in old Tuscan, conveying an aspectual meaning, resultativity (a pattern found also in old Neapolitan, where the

double participial form is also an unaccusative marker (Ledgeway 2009: 596–600 and references therein):

- (26) a. *parmi stato morto e sopellito e*  
 seem.PRS.IND.I.DAT be.PPM.SG kill.PTCP.M.SG and bury.PTCP.M.SG and  
*resuscitato* (sc. Bassus)  
 revive.PTCP.M.SG Bassus  
 ‘He (sc. Bassus) seems to have been killed and buried and revived again’  
 (*Pistole di Seneca*, 30, 67)
- b. *quivi smontati e molto stati*  
 here dismounted.PTCP.PL.M and much be.PTCP.PL.M  
*onorati da’ nobili uomini di Trapani*  
 honour.PTCP.M.PL ‘by noble men of Trapani’ (*Decameron*, V. 7, 376)

As shown in (26a), in 14th century Florentine texts (e.g. Boccaccio, Villani, Jacopo Passavanti) the past participle of *essere* ‘be’, *stato* ‘been’, occurs in double participial constructions, in patterns where it functions as a verbalizer (26a)–(26b), underlining the verbal nature of the past participle of the lexical verb, similarly to the past participle of *fieri* ‘become’ in late Latin and its continuant *fi* in old Lombard (Section 3.1).

Thus, not only lexical verbs like *come*, but also auxiliaries like *be* may behave syntactically like a light verb in some early Italo-Romance varieties (see also Cennamo 2007).

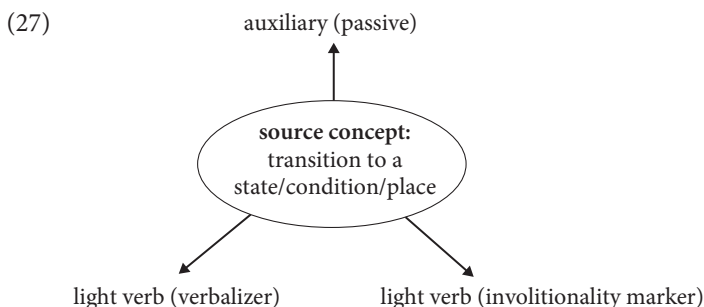
## 5. Auxiliaries, light verbs and change in the passage to Italo-Romance

The analysis of late Latin and early Italo-Romance data concerning the auxiliary and light verb uses of the verbs *become* and *come*, reveals that light verbs may result from grammaticalization and reanalysis, like auxiliaries, although differing in their syntactic distribution and behaviour, as well as in their semantic contribution to the complex predicate they are part of.

The following points emerge, partially confirming the insights from perceptive work by Butt (2003, 2010), Butt & Lahiri (2003, 2013): (i) there appears to be no evidence for light verbs as being an intermediate optional stage on a grammaticalization path leading to the auxiliary and ultimately affixal status of a lexical verb; (ii) the auxiliary and light verb function of one and the same lexical verb are usually detectable from the syntactic construction they occur in, although ambiguity may arise between the (passive) auxiliary and light verb interpretation of a verb under identity of the syntactic constellations where they occur (as in old Mantoan).

However, the data investigated show that auxiliaries and light verbs, although different syntactic categories, as argued by Butt (2010), Butt & Lahiri (2013), do appear to derive from the same lexical verbs, realizing two distinct paths, involving different types of grammaticalization, and leading, respectively, to TAM markers and verbalizers (e.g., resultative markers) in Late Latin and old Lombard, while developing into involitionality markers in old Tuscan and old Mantoan.

Therefore, rather than hypothesizing one underspecified lexical entry for both the full/main verb and its light verb use, with the auxiliary function derived through grammaticalization from the former, as proposed in (Butt 2010: 68), Butt & Lahiri (2013), as pointed out in Section 2.1.2, a more insightful model for describing the different syntactic status of auxiliaries and light verbs and their diachrony in the languages and early varieties analysed, is Bisang's (2008) notion of a "source concept" from which different uses and constructions diffuse (also Bisang 2011: 112), as illustrated in (27). This scheme accounts for different types and degrees of grammaticalization and integration of the various uses of a lexical verb into the verbal paradigm, high for the auxiliary and light verb uses of one and the same lexical verb. The light verb function, however, retains one of the lexical entailments of the lexical verb they derive from, the transitional component – following Butt & Lahiri's (2003) proposal for the lexical semantic representation of light verbs and their fully lexical uses –, leading to a grammatical element, the light verb, contributing to the argument structure of the complex predicate, as a verbalizer (conveying the aspectual nuance of resultativity) and/or an involitionality marker (see also Butt & Lahiri 2013 for a slightly different scheme).



As for the internal structure of the eventuality described by the joint predication consisting of the light verb uses of COME/BECOME + the past participle of the lexical verb, following Butt & Lahiri (2003: 44–45), two subevents can be identified, an accomplishment event structure, instantiated by the transition, i.e., a process, and its result state. This analysis provides an interesting insight into the difference between the auxiliary and light verb usage of a lexical verb when the latter

conveys an aspectual nuance (e.g., resultativity), differentiating it from the purely tense-aspectual function of its auxiliary use (Butt & Lahiri 2003: 44).

Light verbs, therefore, may not be “immune” to change, as illustrated for Late Latin and early Italo-Romance. Of the two types of contributions they make to the complex predicate they occur in, as (i) verbalizers and (ii) involitionality markers, the former appears to instantiate a core property of light verbs, attested both in Late Latin and in early Italo-Romance, unlike the involitionality function, only attested in some vernaculars and subsequently lost, occurring in highly idiomatic and lexicalized forms in contemporary Italian.

## 6. Conclusions

The analysis of the syntactic behaviour and semantics of the verbs COME and BECOME in conjunction with the past participle of a lexical verb, in (passive) auxiliary and light verb functions, in the transition from Latin to early (Italo)Romance, appears to bring interesting data to the current debate on the rise and grammaticalization paths of passive auxiliaries and on the status and diachrony of light verbs as compared with auxiliaries.

More specifically, the Latin constructions *fieri* ‘become’ + past participle and *venire* ‘come’ + past participle, although following different paths of grammaticalization, seem to involve a stage at which the lexical verbs *fieri* and *venire* become equivalent to the copula *esse*. Thus, the auxiliarization of *fieri/venire* + past participle might be regarded as a case of regrammation or copula expansion, whereby a new grammatical function is added to an already grammatical element (the copula), and involving also a change in the nature of the complement of the verb (nominal/adjective > verbal adjective > verbal participle).

The trigger of the passive reinterpretation of the sequences *fieri/venire* + past participle appears to be a change in the aspectual classes of the past participle of the verbs occurring in these periphrases, from achievements/accomplishments – with which the pattern can be ambiguous between an anticausative and a passive interpretation, depending on the syntactic context –, to activity verbs, with which only the passive reading is available.

Although occurring in passive function (marking imperfective passives) in late Latin, the verb *fieri* is also found in conjunct participles, in light verb function, acting as a verbalizer, a usage attested later than its auxiliary use and also found in old Lombard for its continuator *fi*.

The verb *venire*, on the other hand, well attested in imperfective passive function in several early Italo-Romance varieties, also occurs in the involitional subtype of light verb function in old Tuscan and old Mantoan, coexisting with the passive

auxiliary function, sharing the same syntactic behaviour (the compound participial pattern) in the latter variety.

Thus, there is no evidence, either in late Latin or in early Italo-Romance, for light verbs as diachronically intermediate between their fully lexical and auxiliary status.

The data also reveal the existence of more than one light verb construction with *venire*, sharing the same syntactic properties (e.g., occurrence in compound tenses), but varying in meaning, ranging from the lexical (indefinite change) to the more grammatical (eventive–impersonal) reading.

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## Abbreviations

ABL	ablative (case)
ACC	accusative (case)
ACT	active
AGR	agreement
AN	animate
COMPL	complement
DAT	dative (case)
ERG	ergative
F	feminine
FUT	future
GEN	genitive
GER	gerund
IMPRF	imperfect (tense)
IMPER	imperative
IND	indicative
INF	infinitive
INTR	intransitive
M	masculine
MPASS	medio-passive marker –R (in middle, passive or impersonal function)
NEUT	neuter
NOM	nominative (case)
PASS	passive

PERF	perfect (tense)
PL	plural
PRS	present (tense)
PST	past (tense)
PTCP	past participle
PLUPRF	pluperfect
RFL	reflexive
SG	singular
SBJV	subjunctive
TRANS	transitive
1	first person
2	second person
3	third person

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# From preverbal to postverbal in the early history of Japanese

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Old Japanese (largely 8th century AD; OJ) is, like Middle and Modern Japanese, a typical SOV language and also shares with them a complex predicate construction consisting of two adjacent verbs,  $V_1 V_2$ , of which  $V_2$  has some grammatical function, (i). However, OJ in addition has a complex predicate construction in which  $V_1$  is grammatical and  $V_2$  is the main verb, (ii), which seems anomalous in an SOV language and which is not found in Middle or Modern Japanese.

- (i) NJ *nomi-au* (lit. 'drink-meet') 'drink together'
- (ii) OJ *api nomu* (lit. 'meet drink') 'drink together'

Situated within a classical version of Henning Andersen's language change theory, this paper offers a diachronic interpretation of the OJ construction in (ii) as a transient stage in the emergence of the complex predicate construction in (i), which may be understood as having arisen through categorial reinterpretation of preverbal adverbial material as grammatical, reflected in (ii), followed by a structurally motivated shift to postverbal position, reflected in (i). This proposal is further generalized to account for several grammatical suffixes in Japanese as having originated in similar sets of innovations, specifically the prohibitive final particle *na*, negative  $-(a)n-$ , conjectural  $-(a)m-$ , necessitive *be-* and negative potential *masizi*.

**Keywords:** Japanese, Old Japanese, word order change, abductive innovations, deductive innovations, aktionsart verbs, categorial reinterpretation, complex predicates

## 1. Introduction

This paper considers a seemingly anomalous and not well described word order phenomenon in Old Japanese, the earliest attested stage of Japanese (largely 8th century AD; abbreviated OJ), and proposes a diachronic interpretation of it, which in turn

can be generalized and extended to an understanding of other morpho-syntactic developments which may be reconstructed for pre-OJ, including the emergence of a number of grammatical morphemes in OJ.<sup>1</sup>

OJ is, like NJ, considered a typical SOV or verb final language. Like NJ it has left-branching and head-final modifying structures, postpositional case and other particles and suffixal morphology.<sup>2</sup> Also like NJ, OJ has a frequently used complex predicate construction consisting of two adjacent verbs,  $V_1 V_2$ , of which  $V_2$  has some grammatical function, (1).

- (1)  $V_1 V_2$  e.g. NJ *nomi-au* (lit. ‘drink-meet’) ‘drink together’

This ordering of the two verbs in the complex predicate in (1), lexical-grammatical, is entirely consistent with a typical SOV language and this type of construction is well established in all stages of Japanese, from OJ to NJ. However, in addition, OJ has a competing complex predicate construction in which  $V_1$  is grammatical and  $V_2$  is the main verb, (2).

- (2)  $V_1 V_2$  e.g. OJ *api nomu* (lit. ‘meet drink’) ‘drink together’

The construction in (2) seems anomalous in an SOV language, and it is not found in NJ, nor to any significant extent in Middle Japanese (800-1600). Nor is it in fact generally recognized or systematically described for OJ.

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1. The history of the Japanese language is usually divided into the following four main periods: Old Japanese (OJ; 700–800), Early Middle Japanese (EMJ; 800–1200), Late Middle Japanese (LMJ; 1200–1600), and Modern Japanese (NJ; 1600–). Modern Japanese is abbreviated NJ (“new Japanese”) in order to avoid confusion with MJ for Middle Japanese. The examples of this article follow academic conventions for rendering OJ texts. All OJ texts were written in Chinese characters, used phonographically and logographically. When citing examples from OJ, phonographically written text portions are transcribed in *italics* (e.g. *pumi* ‘step’ in (4)) and logographically written text in plain type (e.g., *kwoye* ‘cross’ in (4)) when citing full examples. OJ examples cited in this paper are all taken from the main source of the OJ language, the poetry anthology *Man’yōshū* (compiled in the second half of the 8th century, abbreviated MYS), in the NKBT edition (v. 4–7). The OJ poetic texts are now conveniently accessible and searchable through the Oxford-NINJAL Corpus of Old Japanese (ONCOJ) annotated corpus at [oncoj.ninjal.ac.jp](http://oncoj.ninjal.ac.jp), first published 30 March 2018.

2. Further, like NJ, OJ has pervasive subject and object pro-drop. OJ has an extensive inventory of inflecting verbal suffixes, which are not found in NJ, to express aspect, tense and mood. Paradigmatic verb inflection proper in OJ is for syntactic and modal categories (conclusive, adnominal, provisional, conditional, imperative, etc.). OJ does not have a nominative case particle; subjects are sometimes bare and sometimes marked by one of the two genitive case particles *no* and *ga*. Of these two genitive particles, *ga* has become a nominative case particle in NJ, whereas *no* remains a genitive in modern Japanese. See further Frellesvig (2010) on premodern Japanese.

In this contribution I propose an understanding of the OJ construction in (2) as representing a transient stage in the emergence of the complex predicate constructions in Japanese exemplified in (1). My proposal is situated within a classical version of the theory of language change which Henning first developed in the early 1970s and which, since its first fully expanded publication in Andersen 1973, has had a profound impact on the discipline, constituting a major theoretical contribution to both general and historical linguistics. Other than basing itself on the theoretical concepts developed by Henning, my account of these Japanese constituent order phenomena draws particular inspiration from Henning's account and understanding of some long-term word order and categorial changes in Polish (Andersen 1987), which have several points in common with those found in Japanese: Both involve categorial reinterpretation (an abductive innovation) and subsequent structurally motivated shifts in surface position, gradually realized over time (deductive innovations).

In Section 2, I give a brief description of the relevant complex predicate constructions in OJ. Section 3 presents the hypothesis about the OJ  $V_1$  aktionsart complex predicates as a transient stage in the realization of the development of aktionsart complex predicates in Japanese, namely that these originated in preverbal adverbial material which was categorially reinterpreted as grammatical, reflected in the  $V_1$  aktionsart verb construction in (2), and which subsequently came to be realized in postverbal position, reflected in the  $V_2$  aktionsart verb construction in (1). In Section 4, I propose that a number of (postverbal) grammatical morphemes in OJ may be understood in terms of the same kinds of innovations, categorial reinterpretation followed by structurally motivated shift in position, in particular the OJ prohibitive final particle *na*, the negative verb ending *-(a)n-*, the conjunctural verb ending *-(a)m-*, the necessitive clitic *be-* and the negative potential clitic *masizi*, all of which are reflected in NJ.

## 2. Complex predicates in Old Japanese

NJ has a large, productive system of complex verbal predicates which take the form of V-V compounds.<sup>3</sup> They have been studied extensively, primarily by or led by Taro Kageyama (e.g. Kageyama forthcoming), who has established the framework

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3. "Complex verbal predicate" is here used to refer to a predicate of a single surface level clause which consists of two verbs which both contribute semantically to the predication. This definition conforms to most definitions of serial verb constructions (e.g., Nishiyama 1998), but excludes for example auxiliary verb constructions and other periphrastic or analytic verb formations. Complex predicate structures are "monoclausal" at the level of surface structure, but in some cases

for characterizing and categorizing these V-V complex predicate compounds in terms of four types. Kageyama's four types differ in a number of respects, but from the point of interest of this paper they may be grouped in two overall categories as shown in (3), *viz.* (3a) which contains Kageyama's Type 1, and (3b) which comprises Kageyama's Types 2–4. In the construction in (3a),  $V_2$  is the main verb (i.e., the primary determinant of argument structure and case assignment) and  $V_1$  modifies  $V_2$  in terms of manner. In the constructions in (3b),  $V_1$  is the main verb and its lexical meaning is augmented in terms of *aktionsart* meanings by  $V_2$ .<sup>4</sup> I follow Aoki and Frellesvig (forthcoming) in using the term “aktionsart verb” for  $V_2$  in these constructions. The aktionsart verbs in Japanese are characterized by retaining their use as full lexical verbs alongside their grammatical function as part of complex predicates.<sup>5</sup>

(3) V-V complex predicate compounds in Modern Japanese

- a. **Thematic verb compounds:**  $V_{1\{\text{manner}\}} - V_2$   
 $V_1$  modifies  $V_2$ , mainly in terms of manner;  $V_2$  is the primary determinant of argument structure and case assignment

Type 1. Lexical thematic compound verbs

e.g. *aruki-tukareru* ‘get tired from walking {lit. ‘walk-get.tired’}’

- b. **Aktionsart verb complexes:**  $V_1 - V_{2\{\text{aktionsart}\}}$   
 $V_1$  is the primary determinant of argument structure;  $V_2$  is grammatical(ized) and augments the lexical meaning of  $V_1$  in terms of *aktionsart* meanings

Type 2. Lexical aspectual compound verbs,

e.g. *ami-ageru* ‘finish knitting (lit. ‘knit-accomplish’)’

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derive from deeper level complementation structures which may be thought to be multiclausal and merge in the course of derivation (see Kageyama, forthcoming).

4. Within scholarship on V V complexes in Japanese, the term “aktionsart” is not used in the narrow sense of ‘lexical aspect’ in which it has been adopted in much English language literature, but in the more traditional wider sense of “(grammatical) manner of action”, which the word itself (*aktions-art*) suggests.

5. In the Japanese grammatical tradition, the aktionsart verbs are included in, and make up the larger part of, a category labelled “*hozyodoosi*” (lit. ‘helping verb’, usually translated as ‘auxiliary verb’). However, this categorization is misguided as it includes both the aktionsart verbs that take part in forming complex predicates and auxiliary verbs proper; and it is terminologically unfortunate because most of the verbs included under this label (*viz.*, the aktionsart verbs) are not auxiliary verbs in the conventional use of that word. Note also that type 4 (syntactic complex verbs) tends more towards auxiliary verb constructions rather than complex predicate constructions. Type 4 is an LMJ innovation and not found in OJ.

Type 3. Syntactic aspectual compound verbs,  
e.g. *hataraki-tuzukeru* ‘keep on working (lit. ‘work-continue’)

Type 4. Syntactic complex verbs  
e.g. *yonde simau* ‘finish reading (lit. ‘reading put.away’),

We find both of these two overall categories of complex predicates in OJ, e.g. (4) and (5) (see Aoki and Frellesvig (forthcoming), on which this section draws, for more detail about complex V V predicates in premodern Japanese). Note, however, that the two verbs in the OJ complex verbal predicates, in contrast with the NJ constructions, do not form morphological compounds (see e.g. Aoki and Frellesvig forthcoming). The change to morphological compounding of the complex predicates seems to have taken place during the LMJ period.<sup>6</sup>

- (4) *asipikwi no yatu wo pumi kwoye*  
 EPITHET eight mountain(top) step cross  
 ‘Walk across many mountains’ (MYS 19.4164)
- (5) *yuyusiki kimi ni kwopwi wataru kamo*  
 awesome lord DAT yearn cross EMPH  
 ‘I will continue to yearn for you, my awesome lord!’ (MYS 15.3603)

In (4), *asipikwi no yatu wo* is primarily the argument of  $V_2$  *kwoye*, with  $V_1$  *pumi* expressing the manner of crossing, and together they mean ‘walk across’. Functionally, this example is like the (Type 1) lexical thematic compounds of NJ, with  $V_1$  *pumi* modifying  $V_2$  *kwoye* in the same way that  $V_1$  modifies  $V_2$  in a lexical thematic compound in NJ. It must be noted, however, that because of the difference in wordhood between the OJ and NJ constructions it is strictly speaking for OJ not possible to determine that  $V_1$  always is part of a mono-clausal complex predicate, rather than forming its own one-word, subordinate clause, i.e., [*asipikwi no yatu wo [pumi] kwoye*] ‘cross many mountains, by stepping (on foot)’. See Aoki and Frellesvig about such potential ambiguity and the difficulties in resolving it. See also further below (Section 3) about the role of single word subordinate clauses in the development of complex predicate constructions in Japanese.

(5) exemplifies a complex predicate where  $V_1$ , *kwopwi* ‘yearn for’, is the main verb and  $V_2$ , *wataru*, lit. ‘cross’, has little independent lexical meaning, but expresses ‘continuative’ or ‘indefinite extent’, together with *kwopwi* meaning ‘continue to

6. In OJ,  $V_1$  in a complex predicate construction was in the infinitive, and in NJ  $V_1$  in V-V compounds is in a stem form segmentally identical with the infinitive. Partly for that reason, the infinitive is used as the citation form of verbs in this paper. In later stages of Japanese, the “infinitive” is usually considered a coordinating form, but the OJ “infinitive” was generally a subordinating verb form (‘VERBing; having VERBed’).



yearn for'. Such examples are like the Type 2 and 3 (aspectual) compounds of NJ, in which  $V_2$  is grammatical(ized) and augments the lexical meaning of  $V_1$  in terms of *aktionsart* meanings.

The OJ inventory of *aktionsart* verbs includes the following, (6), with the lexical meaning given in brackets (see Frellesvig et al. 2010: 35f for a fuller inventory). The categories expressed by *aktionsart* verbs has remained largely the same over time, from OJ to present-day Japanese, although the inventories of verbs used as *aktionsart* verbs have changed over time (cf. e.g. Aoki 2013; Kageyama 2013).

- (6) Some OJ  $V_2$  *aktionsart* verbs  
 Explorative: *mi* ('see')  
 Reciprocal: *api* ('meet')  
 Adventive: *ki* ('come')  
 Inceptive: *ide* ('go out'); *kake* ('hang up'); *pazime* ('begin, start (tr.)')  
 Potential: *e* ('get')  
 Continuative: *yuki* ('go'); *tugi* ('convey'); *topori* ('pass through'); *watari* ('cross')  
 Social deixis: *itadaki* ('receive'); *maturi* ('offer'); *tamapi* ('give'); *tamape* ('receive')  
 Degree: *kwosi* ('put over'); *kwoye* ('go over'); *masari* ('exceed'); *sugusi* ('put beyond'); *sugwi* ('go beyond'); *tari* ('suffice').

So far, the OJ complex predicates we have seen are more or less identical to the main types in NJ, summarized in (3) above, apart from the difference in wordhood of the complex predicate. However, an important difference between OJ and NJ Japanese is the existence in OJ of a complex predicate construction not found in NJ, in which  $V_1$  is an *aktionsart* verb and  $V_2$  is the main verb, exemplified in (7)–(10).

- (7) *ari* Iterative ('be, exist')  
*sima-dutapi i-kogi watarite ari meguri*  
 island-pass.along PFX-row cross.GER be go.around  
 'I keep going around and around the islands, crossing by boat between them'  
 (MYS 20.4408)
- (8) *api* Reciprocal ('meet')  
**api noma-mu ki**  
 meet drink-CONJ *saké*  
 'The *saké* we will drink together'  
 (MYS 19.4264)
- (9) *ki* Adventive ('come')  
*asipikwi no yama ki pyenarite*  
 EPITHET mountain come be.between.GER  
 'The mountains having come between us'  
 (MYS 17.3981)

- (10) *siki* Exhaustive/Continuative ('stretch, extend')  
 paru no ame pa iya siki puru ni  
 spring GEN rain TOP more.and.more extend fall although  
 'Although the spring rain keeps falling' (MYS 4.786)

(11) gives some OJ  $V_1$  aktionsart verbs. It is noteworthy that most of these are also attested as  $V_2$  aktionsart verbs.

- (11) Some OJ  $V_1$  aktionsart verbs  
 Iterative/Stative: *ari* ('be, exist')  
 Potential: *e* ('get')  
 Reciprocal/Proximative: *api* ('meet')  
 Additive: *ape* ('join (tr.)')  
 Elative: *ide* ('emerge, go out')  
 Adventive: *ki* ('come')  
 Exhaustive/Continuative: *siki* ('stretch, extend')  
 Inceptive: *tati* ('stand up, set out')  
 Permeative: *topori* ('pass through')  
 Contiguative: *tugi* ('pass on')

The OJ  $V_1$  aktionsart verb construction was first identified as an independent and significant construction in Aoki and Frellesvig (forthcoming). The  $V_1$  aktionsart verb construction is not explicitly recognized in descriptive grammars of OJ, although a few  $V_1$  aktionsart verbs are mentioned as (etymologically) deverbal "prefixes", in particular *api*, *ari*, *e*, and dictionaries will sometimes remark on 'helping' (= aktionsart) verb like usage in  $V_1$  position of some verbs. However, this is an important OJ construction which merits explicit recognition and further study in its own right. The verbs given in (11) are good candidates for  $V_1$  aktionsart verbs, out of what is probably a somewhat larger set. Much detailed descriptive work remains with regard to this construction in OJ, but in this paper, I focus on the diachronic role and implications of this construction.

### 3. A diachronic understanding of the Japanese aktionsart verbs

The diachronic distribution of aktionsart complex predicates is thus as shown in (12), with both  $V_1$  and  $V_2$  aktionsart verbs in OJ, but only  $V_2$  aktionsart verbs in NJ. I use Reciprocal *api* (> EMJ *awi* > EMJ/LMJ/NJ *ai* through regular sound change) to exemplify these constructions here and in the following.

- (12) Old Japanese  
        $V_1$  aktionsart    *api* VERB    (fewer; less frequent)  
        $V_2$  aktionsart    VERB *api*    (more; more frequent)  
 Modern Japanese  
        $V_2$  aktionsart    VERB-*ai*

Given this distribution, it is tempting for the historical linguist to consider the possibility that OJ in some way is transitional in a change from a pre-OJ stage with only  $V_1$  aktionsart verbs to a post-OJ stage with only  $V_2$  aktionsart verbs. Such a hypothetical development may be illustrated as in (13).

- (13) Pre-Old Japanese  
        $V_1$  aktionsart    *api* VERB  
 Old Japanese  
        $V_1$  aktionsart    *api* VERB  
        $V_2$  aktionsart    VERB *api*  
 Modern Japanese  
        $V_2$  aktionsart    VERB-*ai*

However, as mentioned, the  $V_1$  aktionsart verb construction is not a good typological fit with the overall structure of a strong SOV language like Japanese, which has suffixation and postverbal morphology, and so the hypothetical development set out in (13) would raise the following two questions: (a) Where did the  $V_1$  aktionsart verb construction come from and where did it go? (b) Where does the  $V_2$  aktionsart verb construction come from?

(a) One possible answer to the first question might be that the  $V_1$  aktionsart construction reflects a stage of the language with a different basic constituent order. And in fact, something along those lines has been proposed by Alexander Vovin, a leading scholar of Old Japanese, in the section in his reference grammar of OJ on verb “prefixes”, which comprise *api*, *ari*, *e*. Like other grammars of OJ, Vovin’s reference grammar does not recognize  $V_1$  aktionsart verbs as such, but in this section he remarks, in passing and with no further elaboration or comment, that the preverbal position of these deverbal prefixes may reflect “the last stages of transition from a SVO to a SOV language” (2009: 589). However, first of all, there is nothing else within OJ that would seem to suggest that pre-OJ had a different word order than SOV. Second, such a suggestion might seem attractive in conforming to the idea that “today’s morphology is yesterday’s syntax” (Givon 1971), but while that surely is relevant in some cases, it should not be assumed to be the default diachronic explanation for observed morpheme order (e.g., Comrie 1980; see also Andersen 1987: 1).

(b) As for second question, about the origin of the  $V_2$  aktionsart complex predicate structures, they might be thought to originate in *in situ* reanalysis of a  $V_2$  in a clause sequence, i.e., something like  $[[\dots V_1] V_2] > [\dots V_1 V_2]$ ; this could be where  $V_2$  is a higher verb which takes a clausal complement, or through the kind of semantic bleaching usually posited in the grammaticalization literature, here of a  $V_2$ . However, there are not really many verbs, if any, in OJ that take full clausal (as opposed to simply verbal) complements where the verb of the complement clause is in the infinitive, and it is not obvious that the semantic bleaching of a main verb following a subordinate verb would occur all that easily.

As an alternative to these explanations, I propose here a scenario situated within a classical version of Henning's language change theory which posits sets of abductive and deductive innovations to describe and explain language change, as first comprehensively set out in Andersen (1973). The scenario proposed here provides a simple, realistic and structured account of the origin of aktionsart verb constructions in Japanese, and more specifically the origin and subsequent demise of  $V_1$  aktionsart verbs in conjunction with the origin of  $V_2$  aktionsart verbs. The innovations involved may be set out as in (14).

- (14) a. initial *abductive* innovation(s) in grammar: categorial reanalysis of  $V_1$  in a verb verb sequence from lexical "manner" modification to grammatical "aktionsart" augmentation.
- b. subsequent *deductive* innovation(s) in usage: structurally/typologically motivated realization in surface position of the grammatical aktionsart verbs in postverbal rather than preverbal position.

The specific scenario I have in mind may be summarized as in (15), which shows four stages of the language, from Pre-OJ-1 to Post-OJ, the distribution of aktionsart verb constructions at each stage, and the innovations which took place between these stages. The first stage in this scenario, Pre-OJ-1, before the emergence of aktionsart complex predicates, shows the kind of structures I propose aktionsart complex predicates to have originated in, namely verb verb sequences in which a higher verb is directly preceded by a single-word subordinate clause which expresses manner or circumstance of the higher verb, noted as  $[\dots [V_1]_{\text{manner}} V_2]$ . Such structures,  $V_1 V_2$  sequences where  $V_1$  is subordinate to  $V_2$ , has no overt local arguments and shares the subject with  $V_2$  (whether it is overtly expressed in the clause of  $V_2$  or not), are frequent in all stages of Japanese.<sup>7</sup> Their frequent occurrence is facilitated by the facts that (Old) Japanese is verb final and has a high

7. In OJ,  $V_1$  was most frequently in the infinitive form in such structures, though the gerund was also found. In NJ, by contrast, the gerund is the most frequent form of  $V_1$  found in these structures.



from depleted to no clausal status: a subjectless, depleted subordinate (adverbial) verb phrase *kyepu wo pazimete* (today ACC begin.GER) ‘beginning with today, from today’; an infinitive derived adverb, *pazime* ‘(at) first; from/at the beginning’; and a gerund derived adverb: *pazimete* ‘(at) first; from/at the beginning’.<sup>8</sup>

The first innovation I propose in the scenario in (15) took place between Pre-OJ-1 and Pre-OJ-2 and resulted, or consisted, in the emergence of aktionsart verbs. It is similar to the kind of adverbialization just described, but goes somewhat further than that. It consists in a deeper categorial reinterpretation of  $V_1$ , from lexical manner modification to grammatical aktionsart augmentation of the meaning of  $V_2$ , e.g., *api* VERB being reinterpreted from adverbial manner modification ‘VERB, meeting/having met’ to Reciprocal aktionsart ‘VERB (with/to) each other’, or *ki* VERB reinterpreted from ‘VERB, coming/having come’ to Adventive ‘come to VERB’, with no actual motion involved, as exemplified in (9) above. This first innovation is a straightforward case of “grammaticalization” in the literal meaning of that word: the reinterpretation of something lexical as being (more) grammatical. As shown in Pre-OJ-2 and following stages in (15), this did not result in the replacement or loss of [... [ $V_1$ ]<sub>{manner}</sub>  $V_2$ ] verb verb sequences, which as mentioned above have remained part of the language ever since.<sup>9</sup> Instead it consisted in the reinterpretation of individual items as having grammatical properties, as well as in the emergence of a new type of functional morpheme, the aktionsart verb, and a new grammatical construction (the aktionsart verb complex predicate construction). It is thus a significant structural change in the morpho-syntactic system of Japanese, forming part of the emergence of complex predicates in the language.

Abductive innovations regarding core structure take place in the acquisition of a language and are classically, e.g. Andersen (1973), thought to be based on “ambiguities” in the speech from which specific properties of a language and its grammar are inferred by learners of the language. The notion of “ambiguity” is not very clear (just about anything can be ambiguous in some respect), but in any case, we are not in a position to point in any detail to particular, actual ambiguities which could have given rise to this innovation, especially so because it took place in the pre-history of the language, predating the existence of textual evidence. However, there is clearly a close semantic affinity between (adverbial) manner and (grammatical) aktionsart (lit. ‘manner of action’) which will have been involved in the reinterpretation.

8. Thus, this structure, [... [ $V_1$ ]<sub>{manner}</sub>  $V_2$ ], is also the origin of the thematic complex predicates in Japanese, but as opposed to the cases of adverbialization just mentioned, where  $V_1$  was reinterpreted as a lexical adverb, in such cases,  $V_1$  retained its verbhood, but came to form a complex predicate with  $V_2$ .

9. Recall also that the items reinterpreted as aktionsart verbs, i.e., as having grammatical properties, (e.g. *api* RECIPROCAL), also retained their use as full lexical verbs (e.g. *api* ‘meet’).

As is in the nature of abductive innovations, this first innovation had no overt effects, but it did have invisible effects on the structure of the grammar and on the categorial properties of individual items and consequently also on their position in underlying syntactic structure.

By contrast, the second, deductive, innovation involves a shift in surface position from preverbal to postverbal position of the aktionsart verb. This is in one sense not really an innovation, but simply the realization, by grammatical *implementation rules* (Andersen 1973), of the structural features of the grammar resulting from the first innovation, that is to say, the realization in linear surface order of the underlying syntactic structural position of grammatical elements (the aktionsart verbs), given the overall typological properties of Japanese. However, it is innovative in the sense of producing usage which is innovative. Such innovative usage, e.g., VERB *api*, is produced by and is consistent with the core grammar of the language, but at the same time it is at odds with the traditions and norms of the speech community, whereas the conservative usage, e.g. *api* VERB, is consistent with these norms and traditions, but not with the productive grammar. This in turn means that the  $V_1$  aktionsart verb construction strictly speaking never was much of a productive construction in the language, but that  $V_1$  aktionsart structures were produced by so-called *adaptive rules* (Andersen 1973), whose function is to modify the output of the implementation rules (which form part of the productive, structured, generative core of the grammar) to make output conform with the traditions and norms of the speech community.

Thus, what we observe as coexistence at the OJ stage of  $V_1$  and  $V_2$  aktionsart verbs is the gradual realization of the outcome of the initial abductive innovation, with innovative VERB *api* generated by implementation rules, but conservative *api* VERB produced by the application of adaptive rules to the output of the implementation rules. The final stage in (15), Post-OJ, reflects that the adaptive rules producing  $V_1$  aktionsart verbs have been eliminated. This will have taken place gradually, as the usage norms to which they made reference changed over time to accept the innovative sequence.

In short, this is the scenario I propose: a semantically motivated categorial reinterpretation, with structural implications which are realized gradually, through the presence of both (conservative, unproductive) preverbal and (innovative, productive) postverbal aktionsart verbs, but with the older, structurally unmotivated, order disappearing over time to give us Post-OJ, with only postverbal aktionsart verbs. This account of the observed changes in the position of aktionsart verbs in Japanese was inspired by Henning's description of a structurally motivated shift in position as part of a categorial reinterpretation in Polish in which forms of the verb 'to be' over several centuries shifted from sentence clitics regularly placed in clause-second position to verbal endings marking person and number (Andersen 1987). In that

article, Henning is able to chart these developments in detail, amongst others due to the quality, time-depth and volume of textual evidence. However, given the time of the changes within Japanese discussed here, with the crucial initial innovations having taken place in Pre-OJ, before the written attestation of Japanese, we are not in a position to trace the actual manifestation of the proposed developments. Of necessity, any attempt, including this one, to present a detailed scenario as part of a motivated explanation of the diachronic distribution observed in OJ and following stages of the language summarized in (12) above, remains hypothetical. This scenario, and of the proposed explanation underlying it, may first of all be judged on perceived explanatory power in accounting for the diachronic distribution of  $V_1$  and  $V_2$  aktionsart verb constructions, as well as on overall plausibility.

However, it is possible to find illustrative textual evidence within OJ which seems to exemplify both the precursor which I posit for the aktionsart verb construction, as well as both pre- and post-verbal aktionsart verbs, and which therefore can be taken to support the proposal. Compare the three examples in (16) which all include forms which ultimately reflect the lexical verb *topori* ‘pass through’, here in combination with *nure* ‘get soaked’. In (16a), the gerund *toporite* is used adverbially, but semantically bleached, to mean ‘through and through; completely’. In (16b), we see  $V_1$  aktionsart verb use of *topori* for Permeative, and in (16c) we have  $V_2$  aktionsart verb use in the same sense.

- (16) a. koromo no swode pa **toporite** **nure-nu**  
 garment GEN sleeve TOP passing.through get.soaked-PERF  
 ‘The sleeves of (my) clothes are **completely soaked**’ (MYS 2.135)
- b. amawotomyera ga [swode **topori** **nure-ni-si**]  
 diver.girl GEN sleeve pass.through get.soaked-PERF-PST  
 koromo  
 garment  
 ‘The clothes of the diver girls, of which the sleeves are **soaked through**’  
 (MYS 7.1186)
- c. *sigure* *puri* **nure** **toporu** *tomo*  
 rain.showers fall get.soaked pass.through even.if  
 ‘even if (I) get **soaked through**, with rain showers falling’ (MYS 9.1760)

#### 4. Other similar developments

Furthermore, it seems to be possible to find or posit other similar structurally motivated shifts in position within the early history or pre-history of Japanese which may be understood as involving the same set of innovations as the aktionsart verbs: Categorical reinterpretation of a preverbal adverbial element as a grammatical



element, accompanied by a shift in position. The first example is *na* which expresses prohibition (negative command).<sup>10</sup> In OJ, *na* can occur in both preverbal and postverbal position, but in NJ it is only found as a postverbal particle. Thus, *na* has the same kind of diachronic distribution as aktionsart verbs: both preverbal and postverbal in OJ and only postverbal in NJ, (17) with *yuki* ‘to go’.

(17) Old Japanese

Prohibitive construction *na yuki so* ‘don’t go!’

Preverbal prohibitive *na yuki* ‘don’t go!’

Postverbal prohibitive *yuku na* ‘don’t go!’

Modern Japanese

Postverbal prohibitive *yuku na* ‘don’t go!’

The developments in the position of prohibitive *na* may be explained by the same kind of innovations which we posit in the development of aktionsart verb constructions: Categorial reinterpretation of *na* (lexical to grammatical: from adverb to grammatical particle), followed by a structurally motivated shift in surface position (from preverbal to postverbal). When used preverbally, OJ *na* is more often than not reinforced by postverbal *so* (a fossilized Pre-OJ imperative of *si* ‘to do’). Whereas preverbal *na* on its own disappeared after OJ, the construction, *na* VERB *so*, is found throughout EMJ and is often described as a prohibitive circumfix *na...-so*. Eventually, though, that construction disappeared as well and left only postverbal *na*, so although the details differ, the overall scenario is the same as with the aktionsart verbs. The differences may be seen to reside not in the initial abductive innovation, but in the (deductive) realization of the outcome of it. More specifically, it seems likely that the reinterpretation of *na* as a grammatical element originated in the pre-OJ construction *na* VERB *so* in which *so* carried the imperative force and *na* was a negative adverb, giving rise both to (a) the discontinuous prohibitive morpheme *na ... so* found in OJ and EMJ, as well as to (b) the prohibitive particle *na*, which had absorbed the imperative force and was used without *so* and which in OJ still was found in preverbal position, but mainly in postverbal position, and later only in postverbal position.

Another example is the modal postverbal clitic *be-* which is termed Necessitive, but has a wide range of meanings: ‘must, may, can, should’, (18). *Be-* may be thought to be related to the adverb *ube* ‘indeed’, (19).

10. Whitman (2010) discusses OJ *na* and other Japanese and Korean preverbal elements in a synchronic, theoretical syntactic perspective, rather than the diachronic one adopted here.

- (18) *kwopwi ni sinu be-si*  
 yearning DAT die NECESSITIVE-CONCL  
 ‘I will/would die from yearning’ (MYS 15.3578)
- (19) *ube mo sakitaru ume no pana*  
 indeed even bloom-STAT plum GEN blossom  
 ‘The plum blossoms which will indeed be blooming’ (MYS 5.831)

Here the development is: Categorical reinterpretation of a (modal) adverb as a grammatical element, which then came to be realized in post-verbal position, in the event also acquiring adjectival morphology. The adverb *ube* is not very well attested in OJ, with around 30 attestations (half of which are logographically written), and it is not found in the language after OJ. However, although to a smaller extent than was the case with the aktionsart verbs, the coexistence in OJ of preverbal adverb *ube* and postverbal clitic *be-* does afford a view of a stage in the realization of the outcome of the reinterpretation of the adverb as a grammatical element, whereas the following stage of the language only shows the eventual outcome (i.e., OJ (*ube* VERB ~ VERB *be-*) > EMJ (VERB *be-*)).

So, too, does a further example, but to an even smaller extent: The main mode of negation in Japanese is by an inflecting suffix attached to the verb, e.g. *sirani* in (20). Synchronically, verb forms like *sirani* are segmented as *sir.a-ni*, as shown in (20), but diachronically the /a/ is thought to have been part of the negation, i.e. \**sir-ani*, but to have been resegmented as part of a verb stem (*sir-ani* > *sir.a-ni*),<sup>11</sup> and I will therefore here write the OJ negative suffix in the anachronistic form *-ani*; see Frellesvig (2008: 184) for details of this resegmentation.<sup>12</sup> The negative grammatical suffix *-ani* may be thought to originate in reinterpretation of a (preverbal) negative adverb *ani*, see (21), as a grammatical morpheme which then came to be realized in postverbal position (accompanied by the acquisition of verbal morphology). That is to say, the same set of abductive and deductive innovations which was involved in the aktionsart verbs and in the Necessitive postverbal clitic.

- (20) *ipa-mu subye se-mu subye sira-ni*  
 say-CONJ means do-CONJ means know-NEG  
 ‘not knowing what I might say or what I might do’ (MYS 5.794)

11. In forms like *sir.a-ni*, the verb base is *sir-*, *-a-* derives a stem used with a number of suffixes, and *ni* is the negative suffix.

12. The OJ Negative suffix has an irregular paradigm, with some suppletive forms. *-ani* is the infinitive, representing an earlier regular paradigm, but was already in OJ in the process of being replaced by the suppletive form *-azu*. Other forms reflecting the earlier regular paradigm continued in the language, e.g., Adnominal *-anu*, Exclamatory *-ane*, amongst others, and are amply reflected in NJ negative verb formations.

- (21) pito-tuki *no* nigoreru sake *ni* ani masa-*me* ya *mo*  
 one-cup GEN cloudy saké DAT at all be.better-CONJ Q EMPH  
 ‘Could it at all be better than a cup of cloudy saké?! (No, not at all.)’

(MYS 3.345)

Now, OJ *ani* is attested only in a good handful of instances (most written logographically), variously interpreted as ‘no!, nay!, (not) at all’ and used either in correlation with a negative verb form or a rhetorical question anticipating a negative reply. The adverb *ani* was lost from the language after OJ, so in this case we only have vestigial reflection in OJ of the adverb which may thought to have been the origin of the grammatical negative suffix, and it is doubtful that the scarce attestation and somewhat opaque meaning of OJ *ani* would have sufficed to form the basis for us to recognize the relationship. The recognition of this Japanese internal relationship has rather been aided by the long-standing proposal that the OJ negative suffix *-ani* is cognate with the Korean negative adverb *ani*, which even in modern Korean constitutes the main expression of negation in Korean, either on its own in preverbal position (*ani* VERB) or with *do*-support (VERB *ani hata*, with some phonological fusion between *ani* and *hata* ‘do’). This proposal of cognation is based on the close correspondence in both content and expression between Japanese *-ani* and Korean *ani*, but until now no plausible hypothesis has been offered to account for the significant morpho-syntactic differences in the use of this etymological material between the two languages, which in most other respects are typologically very similar. The hypothesis offered in this paper provides a ready way of understanding this difference: On the Korean side *ani* remained an adverb, whereas it on the Japanese side was reinterpreted from a preverbal adverb to a grammatical morpheme which then came to be realized in postverbal position. We can note the diachronic correspondences on the Japanese side as: pre-OJ \*(*ani* VERB) > OJ (*ani* VERB ~ VERB-*ani*) > EMJ (VERB-*ani*), with OJ giving a glimpse of the last stages of the realization of the outcome of the reinterpretation in the few examples of the adverb *ani* coexisting with the negative suffix *-ani*.

Finally, adopting this line of thinking, there are at least two more pairs of Korean adverb and Japanese grammatical morpheme which may be understood in the same way: (a), the Korean adverb *ama* ‘perhaps’ and the OJ Conjectural suffix *-amV*, cf. *ipamu* in (20) and *masame* in (21) above; as with the Negative suffix, the Conjectural was synchronically *ip.a-mV* at the OJ stage, but had been subject to the same resegmentation as the Negative, originating in *ip-amV*.<sup>13</sup> And (b), the

13. The OJ Conjectural is reflected in NJ, through a series of morphological and phonological changes which took place in EMJ and LMJ, as the Volitional verb ending *-(y)oo*, e.g. *ikoo* ‘let’s go’ (*iki* ‘go’).

Korean adverb *mos* ‘cannot’ and the OJ grammatical morpheme *masizi* Negative potential, see (22).<sup>14</sup>

- (22) *kimi ga kokoro pa wasurayu masizi*  
 my.lord GEN heart TOP forget NEG.POT  
 ‘I cannot forget my lord’s consideration’ (MYS 20.4482)

Also in these cases, it is possible to consider the OJ grammatical morphemes as being the outcome of a categorial reinterpretation of adverbs as grammatical material, followed by realization in postverbal position (*-amV* acquiring verbal morphology and *masizi* adjectival morphology), but as opposed to Korean (*ani* VERB) :: OJ (*ani* VERB ~ VERB-*ani*) there is no supporting material in the form of attested adverbs on the Japanese side in the case of Korean (*ama* VERB) :: OJ (VERB-*amV*) or Korean (*mos* VERB) :: OJ (*masizi* VERB).<sup>15</sup>

Thus, generalizing from the kind of innovations I proposed for the origin of aktionsart verbs in Japanese, we can, at least tentatively, understand the origin of a number of Japanese grammatical suffixes in preverbal adverbs which were reinterpreted as grammatical morphemes and subsequently came to be realized in postverbal position, summarized as correspondences in (23), in many cases accompanied by acquisition of some kind of predicational morphology. This gives a principled and plausible explanation for these relations, over and above simple correspondences in expression and content between forms with different categorial properties and syntactic position.

(23)	OJ postverbal grammatical suffix	
OJ preverbal adverb		
<i>na</i> ‘(do) not’	VERB <i>na</i>	Prohibitive
<i>ube</i> ‘indeed’	VERB <i>be-</i>	Necessitive
<i>ani</i> ‘(not) at all’	VERB- <i>ani</i>	Negative
Korean preverbal adverb		
<i>ani</i> ‘not’	VERB- <i>ani</i>	Negative
<i>ama</i> ‘perhaps, probably’	VERB- <i>amV</i>	Conjectural
<i>mos</i> ‘cannot’	VERB <i>masizi</i>	Negative Potential

14. OJ *masizi* is not very widely attested (under 20 examples), but the reduced shape *mazi* continues in EMJ where it was in widespread use, and it is reflected in the NJ particle *mai* ‘negative conjunctural’.

15. The relationship between the Korean and Japanese material is here expressed in terms that suggest cognation between the two languages, but it could strictly speaking also be due to borrowing, in which case the adverbs eventually reinterpreted as grammatical material most likely would be borrowings from an earlier form of Korean into pre-OJ.

## 5. Conclusion

In this paper I have attempted first of all to provide an account of the origin of aktionsart complex predicates in Japanese, proposing that the coexistence in OJ of  $V_1$  and  $V_2$  aktionsart verbs represents a stage in the realization of the emergence of these complex predicates. Using the conceptual and theoretical tools Henning has given us, it was possible both to account in a plausible and consistent manner for the observed otherwise anomalous and unexplained  $V_1$  aktionsart verbs and based on that to understand the origin and development of the aktionsart verb complex predicate construction in Japanese, rather than simply observe their existence. Based on this, I further proposed that this way of thinking can be used in reconstruction and that the origin of a number of important postverbal grammatical morphemes in OJ which may be linked etymologically to preverbal adverbial material either within Japanese or in Korean may be understood in a way similar to the aktionsart verb complex predicate construction.

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# Reanalysis in the Russian past tense

## The gerundial perfect

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The large majority of the Slavic languages have in historical times lost the synthetic past tenses of the aorist and the imperfect. These tenses were replaced by a new past tense based on the erstwhile perfect. This transformation created space for new ways of forming a past tense, and one of these was a novel past tense based on the past active participle, also called the gerundial past tense, a past tense found in Northwest Russia, above all in the Pskov area, cf. Pskov dialectal *i jon pomòrši toper' uže*, versus Standard Russia *i on teper' uže umer*, 'and he died now already'. The point of this article is to demonstrate how the emergence of the *l*-participle as the general past tense opened up for a reanalysis of the past active participle as a finite past tense verb-form. The actualization process following this reanalysis is illustrated by examples from the Pskov Chronicle.

**Keywords:** Russian dialects, past tenses, *l*-perfect, gerundial perfect, finiteness, reanalysis, actualization

### 1. Introduction

The large majority of the Slavic languages have in historical times lost the synthetic past tenses of the aorist and the imperfect. The only Slavic languages to have preserved the aorist and the imperfect are found at the respective ends of a South-North axis with the Sorbian languages in the North and Bulgarian/Macedonian in the South.<sup>1</sup> In the remaining Slavic language area, these tenses have been replaced by a

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1. In general terms, this holds for the standard languages. When non-standard varieties are taken into account, this overall picture has to be modified, cf. Múcsková (2016: 116–120) for Slovak dialects. In the Bulgarian language island in the Banat, the synthetic past tenses seem to have disappeared during the last hundred years, cf. Stojkov (1967: 241–244). For a recent study on the past tense in a dialect of Rusyn, in which past tense can be expressed by the *l*-participle alone as well as with the addition of the auxiliary, cf. Boudovskaia (2017).



past active participle in *-l-*. This was, with the addition of an auxiliary formed from the verb *byti* ‘to be’, originally the basis for the formation of the analytic perfect in Slavic. The difference between the Slavic languages that lost the aorist and the imperfect is to a large degree related to the further development of the auxiliary *byti*. In some languages, the auxiliary was lost completely, as in Russian, while in others, like in Czech, the auxiliary was partially lost, or it was reanalyzed like in Polish. The transformation of the past tenses in Slavic could therefore be considered a major trend or drift that affected the various parts of the Slavic language area in a related way, comparable with the *yer*-change. From a morphological point of view this was a radical simplification. From a typological point of view, however, a rather odd situation arose in a language like Russian, in which the present/future was expressed by means of forms from a paradigm declined for person and number, while the past tense was declined for gender and number only. This transformation, however, must be considered to have created space for new formations able to express past tense. In this context, at least two different pathways can be discerned.

## 2. New perfects in Slavic

### 2.1 The possessive perfect

On the background of the radical transformation and simplification of the past tenses, it has been observed in several Slavic languages how innovations have given rise to novel past tense formations in addition to the one based on the *l*-participle.<sup>2</sup> In some Slavic languages, new past tense formations have occurred patterned on the West-European possessive perfect (Drinka 2003: 6–10; Drinka 2013) of the type *factum habeo*. Two examples from Polish and Czech, respectively, will illustrate this (Heine & Kuteva 2006: 159):

- (1) Polish: *Mam miejsce zamówione na dzisiejsze widowisko.*  
‘I have reserved a seat for today’s show’
- (2) Czech: *Máš vyčištěné zuby?*  
‘Have you brushed (your) teeth?’

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2. An early comprehensive contribution is Vasilev (1968) with extensive references.

### 3. New perfects in Russian

#### 3.1 The Russian possessive perfect

This possessive perfect is typically found in Slavic languages with a *habere*-verb. But even in Russian, which does not have a proper *habere*-verb, a perfect based on the expression of possession is found in Northwest dialects. This perfect is based on a location schema [[*u.prep at+Gen*] + PretPastPart] (Heine, Kuteva 2006: 164; Drinka 2003: 9; Trubinskij 1984: 137). Since [*u.prep at+Gen*] is the way possession is expressed in Russian, this construction with the addition of a past passive participle based on the suffixes *-n/-t* has been labeled possessive perfect, *posessivnyj perfekt*.<sup>3</sup>

- (3) Dial: *U menja v dome ubrano.* (Trubinskij 1984: 137)  
 CSR: *Ja ubral v dome.*  
 ‘I have cleaned the house’.
- (4) Dial: *U nego uechano.* (Trubinskij 1984: 142)  
 CSR: *On uechal.*  
 ‘He has left’.
- (5) Dial: *U nego poka ešče ni odnoj ne pročitano.* (Trubinskij 1984: 144)  
 CSR: *On poka ešče ni odnoj ne pročital.*  
 ‘He has so far not read even one’.

This possessive perfect (PP) has in general terms been considered the outcome of language contact. Since the PP is restricted to the Russian Northwest, Germanic in terms of Scandinavian influence has been considered. More plausible seems, however, Balto-Finnic influence since substrata as well as adstrata could possibly be taken into consideration.<sup>4</sup> It seems reasonable to consider this issue far from resolved.

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3. Maslov (1984: 237–248) was the first to denote this construction as *posessivnyj perfekt*. Tommola (2000: 436–446) discusses the new perfects in Russian in an instructive broader Slavic framework.

4. Maslov (1984: 236), however, argues that the possessive perfect has developed independently in various languages, including Russian. This polygenetic conception of the origin of the possessive perfect does not seem to have any supporters today.

### 3.2 The Russian gerundial perfect

In addition to the possessive perfect (PP), a second novel expression of events in the past has developed in Northwest Russia. This form is genetically the past active participle (PAP), based on a posited Proto-Slavic suffix *\*-vūs*, cf. *\*rodi-vūs-j-ī > rodivši*, *\*pomer-ūs-j-ī > pomērši*. Since this participle is also the source for the past or perfective gerund in CSR,<sup>5</sup> it has been called the gerundial perfect (GP), *deepričastnyj perfekt* (Trubinskij 1984: 156). The area of the GP is partly overlapping with the one of the PP, but is generally located to the South of the area of the possessive perfect and is far more widespread geographically. The GP is recorded in a large area stretching from Onega in the North all the way south to the Ukrainian border at Belgorod and encompassing in various degrees the whole territory to the West of this line. The historical Pskov and Novgorod territories seem, however, to be the core area for the GP (Trubinskij 1984: 158), extended somewhat further towards the East. From a synchronic point of view, practically the whole area of the GP is within the Western dialect zone, *zapadnaja dialektnaja zona* (Avanesov & Orlova 1964: 243).<sup>6</sup>

The basic type of the GP is built on perfective intransitive verbs which denote an event in the past that in one way or another keeps its relevance at the moment of speech. They typically express change in condition or change in location in the past which is still relevant at the time of speech.<sup>7</sup> The GP can therefore in general terms be defined as a resultative perfect based on an erstwhile past active participle. As the changes in the past denoted by an intransitive verb typically affect the grammatical subject as patient/experiencer, this GP can be defined as a subjective resultative (Nedjalkov 1988: 8). The following examples were recorded in 1992 and 1993 in the core area of the GP, in the Pskov historical lands:

- (6) Village *Obod*: Tatjana, born 1917, recorded June 1992  
 Dial: *Ja tak f svoěj derevni rodifši*<sub>GP</sub><sup>8</sup>

5. CSR is an abbreviation for Contemporary Standard Russian, equivalent to *sovremennyj russkij literaturnyj jazyk*.

6. This is the traditional view still prevailing. Gorškova & Chaburgaev (1981: 337) claim, however, that the GP, in their terms *novyj perfekt*, is found all over the Russian language area, extensively even in South Russian dialects. This issue will not be discussed any further here. It will be noted, however, that the claims referred to do not make up any contradiction to the conclusions of this contribution.

7. For a more detailed analysis of the lexical basis of the GP, cf. Trubinskij (1962). Dmitrieva (1962) presents alternative interpretations of the GP. Her proposed meanings of the GP, can, however, be interpreted as overall resultative.

8. Unless otherwise indicated, all dialect recordings referred to were collected in the Pskov area in the summers of 1992 and 1993. The recordings are kept at the University of Oslo. For

- CSR: *Ja tak v svoej derevne rodilas'*.  
 'So I was born in my village'.
- (7) Village *Grjazivec*: Marfa Fëdorovna, born 1896, recorded 30.6.92.  
 Dial: *V jich avca byla janivši<sub>GP</sub>*  
 CSR: *U nich ovca jagnilas'*.  
 'their ewe has lambed'
- (8) Village *Mda*: Evdokija Ivanovna, 1,5 years at school, recorded June 1993  
 Dial: *Atca ne pomnju, jon byl papafši<sub>GP</sub> v Istoniju f plen*  
*éta iššo jon byl papafši<sub>GP</sub> molodyj byl*  
 CSR: *Otca ne pomnju, on popal v plen v Ėstoniju, On popal on ešče byl molodoj*  
 'father I do not remember, he was taken prisoner in Estonia, he was taken while still young'
- (9) Village *Mda*: Evdokija Ivanovna, 1.5 years of schooling, recorded June 1993  
 Dial: *kak-ta rassudak byl pom'ašáfsi<sub>GP</sub>*  
 CSR: *kak-to rassudok pomešalsja*  
 'in some way the mind went crazy'
- (10) Village *Sosny*: Anna Kirillovna, born 1916, recorded June 19, 1993  
 Dial: *mama uže pom'erla , naverno bolšy tridcati let kak um'oršy<sub>GP</sub> janá*  
 CSR: *mama uže umerla, naverno bolše tridcati let kak umerla ona*  
 'mama had already died, probably more than 30 years since she died'
- (11) Village *Podborov'e*: Marija Čuchnova, born 1929, recorded June 1993  
 Dial: *i jon um' orši toper' uže*  
 CSR: *i on teper' uže umer*  
 'and he had died now already'.

In all these examples the resultative meaning of the GPs is prominent. This resultative meaning of the GP is neatly illustrated with its capability to be coordinated with a verb in the present tense:

- (12) *Prišla, pomnju, s raboty, a ěn usefši<sub>GP</sub> na stoli i sidi<sub>Pres</sub>* (Trubinskij 1984: 169)  
 '(I) came from work, (I) remember, and he (has) sat at the table and sits'.
- (13) *Prišofši<sub>GP</sub> z derevni ženščina i sprachivae<sub>Pres</sub>* (Idem.)<sup>9</sup>  
 '(has) come from the village a woman and asks'.

information about this dialectological fieldwork, cf. Bjørnflaten (1998). All transcriptions of the recordings were made by a docent at St. Petersburg State University, Ljubov' M. Karamyševa (1949–2004). The rendering of the dialect transcriptions into CSR and their translations into English was done by the author.

9. This verb form shows distinct Pskov dialect features, i.e. *š > ch* and loss of final *t* in 3rd person, i.e. *sprachivae* versus CSR *sprašivaet*.

These examples are clear parallels to the use of perfect coordinated with present tense in Old East Slavic<sup>10</sup> (Bjørnflaten 2016). These examples will be discussed in more detail below.

#### 4. The source and chronology of the GP

Most researchers consider the genetic source of the GP to be the PAP because the PAP as predicative participles are abundantly recorded in Old East Slavic texts, cf. (14)–(15).

- (14) *togo že lěta, vovavši<sub>pap</sub> sela okolo Ostrova, poidoša<sub>aor3pl</sub> ko Pskovu* (PL-1:12)<sup>11</sup>  
 ‘the same year, (they having) ravaged villages around Ostrov, (they) went on to Pskov’
- (15) *A inych živych mnogo pskoviči i knjazja velikogo vovoda i ego sila, rukami izoimav<sub>pap</sub> k<sub>o</sub> Pskovu privegli<sub>i-form</sub>* (PL-2:220)  
 ‘and many others alive the Pskovians and the vovoda of the Grand Prince and his force (having) captured with (their) hands, led to Pskov’.

In the Russian grammatical tradition, starting with Potebnja (1958: 185), the appositive or predicative participles have been called secondary predicates, *vtorostепенное сказуемое*. Potebnja considers, however, the recorded secondary predicates as remnants of an erstwhile periphrastic expression in which the PAP was used together with auxiliary forms of *byti*, cf. *onъ бѣ судивъ*, lit. ‘he had judged’ (Potebnja 1958: 138). The auxiliary in these cases was eventually lost. As a remedy for the loss of the auxiliary, the secondary predicate in the dependent clause is linked with the primary predicate in the independent clause by means of the inserted conjunctions *i*, *a* and *da*. In sentences like *on vstavъ i reče*, ‘he stood up and said’, Potebnja claims that both predicates are originally primary. The seemingly secondary status of the first predicate is due to loss of copula *бѣ* or *бјаše*, so that the sentence originally had the form \**on бѣ/бјаše vstavъ i reče*, ‘he had stood up and said’. Sentences of this type are, however, poorly attested in Old East Slavic, while attestations of the PAPs as primary predicates date to a considerably later period, the 16th and 17th centuries (Kuz'mina & Nemčenko 1982: 411; Jung 2014: 203). Potebnja, Trubinskij and others nonetheless consider the use of the PAP with copula as corresponding to a similar construction in Baltic like the following in Lithuanian *ji buvo atbėgusi*, comparable to Northwest Russian *ona byla pribegši*, ‘she had come’ (Trubinskij 1984: 173). In

10. Old East Slavic is here used in the sense of *drevnerusskij*.

11. All translations of the examples from the Pskov Chronicles are made by the author.

this interpretation, the Northwest Russian GP represents the outcome of a development from a stage going back to common Balto-Slavic. This interpretation appears hardly tenable. A common Balto-Slavic point of departure must necessarily be posited for a distant past, long before any Slavic settlement in Northern Russia. In addition, the conception itself of a common Balto-Slavic development is highly disputable, not least when it comes to the development of the verbal systems which are highly divergent in the two language families.

The 'Potebnja position' will not be discussed further in this contribution.<sup>12</sup> It will be taken as a point of departure that there is a link between present-day GP in Russian dialects and the predicative participles or secondary predicates in Old East Slavic going back to Proto-Slavic and widely attested in Old Church Slavonic. The aim of this contribution is to establish how this link<sup>13</sup> can be interpreted and established within a theoretical framework of language change. In order to achieve this aim, I shall use data from the oldest comprehensive body of narrative texts available and which are supposed to have been produced within the present day core area of the GP. These are the Pskov chronicles attested in numerous texts from the 15th century onward.<sup>14</sup> These texts are of course based in various degrees on Russian Church Slavonic, but contain nonetheless considerable features on all levels of the language which can be interpreted as reflecting properties of the Pskov vernacular.<sup>15</sup> It will here be claimed that this is the case also with regard to the behavior of the predicative participle or secondary predicate, which makes it possible to sketch and interpret the pathway leading from secondary predicates to primary predicates as testified by recordings practically all over the Pskov area.

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12. For references to recent contributions on this issue, cf. Jung (2014: 200–201).

13. This contribution will, accordingly, address the following statement made by Wiemer & Giger (2005) in their research on resultatives in northwestern Russian dialects: 'Die genaue Entstehungsgeschichte der Resultativa auf (*v*)ši ist noch ungeklärt', 'the detailed history of the origin of the resultatives in (*v*)ši is still not understood'.

14. The introduction to PL-1 presents a detailed treatment of the various manuscripts of the Pskov Chronicles. Grabmüller (1975) is the most comprehensive work on the Pskov Chronicles to have been written, at least outside Russia.

15. With reference to the value of the relevant data from the Pskov Chronicles, Dmitrieva (1962: 158) writes... 'otpričastnye formy v govorch po svoim priznakam nachodjat polnoe sootvetstvie v opredelennoj gruppe appozitivnyh nečlennyh dejstvitel'nyh pričastij prosedšego vremeni...'; '... the forms derived from participles in the dialects correspond in accordance with their properties fully to the group of appositive short form past active participles...?'

## 5. From secondary to primary predicates

If the predicative participle, the secondary predicate, is the point of departure and the finite GP the end-point, it will be assumed possible to explore the pathway, which gradually led to the end-point in stages through a set of ordered changes. This transformation of the secondary predicate into a primary one would in traditional understanding involve a change of a nonfinite verb form into a finite one. This understanding, however, presupposes that finiteness is a binary distinction in which a verb form is either finite or nonfinite. In recent scholarship (Cristofaro 2007: 94) this understanding of finiteness has largely been abandoned in favor of considering finiteness as gradual or scalar. A verb form can have reduced finiteness or high finiteness (Givón 2001: 352), which could also be referred to as weak finiteness versus strong finiteness. Adverbial clauses with subjects co-referential with the subject of the matrix sentence “tend to display less-finite syntax” (Givón 2001: 352). In the interpretation to be undertaken here, a pathway will be explored in which reanalysis, actualization and extension lead to a gradual increase in finiteness of the erstwhile secondary predicates until they reach a status equal with the primary predicates, which is actualized when they are able to form independent clauses. The pathway to be explored here could tentatively be made up of the following stages, (1) subordination by the primary predicate, (2) reanalysis of the secondary predicate, (3) actualization in terms of coordination by means of conjunctions, (4) actualization in terms of clause subordination by secondary predicates turned primary, (5) coordination of independent clauses with erstwhile secondary predicates.

### 5.1 Subordination by a finite verb

Coordination and subordination are generally considered the two ways to link clauses. In case of subordination this means that a dependent clause is linked to an independent clause. In cases when no conjunctions are involved, it is the finite verb form of the independent clause that subordinates the dependent clause in which the predicate is a nonfinite or weak finite verb form. In adverbial subordinated clauses, a past active participle can be the nonfinite predicate. This must be assumed to have been the point of departure, indicative of an original state in Slavic and extensively recorded in Old Church Slavonic as described and analyzed in a number of works (Růžička 1963; Bjørnflaten 2012). The use of PAP as a predicative participle or secondary predicate in Old East Slavic texts is consequently considered to be genetically linked to the corresponding use of PAP in Old Church Slavonic. In (16) the use of PAP in Old Church Slavonic is considered to be corresponding to the use of PAP in Old East Slavic in (14), (16), (17), (18), (19):

- (16) *i viděv̄<sub>pap</sub> is věřo ich̄b reče<sub>aor3SG</sub> oslablenuemu* (Mt, 9,3)  
 ‘and Jesus seeing their faith said unto the sick of the palsy’
- (14) *togo že lěta, voevav̄ši<sub>pap</sub> sela okolo Ostrova, poidoša<sub>aor3PL</sub> ko Pskovu* (PL-1:12)  
 ‘the same year, (they having) ravaged villages around Ostrov, (they) went on to Pskov’
- (17) *A němcy, toe zimy priěchav̄še<sub>pap</sub> so vseju siloju postaviša<sub>aor3PL</sub> novyi gorodokū na rec̄e na Pivži* (PL-1:18)  
 ‘And the Germans (having) come that winter with all their forces established a new town on the river Pivža.’
- (18) *oni že ěchav̄še<sub>pap</sub> jazyka jaša<sub>aor3PL</sub> za Cholocholnom̄b* (PL-1:19)  
 ‘and they (having) come captured a prisoner beyond the river Cholochol.’
- (19) *I prišed̄<sub>pap</sub> na več̄e, učal̄<sub>l-part</sub> velikomu Novogorodu povestvovati* (PL-2:209)  
 ‘and (he) (having) come to the več̄e, (he) started to tell Great Novgorod.’

In all these sentences the PAPs, *viděv̄b*, *voevav̄ši*, *priěchav̄še*, *ěchav̄še* and *prišed̄* as predicative participles or secondary predicates are subordinated to the finite verbs in the independent clauses. As there are no subordinating conjunctions, the subordination is implemented by means of the opposition between finite and nonfinite verb forms: (16): *viděv̄b...reče*, (14): *voevav̄ši...poidoša*, (17): *priěchav̄še...postaviša*, (18): *ěchav̄še...jaša*, (19): *prišed̄...učal̄*. In these sentences the subject of the subordinated, dependent clause is co-referential with the subject of the independent clauses. In the dependent clause, an event is denoted as anterior to the one of the independent clause. The position of the dependent clause seems as a rule to be anterior to the independent clause.

## 5.2 Reanalysis of the secondary predicate

In order to account for the development to be sketched here, it is of utmost importance to keep in mind the overall development of the past tenses in Russian.<sup>16</sup> Essential here is the morphological simplification in the expressions of the past tense referred to above. This change rendered the perfect based on the *l*-participle and the copula *byť* the single means for the expression of past tense. The loss of several past tenses triggered a major semantic extension of the perfect from an original resultative meaning to include also aorist meaning, i.e. a narrative meaning

16. As a general background for the formation of new past tenses in Russian this has been recognized by several scholars (Jung 2014: 205; Gorškova & Chaburgaev 1981: 336). To my knowledge, however, no one has undertaken detailed studies of how it possibly could be described and interpreted.



referring to events in the past with no link to the present.<sup>17</sup> With the eventual loss of the copula the general expression of past tenses was based exclusively on the *l*-participle which as an erstwhile nominal expressed gender and number, but not person. After the loss of the copula, the Russian language acquired as referred to above a feature unusual from a typological point of view, a past tense declined only for nominal categories, gender and number.

The loss of the copula in the erstwhile perfect should therefore be considered the major *post quem* for the emergence of the GP. This *post quem* is, however, difficult to date in detail as the loss of the copula was a process that proceeded in stages over a prolonged period of time, first affecting the copula in the 3rd person, then the 1st person and most probably finally the 2nd person Sg.<sup>18</sup> Despite the fact that omitted copula in 3rd person is recorded sporadically in texts from the 11th century (Kiparsky 1967:227), the copula is still part of the perfect in the 14th and 15th centuries, as seen below (32, 33). According to this chronology the perfect was more or less still intact when the production of chronicles started in Pskov. The subsequent gradual loss of the copula occurred during the same period as the composition of chronicles developed.<sup>19</sup> The variation in forms of the secondary predicate as well as its inconsistent use must therefore at least in part be considered on this background. It is, however, a basic fact that the copula in the perfect eventually was lost, and after this loss, the *l*-participle as the single expression of past tense came to share its morphosyntactic properties with the secondary predicates. The primary predicate as well as the secondary predicate could only be declined for gender and number. These were properties shared only by the primary and secondary predicates. An identity in terms of morphosyntactic properties was established. This acquired identity in its turn opened up for a novel interpretation, reanalysis, of the secondary predicate. And languages typically “may undergo reanalysis when some surface construction permits two or more different interpretations, and the grammar changes to include interpretations that were not formerly found” (Harris & Campell 1995:30). Reanalysis is therefore “a mechanism which changes the underlying structure of a syntactic pattern and which does not involve any immediate or intrinsic modification of its surface manifestation” (Harris & Campell 1995:61). This is the type of reanalysis that will be claimed to have taken place here with regard to the secondary predicate. The circumstance that the primary predicates

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17. For an interpretation of early recordings of *l*-forms without auxiliary, cf. the recent contribution of Skačedubova (2017).

18. For this somewhat curious fact cf. Kiparsky (1967:228) with references.

19. Kuz'mina and Nemčenko (1982:411) state cautiously that the secondary predicates in *-vši* developed in the 16th century and particularly in the 17th century.

and the secondary predicates at a certain point came to share properties triggered ambiguity<sup>20</sup> in terms of multiple analysis and therefore opened for a novel analysis of the secondary predicates as finite verb form. This implies that the reanalysis of the secondary predicate in this case involves the dimension of ranking of relevant features (Andersen 2001: 234).<sup>21</sup> In this case, the reanalysis occurred after a change in the surface structure, i.e. after the loss of the copula which together with the *l*-participle made up the perfect as the single possible expression of past events. In (20) the reanalysis is assumed to have occurred without any change in the surface structure. The reanalysis entailed, however, increased finiteness for the secondary predicate and more or less equal status with the primary predicates. After the reanalysis, the sentence should be translated in the following way:

- (20) *I prišed<sub>MSg</sub> na večę, učal<sub>MSg</sub> velikomu Novgorodu povestvovati* (PL-2: 209)  
 ‘and (he) came to the *veče*, started to tell Great Novgorod’.

In this sentence, the two predicates share all morphological properties, masculine gender and number singular. The fact that the secondary predicate *prišed* is sharing all its morphological properties with the primary predicate *učal* permitted for a novel interpretation of *prišed* which formerly was not at hand. While the reinterpretation of the secondary predicate constitutes the innovation, the surface expression of it in terms of actualization is seen in the insertion of coordinating conjunctions.

### 5.3 Actualization of the reanalysis of the secondary predicate

Actualization is the observable manifestation of grammar innovation in speech. Andersen (2001: 225) states that “every innovation in usage *actualizes* – that is, makes manifest in observable reality – some corresponding innovated element of grammar”. In the present case, the reanalysis in (20) of *prišed* as a primary predicate is not observable per se, since no change in the surface structure of (20) can be observed. The surface manifestation of the reanalysis of the secondary predicate in terms of its changed ranking, is not observed until the coordinating conjunctions *i* and *a* are inserted between the erstwhile dependent and independent clauses. The insertion of the coordinating conjunctions *i* and *a* between the clauses with a

20. Cf. Andersen’s succinct formulation: “The idea that grammar change can arise in speakers’ analysis of surface realizations presupposes that surface realizations can be structurally ambiguous, so that speakers can construe them differently, assigning them different content or different underlying relations or representation” (Andersen 2001: 233).

21. Cf. Harris & Campell (1995: 61–63) for a slightly different formulation of the dimensions reanalysis may involve.

nonfinite verb and the clauses with a finite verb implies an increased independence of the erstwhile dependent clause. The insertion of coordinating conjunctions is therefore the actualization of the reanalysis of the predicative participle as a finite verb form. The transition from (21) to (22) and (23) may illustrate the actualization.

- (21) *A v to vremja Pskovъ otrjadivъ, poslal k velikomu knjazju Ivanu Vasilъbeviču vsea Rusi posla svoego posadnika* (PL-2: 193)  
 ‘and at that time Pskov (having) appointed, sent to the Grand Prince Ivan Vasiljevich of all Rus as ambassador his *posadnik*’
- (22) *A Vasilba Onanъina tu poimav, a na veče isbъekli topori v častъe* (PL-2: 209)  
 ‘and (they) took here Vasilij Onanjin, and at the veche cut (him) with axes into pieces’
- (23) *Toja že vesne okolo buja svjatogo Nikolě, u Voročkomъ konci kamenemъ odělavъ i vrata kamenyja izrjadivъ, i sadom<sup>22</sup> jabljonjami nasadili.* (PL-2: 193)  
 ‘this spring at the church green of Holy Nikola at the Opočka end (they) lay stones around and put up stone gates and planted with grass and apple-trees’

#### 5.4 Additional reanalysis and actualization

In (23) the two predicative participles are coordinated by the conjunction *i*, *odělavъ i ...izrjadivъ* in the same way as these two predicative participles are coordinated with the finite *nasadili*, i.e., *odělavъ i izrjadivъ i nasadili*. In this context it seems difficult to see how coordination<sub>1</sub> could be perceived as different from coordination<sub>2</sub>:  $[[odělavъ i izrjadivъ]_2 i nasadili]_1$ . In this case a reanalysis in the dimension of constituents could have taken place:  $[[odělavъ i izrjadivъ]_2 i nasadili]_1$  was re-analyzed as  $[odělavъ]_2 i [[izrjadivъ i nasadili]]_1$ , eventually giving rise to a string of coordinated primary predicates:  $[odělavъ i izrjadivъ i nasadili]$ . This reanalysis could be considered to be actualized in terms of increased finiteness in the erstwhile secondary predicates.

#### 5.5 Clause subordination as actualization and extension

The question is now how to possibly test the claim of actualization in terms of increased finiteness of the predicative participles. Above it was claimed that the insertion of a coordinating conjunction is indicative of reanalysis of the predicative participles as finite verbs and makes up its actualization. Extension is, according

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22. This translation presupposes that an *i* has been lost between *sadom* and *jabljonjami*. Otherwise the instrumental *sadom* appears hard to interpret.

to Andersen (2001: 230), “probably the best term for a type of change for which no pragmatic motivation can be defined”. This means that the use of a new construction is extended to a new morphosyntactic environment. An extension of the use of the erstwhile secondary predicates can therefore be claimed to be at hand when they are used in new environments. A new environment for the erstwhile secondary predicates is established when they as predicates in independent clauses are able to subordinate clauses, cf. (24), (25):

- (24) *i uslyšavše<sub>pap</sub> pskoviči, čto našego gostja posadili<sub>l-form</sub> v pogrob* (PL-2: 220)  
 ‘and the Pskovians heard that they had put our merchant in prison’
- (25) *I videvše<sub>pap</sub> pskoviči, čto pomošči net ni ot koeja strany, i položiša<sub>aor3PL</sub> upovanie na boga* (PL-1: 17)  
 ‘the Pskovians saw, that there is no help from any side and put their hope in God.’

In (24) and (25) there can hardly be any doubt that the predicative participles *uslyšavše* and *videvše* are subordinating the object clause by means of the conjunction *čto*. Sentences of this kind are not infrequent.

A further extension of the use of reanalyzed secondary predicates as finite verb forms is probably also control of infinitives. In (26) *otrjadivš* behaves as a finite verb form in its control of the infinitive *biti*.

- (26) *i pskoviči, otrjadivš<sub>pap</sub> posadnika Ivana da Jakova biti<sub>inf</sub> čelom voevode, čtoby vorotilsja vzad kš Pskovu* (PL-2: 220)  
 ‘and the Pskovians appointed *posadnik* Ivan and Jakov to petition the voevoda to return back to Pskov’.

## 5.6 Interchangeability of predicative participles and the *l*-participle

Further instances of actualization of the PAP as a finite verb will be claimed to be at hand when the aorist or the *l*-participle are replaced by PAPs in manuscripts with corresponding texts. In (27) and (28) the predicative participles *nočovanš* and *rozgněnavšja* in *Stroevskij spisok* are replaced by the *l*-participle in *Pogodinskij spisok*. The interchangeability will here be interpreted as lending evidence for the reanalysis of the erstwhile secondary participles with reduced finiteness, as primary predicates. Examples of this kind are not infrequent in the Pskov chronicles.

- (27) *A priechavš iz Nemeckoi zemli, da 3 noči nočovanš da pročš poechalš s svoim voiskomš na Moskvu i na pskoviči rozgněnavšja*  
 (PL-2: 220 (*Stroevskij spisok*))  
 ‘And (he) came from the German land, stayed 3 nights and set out again to Moscow and was angered with the Pskovians’

- (28) *A priěchav<sub>pap</sub> iz Nemeckoi zemli, da 3 nošči nočeval<sub>pap</sub>, da pročb poechal<sub>l-part</sub> s svojim voiskomъ na Moskvu i na pskoviči rozgněvalsja*  
(PL-1:77 (*Pogodinskij spisok*))

In *Pogodinskij spisok*, however, the form *otrjadiв* in (26) is replaced by an aorist *otrjadiša*.

- (29) *I pskoviči, otrjadiša posadnika Ivana da Jakova biti čelom vovode, čtoby vorotilsja vzad kъ Pskovu*  
(PL-1:77)

## 5.7 Completed reanalysis and actualization of the secondary predicates

A final stage can be claimed to have been reached when a whole sentence is made up by PAPs reanalyzed as finite verbs and actualized in terms of being able to form independent clauses:

- (30) *Oni perebrodivšesja<sub>pap</sub> i stavše<sub>pap</sub> stanmi na Kamně.* (PL-1:19)  
'They crossed over and put up camp at Kamen'
- (31) *Posadnikъ že Silvestrъ Levontievičъ, i posadnikъ Feodor Šilbakinič sъ družinoju svoeju ěchavše pod gorodokъ pod Kotelenъ.* (PL-1:36)  
'and *posadnik* Silvestr Levontievič and *posadnik* Feodor Šilbakinič with their armed forces went to the town of Kotelen'.

Examples of this kind are not abundant, but frequent enough to provide evidence for the claim that secondary predicates have turned into primary ones. It is further an issue whether there are or have been dialects which consequently replaced the *l*-participle with GP. Based on the data provided by the chronicles as well as by present-day dialects, it seems more appropriate to take into consideration lexical diffusion as the formation of the GP seems foremost to have spread to verbs capable of expressing resultativeness, i.e. change in position or change in condition.<sup>23</sup> This might be the reason for the frequent use of GP of verbs like *viděti*, *slyšati* and *ěchati* in the chronicles. In present day's dialects, the frequent use of *pomòrši*, *rodifši*, *vyšetši* can be interpreted in the same way.

## 6. Coordination of the GP with present tense

In Old East Slavic, the resultative meaning of the perfect could be tested with regard to its capability to be coordinated with a verb in the present tense, cf.

23. Both Trubinskij (1962) and Dimitrieva (1962) address this issue with more details.

- (32) *Otroci Svěnlbži izodělišja sutb<sub>perf</sub> oružbemō i porty a my (...)pres nazi*  
(LL 1997: 54)

‘Servants Sveinalds adorned are (with) weapons and raiment but we (are) naked.’

We have here a situation when some are dressed as the result of an event in the past, and some are naked at the same time. The perfect with a coordinated present tense is also widespread in Old Russian,<sup>24</sup> as in this later example from *Zadonščina*:

- (33) *Done, Done, bystraja reka priryła esi<sub>perf</sub> gory kammenyja, tečeši<sub>pres</sub> v zemlju poveckuju*  
(Adrianova-Peretc 1948: 240)

‘Don, Don, swift river, you have cut through (*priryła esi*) the stone mountains, you flow (*tečeši*) into the Polovtsian land’.

A similar coordination of the perfect with the present tense is found in this charter from Novgorod to Riga (1418–1420):

- (34) *Bilō<sub>perf</sub> celomō novgorodečb... a žaluetsja<sub>pres</sub> na vašu bratbju*  
(Obnorskij & Barchudarov 1938: 117)

‘A Novgorodian has petitioned and complains against our brotherhood’.

It is noteworthy that a similar coordination is at hand in present day’s dialects with regard to the GP with resultative meaning and the present tense.

- (35) *Prišla, pomnju, s raboty, a ěn usefši na stoli i sidi* (Trubinskij 1984: 169)

‘(I) came from work, (I) remember, and he (had) sat down at the table and sits’

- (36) *Prišofši z derevni ženščina i sprachivae* (Ibid.)

‘(has) come from the village a woman and asks’

- (37) *I zdes’ pristroišši i živēt* (Ibid.)

‘and here he has settled and lives’

- (38) *On uže fstašši i čaj pět* (Ibid.)

‘He already has stood up (was now standing) and drinks tea’.

These sentences have to be considered decisive evidence for the transformation of the secondary predicates into primary predicates. The GP behaves clearly as a resultative perfect which expresses an event in the past with relevance at the moment of speech. In that capacity, it can be coordinated with another event taking place at the moment of speech expressed by a present tense verb.

24. Old Russian is here used for the period appr. 1300–1700.

## 7. The morphology of the gerundial perfect

So far the morphology of the GP has not been discussed. It has been pointed out that the Proto-Slavic past active participle was built on the suffix *vŭs*, a well-established Indo-European participial suffix. It is also established that the short forms of the participles at an early stage had ceased to be declined for case, as was stated by Růžička (1963: 13) in his comprehensive monograph, “Die Prädikativität ist...die überlegene Hauptfunktion der Kurzpartizipien, zu der vor allem die Nominativformen drängen”, ‘predicativity is by far the main function of the short participles, which is above all the case with the forms in the nominative’. In the Pskov chronicles the short form of the participles are practically only present in the nominative form. In the nominative of the PAP three forms are recorded: (1) *viděvъ*, (2) *viděvši*, (3) *viděvše*. The first form (1) is clearly MSg. The second form is formally interpreted as FSg, while (3) seems to represent MPL. In the texts, (2) and (3) are used to a large degree alternatingly for all referents, including MSg. Since F reference is extremely seldom, (2) can hardly be considered to implement F reference. A reasonable interpretation could be that a gradual process of elimination of variant forms can be observed. The MSg is eliminated first, then the MPL in *i* is generalized after having substituted the ending *e* with the overall more widespread MPL ending *i*. In this way the general GP-ending in *-vši* came into being.<sup>25</sup> The reason for this form to be generalized could be that this was the only form of the erstwhile secondary predicate which had an ending which corresponded with one of the *l*-participle, namely 3rd PL in *i*, cf. *uslyšavši – nasadili*. A similar correspondence was not at hand with regard to the remaining two forms of the PAP, *uslyšav* and *uslyšavše*.

## 8. Conclusion

In this treatment of the reanalysis of the secondary predicate the focus has been on its changed syntactic function in a clause. Through reanalysis the status of the secondary predicate was transformed to that of a primary predicate. Originally a nonfinite verb form, it was turned into a finite one due to the fact that it shared all its morphological categories with the *l*-participle after the loss of the copula. The secondary predicate was then interpreted as equal in status in the clause with the *l*-participle. In other words, an identity was perceived to obtain between the erstwhile secondary and primary predicates. A semantic identity was established between the morphologically diverse forms of the two past active participles in *-vŭs* and in *-l*, e.g. *chodivši* vs. *chodil*. This identity is neatly expressed by blended forms

25. For a more detailed treatment of this issue, see Bjørnflaten (2012: 70–78).

of these two participles. Forms like *šelši*, *vzjalši*, *pokurilši* are recorded in the core of the Pskov area between the upper reaches of the river *Velikaja* and the river *Lovat'* (Obrazovanie: 414). The Pskovian forms like *ušolši*, in which a merger of two perfect forms has taken place, can therefore serve as a suitable endpoint in the interpretation of the pathway triggered by reanalysis in the past tense of Russian.

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# From a single lexical unit to multiple grammatical paradigms

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This paper studies the reanalysis, grammaticalisation, and paradigmaticization of constructions becoming members of grammatical paradigms. The changes are illustrated by means of a single lexical unit, i.e. the French verb of perception, *voir* 'to see'. The verb is found in very different contexts, which have been reanalysed and resulted in grammaticalized structures. Therefore, *voir* provides an interesting illustration of the pathway of a lexical unit into grammar. One reanalysis has resulted in the creation of *voir* followed by the deictic relative as part of a marker of progression, i.e. as a member of the category of tense, aspect, and mood. Another pathway involves the imperative form of the verb, which has grammaticalized as presentatives (*voici* and *voilà*). These forms have undergone further grammaticalization or, following the terms of Henning Andersen, *regrammation*, into markers of focalization.

**Keywords:** constructions, deixis, focalization, French verb of perception *voir* 'to see', grammaticalisation, paradigmaticity, regrammation

## 1. Introduction

This paper is a tribute to Henning Andersen's research on language change and grammatical structure. Inspired by his work on reanalysis, grammatical change, and actualization (Andersen 2001a, 2001b, 2001c, 2006, 2008), we illustrate the first two of these processes by means of a single lexical unit, i.e. the French verb of perception, *voir* 'to see'. This verb is found in very different contexts, which have been reanalyzed and resulted in grammaticalized structures. Therefore, this verb provides an interesting illustration of the pathway of a lexical unit into grammar. One reanalysis has resulted in the creation of *voir* followed by the deictic relative as part of a marker of progression, i.e. as a member of the category of tense, aspect, and mood. Another pathway involves the imperative form of the verb, which has

grammaticalized as presentatives (*voici* and *voilà*). These forms have undergone further grammaticalization or following the terms of Henning Andersen, *regrammation*, into markers of focalization.<sup>1</sup> Still other pathways, which we cannot discuss here for lack of space, are illustrated by other forms of the verb *voir* turning into members of the paradigm of discourse markers: *tu vois? vous voyez?* (Andersen 2007; Beeching 2007; Bolly 2010; Dostie & Pusch 2007; Fox et al. 2010; Schneider & Glickman 2015), the past participle grammaticalized as a preposition: *vu* + NP (Grevisse & Goosse 1988: 518–519) or as a subordinate conjunction: *vu que* (Riegel et al. 2009 [1994]: 478).

How can we best account for such a complex of multiple grammaticalization processes? In the line of Henning Andersen's thinking we propose to conceive of grammar as composed of sets of paradigms (Nørgård-Sørensen et al. 2011). We here use the term *paradigm* not in the narrow sense of inflectional paradigm (Andersen 2008: 19), but in the more general sense of a selectional set, composed of marked or unmarked members. We believe that the notion of a paradigm is useful for the understanding of grammatical structure, as appears from previous studies on verbs of perception in French and Italian (Kragh 2009; Kragh & Schøsler 2014, 2015, 2016; Kragh & Strudsholm 2013).

## 2. Theoretical frame

When aiming at analyzing polysemous and multifunctional linguistic entities like the French verb *voir* 'to see', one could be tempted to take the most obvious approach, which would be to try to identify a main function and derive the various meanings and uses from this main function in a diachronic perspective. Such an approach, which is widely used in studies of lexical semantics and of grammaticalization, can, however, lead to unclear presentations in which the results of the different changes are isolated from each other as end points of a string (as appears e.g. in Ponchon 1994; Willems & Defrancq 2000). In contrast, our approach is based on a synchronic paradigmatic analysis of functions that seem to be very ambiguous and diverse. By distinguishing the different contexts (labelled *domains*) in which the forms appear, and stating which semantic fields they cover (labelled *frames*), we

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1. This is a metaphoric way of presenting the pathways of regrammation. We do not have any evidence to postulate that one structure precedes the other, but we find it logical that it should be like this. However, it is important not to interpret our statement as an argument in favor of a transformation process, which we reject. Concerning English cleft constructions, Traugott and Trousdale (2013: 136–147) discuss the origin of the individual types and insist on the impossibility of determining which of the cleft constructions is the source-construction.

can generate synchronic paradigms of which the grammatical entities are members. We are convinced that synchronic paradigms provide a precise and relatively simple presentation of complicated relations.

In this paper, we shall look at grammation and regrammation of constructions in which a form of the verb of perception *voir* is involved. In Kragh and Schøsler (2014), we studied changes of verbal complementation with verbs of perception illustrated by the verb *voir*, ‘to see’. We tested the hypothesis that the construction *Je vois X qui ...* changed from an individual, lexically determined structure into a grammatical construction, which acquired a progressive aspectual function. Here we use the term *construction* in the sense that it is a complex sign with an internal syntax and a semantic coding. Our view is different from that of Construction Grammar (e.g. Goldberg 1995) and Radical Construction Grammar (Croft 2001), because we consider constructions to have a systematic relationship between content and expression, and claim that their grammatical status is defined by their position in a paradigm (Kragh & Schøsler 2015).

## 2.1 Grammatication and regrammation

According to Nørgård-Sørensen et al. (2011: xi), grammaticalization implies a paradigmatic organization of the entities that undergo change, either a change by which an element enters a grammatical paradigm or a change within or among grammatical paradigms. In order to distinguish between these two types, we follow Henning Andersen, who has introduced the more precise labels *grammatication* and *regrammation*, respectively. A grammation is “a change by which an expression through reanalysis is ascribed grammatical content.” A regrammation is “a change by which a grammatical expression through reanalysis is ascribed different grammatical content (change within and among grammatical paradigms)” (Andersen 2006: 232–233). Both types of processes result from reanalysis, i.e. a new analysis of received usage due to opacity<sup>2</sup> or structural ambiguity not necessarily with immediate surface manifestation of change. The speaker interprets the content of a given string first as A, then as B (grammatication), and sometimes further reanalysis causes a new interpretation of B to C (regrammation).

Let us illustrate these processes by means of the reanalyses of relative clauses, which we will return to in Section 3. A typical subordinate relative clause is found in Example (1):

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2. See e.g. Koch (1996). Traugott and Trousdale (2013: 199–201) contest the idea that ambiguity is a prerequisite for reanalysis or, according to their terminology, *neoanalysis*.

- (1) *Je vois la jeune fille qui est habillée en rouge* ‘I see the young girl dressed in red’

This is clearly a subordinate relative clause, presupposing the existence of the antecedent, and which provides secondary information on *la jeune fille*. Subordinate relative clauses are found reanalyzed as nexus constructions, implying that there is a relation of solidarity between the antecedent and the relative clause. Accordingly, in a nexus construction, the relative clause is obligatory, in contrast to the subordinate relative clause. As a result of the process of reanalysis, the nexus construction is constrained in use. This type of relative is also labelled *deictic relative clause* (Benzakour 1984; Cadiot 1976, 1978; Furukawa 2005; Kragh & Strudsholm 2013). The formal constraints concerning this relative are rooted in the situation of communication and related to the deictic context, implying that tense, relation between the protagonists, restrictions concerning the object and its activity must be concrete and perceptible, etc. The content of the deictic relative is referred to with the term *holistic vision* (Kragh & Schøsler 2014, 2015). Importantly, the effect labelled *holistic vision* is not tied to any specific part of the construction and is not a direct outcome of any of its components, nor can the progressive aspect characteristic of this relative construction be directly deduced from any of the parts of the construction.

In terms of change, the first reanalysis changes the status of the relative from subordinate to be part of a nexus construction implying a mutual dependency between the parts of construction: the antecedent and the relative. Thus, we have a new constituent type, i.e. the deictic relative. Subsequently, the deictic relative is reanalyzed to become member of the progressive paradigm, i.e. of the tense-aspect-mood-paradigm ( $A \rightarrow B$ ), which is a case of grammation. This process is described in Kragh and Schøsler (2014: 183–190).<sup>3</sup> In Kragh and Schøsler (2015) we provide evidence for our claim that *voir*, *voici* and *voilà* have lost their original lexical value during the reanalysis. Along with the loss of semantic value, the progressive feature is grammaticalized.

## 2.2 Paradigms

In the linguistic tradition, a paradigm is identified as a set of grammatical elements alternating in one and the same syntagmatic context (Lyons 1968: 73). We refer to Kragh and Schøsler (2015) for a detailed presentation of our concept of a paradigm, and here restrict ourselves to recalling the five constituting features of a paradigm (cf. Nørgård-Sørensen et al. 2011: 5–6):

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3. Note that this description of the process of reanalysis is slightly different from the one proposed in Kragh and Schøsler (2014).

1. A grammatical paradigm is a closed set of items.
2. Each paradigm has a *domain*, which constitutes the syntagmatic context of the paradigm.
3. Each paradigm has a semantic *frame*, i.e. a common semantic denominator within which the content of the individual members is defined in opposition to one another.
4. The choice between the members is *obligatory*, in the sense that in the given syntagmatic context defining the domain of the paradigm, speakers cannot avoid picking one of the members.
5. A paradigm is always asymmetric in the sense that one member is functionally/semantically unmarked, while the others are more or less marked.

*The domain* refers to the syntagmatic context of the paradigm on the expression level, while *the frame* is the conceptual space organized by the paradigm. The domain covers the paradigm's limits on the expression side, the frame its limits on the content side. Inside these limits, the signs organized by the paradigm constitute a unity of expression and content (in line with the terminology of the Danish Functional tradition, see Engberg-Pedersen et al. 1996). In Nørgård-Sørensen et al. (2011: 25, 105ff) the notion of paradigm was extended from inflection to comprise constructions and word order. A paradigm which is purely inflectional or purely constructional can be labelled *simple*. If different types of members (morphological, constructional, etc.) combine, we use the label *complex paradigm*, as is the case in the progressive paradigm (see Kragh & Schøsler 2015). In the case of constructions including the French verb *voir*, we find a number of different paradigms, including connected paradigms, i.e. connection of constructional paradigms (see Section 3).

In the following, we will study in detail the structures of presentation and focalization,<sup>4</sup> which we intend to analyze as connected constructional paradigms (Section 3).

### 3. Constructions of presentation and focus

Scholars of French tend to disagree on the terminology, the definition, and even on the inventory of markers of presentation and of focus. That is one of the reasons why this is a challenging issue. Presentation and focus are usually treated separately (see e.g. Grevisse & Goosse 1988: 744ff, 1585–1587, 1625; Riegel et al. 2009 [1994]: 454–456; Wilmet 1997: 456ff, 499), in spite of the fact that most of these

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4. In our 2014 paper, we introduced briefly the notions of presentation and focalization. The present paper develops further the distinction between these notions.

structures function not only as presentatives<sup>5</sup> but also as markers of focalization. Our aim is to propose a coherent presentation by means of our paradigmatic approach and to define them as *constructions that provide the receiver (reader or listener) of an utterance with important and new information on new or already known entities*. According to this definition, these structures presuppose that the setting is a situation of communication. The prerequisite for analyzing them as constructions in a Construction Grammar (CG) sense, is that they are the result of a reanalysis of a free, lexical structure, turned into a complex, i.e. analytical grammaticalized entity. Our conception of construction is, however, more restrictive, as outlined above. We will claim that the presentative construction is a case of grammation, that the focalization structure is a case of regrammation, and that they are paradigmatically organized (cf. 2.2). Each construction will be specified with respect to the following criteria:

- Information structure:  $\pm$  grammatical marking of focalization
- $\pm$  explicit deixis
- $\pm$  introduction of new entity, i.e. the thematic structure of the utterance
- $\pm$  presentation of entity
- $\pm$  identification of entity
- $\pm$  presence of a nexus construction, defined as a relation of interdependency between two entities, i.e. between the antecedent and the deictic relative clause
- $\pm$  presence of a relative clause
- additional criteria concern restrictions on determination, constraints on tense, on register, etc.

In the following, we will first reproduce and discuss a number of the definitions previously proposed, and introduce the inventory of structures proposed by different scholars. Afterwards, we will present and characterize the structures to be included in our paradigm. We will show that all presentative constructions (cases of grammation) develop into focalization constructions (cases of regrammation), whereas two focalization constructions have no corresponding presentative construction (cf. Sections 3.2.5 and 3.2.6).

### 3.1 Definitions

In our presentation, we will refer to the grammar of reference of modern French (Riegel et al. 2009 [1994]) as representative for the accepted analyses. According to

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5. We will use the label *presentative* which is the established term of the construction. We also refer to presentatives with the term *neutral focus construction*, see Section 3.3.

these authors (Riegel et al. (2009 [1994]: 453ff), presentatives introduce to a listener explicitly or implicitly referred to, an entity (=X) functioning as their subject complement or object. Presentatives are often used in oral language for pointing out a referent to the listener.<sup>6</sup> Presentatives contain a verb, either a free form as in *c'est X, il est X, il y a X*, or fixed, as is the case for *voici / voilà X*, which are originally imperative forms of the verb *voir*, with attached deictic elements *-ci* or *-là*, see Section 3.2.4.<sup>7</sup> According to some scholars, e.g. Jaubert (1990: 109), different presentatives preserve their specific semantic features, although they have comparable functions: "l'image du réel sollicité s'impose différemment selon le présentatif qui l'introduit",<sup>8</sup> whereas other scholars, see e.g. Lambrecht (2000, 2001), consider presentatives to have lost their specificities during their grammaticalization process. The result of the grammaticalization process is that presentatives have developed into constructions, in the sense used in CG, which implies that the meaning of the construction does not correspond to the sum of its parts, and that there is a bleaching of full lexical verbs.<sup>9</sup> However, parts of the meaning of what we believe to be the source-construction are retained in the new construction. This corresponds to the term *heterosemy*, coined by Traugott and Trousdale (2013: 202): "Since new meanings arise in specific contexts, they do not immediately replace old meanings; rather there can be long periods of overlap or heterosemy where old and new meanings coexist".

In the following we intend to defend the point of view that presentatives and focalization markers form constructions in our sense of this term. Consequently, they are part of grammar, i.e. of a paradigm (see Nørgård-Sørensen et al. 2011), meaning that these paradigms contain members which are opposed to each other and which have specific features of form and content. The speaker/writer must choose one of the members of the paradigm, when either presentation or focalization is wanted. We will show that these two paradigms are connected.

Focalization constructions are often considered as a sort of transformation (cf. footnote 1 contesting the idea of transformation) of a presentation construction.

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6. The criterion concerning the presence of an explicit or implicit receiver has not been invoked by other scholars working on this topic; we do, however, find that it is a basic feature of presentatives.

7. See Kragh and Strudsholm (2013) and Kragh and Schøsler (2014). Although fossilized in the imperative singular form, *voici/voilà* function in many ways as any transitive verb, i.e. accompanied by a direct object, but can, however, hardly be negated or interrogated (see Section 3.2.4).

8. '[T]he vision of the reality to be called attention to differs according to the choice of the presentative' (AT).

9. We agree with Traugott and Trousdale (2013: 94–113) that grammaticalization processes are characterized by both (semantic) *reduction* (i.e. bleaching) and (syntactic) *expansion* (i.e. host expansion and increased frequency).



Formally, they are cleft constructions which “met[tent] en relief un membre de la phrase”<sup>10</sup> by means of extraction, see Wilmet (1997: 456–457). The extracted element is called the focus. The function of focalization constructions is to emphasize something (rather than something else), and it expresses a statement that can be denied or questioned by the recipient (Hansen & Heltoft 2011: 1726).

In agreement with the Danish functionalist tradition, we distinguish between different types of focalization. One is labeled *neutral focalization*. It is neutral because it is not formally marked as focalization, but still it is an instruction to the receiver of an important part of the message. In French, neutral focalization is normally positioned to the right, i.e. at the end of the sentence (Nølke & Korzen 1999), like *dans la rue* in Example (2).

(2) *Jacques est dans la rue*

Another type, which will be treated here, is syntactically marked focalization, e.g. by means of cleft constructions, see exemple (3) with focalization of *Jacques*.

(3) *C'est Jacques qui est dans la rue*

Riegel et al. (2009 [1994]: 430, 456, 606) do not use the term focalization, but apply a sort of transformation analysis, according to which the extraction results in an emphatic use of the presentative, which is accompanied by a kind of relative clause introduced by *qui* or *que*, but which is neither restrictive nor parenthetical (Riegel et al. 2009 [1994]: 430–431, 453–457, 606).

We have seen that Lambrecht (2000, 2001) considers focalization structures as constructions in the sense of CG. If we understand his analyses correctly, he proposes that focalization constructions, which he labels cleft constructions or CC, are results of a reanalysis of a simple presentation construction, which can be schematized in the following way:<sup>11</sup>

**Table 1.** Reanalysis following Lambrecht (2000, 2001)

Construction 1 (presentation): <i>C'est X</i>
Construction 2 (focalization / CC): <i>C'est X qui...</i>

10. 'Formally, they are cleft constructions which emphasize an element of the sentence' (AT).

11. See Lambrecht (2001: 467): “A CLEFT CONSTRUCTION (CC) is a complex sentence structure consisting of a matrix clause headed by a copula and a relative or relative-like clause whose relativized argument is coindexed with the predicative argument of the copula”. In his French 2000 study, Lambrecht analyses a large number of French Construction 2-types, and he labels them presentation constructions ('constructions presentatives'). This choice of terminology risks creating confusion for readers of Lambrecht's papers.

According to Lambrecht (2001:468), the copula in a cleft construction can be a verb like *être* ‘to be’, *avoir* ‘to have’, or a fossilized imperative such as *voilà* (‘there is’), all “capable of losing its lexical meaning within the construction”. We agree with Lambrecht that the bleaching of lexical meaning of the matrix verb proves that the verb is no longer part of a free structure, but of a grammaticalized construction, which is the result of a reanalysis. Lambrecht (2001:468) maintains that when a logically simple proposition is expressed in a CC (*Pierre arrive* → *c’est Pierre qui arrive*, ‘Peter arrives’ → ‘it is Peter who arrives’) which is a two-clause sequence, one of the two verbal forms is no longer a fully lexical verb, in our terms the matrix verb is after the reanalysis part of a grammaticalized structure in the presentative construction. Following the terminology of Andersen, we will consider the presentative structures (Construction 1, Table 1) to be an instance of simple grammation and the focalization structures to be reanalyses of presentative structures followed by a relative clause, i.e. cases of regrammation (Andersen 2006:232–233). In other words, we have two steps of reanalysis. The first is the creation of the presentative construction (Construction 1 in the table above) from a former free lexical construction. The second reanalysis concerns the Construction 1 followed by a relative clause. The result of the regrammation is such that the combination of the presentation construction and the *qui/que*-sentence (i.e. Construction 2) is not the sum of the two parts, but a new construction with a new function.<sup>12</sup> The focalization construction presupposes a situation of communication which is implicit or explicit. When implicit, it is indicated in the following tables by means of the notation –deixis. When explicit, it is indicated by +deixis. Please, observe that ±deixis, referring to the communication situation, is different from ±deictic concord, which concerns syntactic constraints, see Section 2.1.

In the following, we shall first take a closer look at four different types of presentative constructions, *c’est*, *il y a*, *il est*, and *voici/voilà*, and their respective regrammated focalization constructions. We will describe how they differ with respect to semantics and function, formal constraints, and level of formality (Sections 3.2.1 to 3.2.4).

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12. We are aware that in spoken language we find focalization structures in which the second part of the construction is not a relative clause, but instead separated from the NP by a pause, e.g. *J’ai ma copine – elle vient me voir tous les jours*, ‘I have my friend, she comes to see me every day’. Since such cases are not formally focalization structures, they will not be treated here. We thank Sophie Prévost for having drawn our attention to this type.

## 3.2 Inventory of structures

### 3.2.1 *C'est X*

*C'est X* is the default-presentative with no constraints in use. When *c'est X* is used as a presentative, there is no explicit textual reference or clear function of *c'* (Jaubert 1990: 110). *C'est* can be followed by a noun phrase or a tonic form of the personal pronoun, and it introduces a referent *X* or provides identification of *X*, known or unknown to the receiver, (Jaubert 1990: 110; Riegel et al. 2009 [1994]: 453). There is no explicit reference to a receiver, i.e. there is no deixis. *C'est X* contains the neutral type of focus introduced above, focus being *X*. *C'est X* can form a sentence with a complement clause in an answer to a question, but only in informal language:

- (4) *Qu'y a-t-il? – C'est que je ne suis pas d'accord.* 'What is wrong?' – 'It's that I don't agree'  
(Riegel et al. 2009 [1994]: 454)

*C'est* cannot be used without *X*, but apart from that, there are no formal constraints. It varies in tense and mood, although the present tense often replaces the other tenses. It can also vary in number, however, mostly in formal language (Riegel et al. 2009 [1994]: 455). *C'est X* does not appear in Lambrecht's list of presentatives.

The stylistic constraints essentially regard the use of the plural form of the verb. When followed by a personal pronoun in the 1st or 2nd person plural, the plural form is excluded:

- (5) *C'est nous/vous* 'It's us/you'

When *X* takes the 3rd person plural form of the personal pronoun, the verb is generally in the singular form:

- (6) *Ce n'est pas eux* 'It isn't them'

The plural form of the verb: *ce sont X<sub>plur</sub>* is considered formal style, and *c'est* is preferred in standard use, especially in oral communication (Riegel et al. 2009 [1994]: 455).

Scholars agree (see e.g. Jaubert 1990: 110) that *c'est X* is the origin of the cleft construction. We consider the cleft construction to be a regrammation of the presentation/identification construction. *C'est X qui/que* expresses focus by extracting a constituent (subject, object, adverbial complement etc.), known or unknown to the interlocutor. It may or may not express opposition to a previously mentioned entity, as in examples (7) to (9) where this entity is not explicitly referred to.

There is no explicit reference to a receiver, i.e. there is no deixis. The construction introduces a referent *X* or provides identification of *X*, known or unknown

to the receiver. It is the unmarked and most frequent focalization construction<sup>13</sup> (Riegel et al. 2009 [1994]:456), i.e. it varies in tense, mood and number, it can be negated and questioned:

- (7) *C'est le donneur qui ouvre les enchères* 'It is the auctioneer who starts the auction'  
 (8) *C'est une conversation d'ennemis que nous avons là?* 'Is this a conversation amongst enemies?'  
 (9) *Ce sont les lapins qui ont été étonnés*<sup>14</sup> 'It was the rabbits that got astonished'

*C'* is coindexed with the subject of the relative clause (Jaubert 1990: 110). In paradigmatic terms, we have members of two paradigms,<sup>15</sup> which are connected, sharing a common domain and a common semantic frame. The *domain* is SVX followed by an optional relative clause. The semantic frame is focalization, syntactically marked or not. The difference between the two members of the paradigm concerns the focalization type, neutral or syntactic.

**Table 2.** Partial paradigm of *C'est X* and *C'est X qui/que*

Members of the paradigm	<i>C'est X</i>	<i>C'est X qui/que</i>
Form	SVX Examples (5), (6)	SVX <i>qui/que</i> -clause Examples (7), (8), (9)
Content	Presentation/identification of <i>X</i> (known or unknown to the receiver) in a neutrally focalized construction -deixis	Presentation/identification/opposition of <i>X</i> (known or unknown to the receiver) in a regrammated construction of focalization -deixis

13. Andersen (2001c) thoroughly discusses the different ways that the term markedness has been and is still used in linguistics, for example about semantic complexity, structural complexity, and text frequency. In particular, Andersen stresses that "[i]f one wishes to understand synchronic variation or diachronic changes in the correlation between Markedness values and relative text frequency, then, it is essential to keep the two distinct, and it is totally counterproductive to define one in terms of the other." We accept Andersen's point of view, against others, e.g. Haspelmath (2006).

14. Examples (9) and (19) from Wilmet (1997:507, 522).

15. The paradigmatic opposition presented in Table 2 involves two connected paradigms. The members are each part of these two paradigms, the neutrally focalized paradigm and the grammaticalized focalization paradigm, respectively. Subsequently, we label them partial paradigms.

### 3.2.2 *Il y a X*

Riegel et al. (2009 [1994]:454–455)<sup>16</sup> divide the function of *il y a X* into two different values, i.e. as a presentative equivalent to *voici X* (10), and as a construction expressing existence equivalent to *il existe X* which, when followed by an indefinite NP in plural, has a generic meaning (11).

(10) *Il y a/voici Jacques dans la rue* ‘Here is Jacques in the street’

(11) *Il y a = il existe des cigognes noires* ‘black storks exist’

Serving as a presentative (10), it can be followed by a definite NP or a proper noun, but requires also a spatial marker in order to indicate the location of the referent of the NP (*dans la rue*).

*Il y a* cannot be used without *X*. It varies in tense and mood and it can be negated or restricted. *Il y a* points to the existence of a referent *X*, known or unknown to the receiver. *X* is an NP, a personal pronoun, or a proper noun (Riegel et al. 2009 [1994]:455).

With the value of existence, *il y a X* has a preference for the indefinite (Riegel et al. 2009 [1994]:455), see examples (12) and (13):

(12) *Il y a quelqu’un/un homme* ‘There is someone/a man’

In the presentative function, *X* is most often a definite noun phrase or a proper noun (cf. examples (10) and (13)):

(13) *Il y a le facteur à la porte* ‘There is the postman at the door’

However, with the presentative value, the definite and the indefinite can be mixed, as is the case in example (14):

(14) *Dans le fond de la voiture, il y avait juste le Major et un chien, et deux valises*  
‘Inside the car there was the major, a dog and two pieces of luggage’

*Il y a* is mainly used in oral, informal communication, as in example (4). Thus, it is a stylistically marked construction compared to *c’est X*. It can combine with a complement clause in an answer to a question, but only in colloquial language (Riegel et al. 2009 [1994]:454):

(15) *Qu’y a-t-il? – Il y a que je me suis trompé* ‘What is wrong?’ – ‘It’s that I am mistaken’

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16. Examples (8), (10) to (18) are quoted from Riegel et al. (2009 [1994]).

When followed by a personal pronoun, this takes the tonic form (16), which, however, is not current in the 3rd person singular, unless coordinated with an additional entity (17) (Riegel et al. 2009 [1994]:453).

(16) *Il y a moi/toi/nous/vous* ‘It’s me, you, us, you’

(17) ?? *Il y a lui – Il y a lui et sa femme* ‘It’s him’ – ‘It’s him and his wife’

There is no explicit reference to the communication situation, i.e. there is no deixis.

*Il y a* used in a cleft construction has a more restricted use than *c’est X qui/que*. We consider it to be a regrammation of the presentation construction. It can be followed by an indefinite noun phrase, constituting a cleft construction as a variant of a simple construction, e.g. *beaucoup de gens parlent pour ne rien dire* (‘many people speak without saying anything’). In such cases, the meaning of *il y a X qui/que* is to focus on the existence of *X* + relative clause, possibly with a specific emphasis on the quantification of *X* (cf. Lambrecht 2000; Riegel et al. 2009 [1994]:455).

(18) *Il y a beaucoup de gens qui parlent pour ne rien dire* ‘There are many people who speak without saying anything’

(19) *Il y a trois patients que Knock n’a pas visités* ‘There are three patients that Knock has not yet seen’

We consider examples like (18) and (19) which express existence and not presentation as examples with a subordinate relative clause. Whereas when *X* is a definite noun phrase, as in example (20), it does not mean existence, but presentation, and the relative clause is not subordinate. Instead, the relative clause establishes a relation of interdependency with the antecedent, in the sense that the two parts have equal importance in the focus construction. In other words, it is a nexus construction and the relative clause is deictic.

(20) *Il y a les agriculteurs qui manifestent à Strasbourg* ‘There are the farmers who are demonstrating in Strasbourg’

We agree with Riegel et al. (2009 [1994]:456), according to whom example (20) presents a global vision of the activity expressed, thus eliminating the distinction between theme and rheme. Observe that we find restrictions on tense, on determination, etc. concerning this type, entirely in line with *deictic* concord mentioned in Section 2.1, restrictions which are absent from the *subordinate relatives*, as appears from examples (18) and (19) above, where we find an indefinite *X* (*beaucoup de gens*) and a past tense (*n’a pas visités*). There is no explicit reference to the communication situation, i.e. there is no deixis.

Table 3. Partial paradigm of *Il y a X* and *Il y a X qui/que*

Members of the paradigm	<i>Il y a X</i>	<i>Il y a X qui/que</i>
Form	SVX* Examples (10), (11), (12), (13), (14), (15), (16)	SVX <i>qui/que</i> -clause Examples (18), (19), (20)
Content	a. Presentation of <i>X</i> b. Existence of <i>X</i> (known or unknown to the receiver) in a neutrally focalized construction –deixis	a. Presentation of <i>X</i> +deictic concord b. Existence of <i>X</i> –deictic concord (known or unknown to the receiver) in a regrammated focalized construction

\* We consider *y a* to be lexicalized as a verb, hence *V*.

### 3.2.3 *Il est X*

*Il est X* is very restricted in use compared to the previous presentatives. It points to the existence of a referent *X* of the noun phrase, generally unknown to the receiver (Jaubert 1990: 111). It is mainly combined with the adverbial phrase *une fois*, and primarily used to open fairy tales. Besides this function, *il est* is only found in fixed impersonal constructions, expressing time:

- (21) *Il est temps/tard etc., il est cinq heures, il était une fois une petite fille de village*<sup>17</sup>  
'It's time/late, etc., it's five o'clock, once upon a time there was a little girl in a village'

This construction is only found in the indicative, present or imperfect tense, in the singular form and is used to present an entity unknown to the receiver.

*Il est* is the literary variant of *il y a*, and was mainly used in the classical period of French.

In Lambrecht (2000: 49) *il est X qui* is analyzed as an example of what he confusingly labels presentatives, which together with a relative form a presentative relative construction. According to the standard terminology, this is a focalization construction, labelled the Cleft Construction in Lambrecht (2001), exemplified by:

- (22) *Il était une fois une belle princesse qui vivait dans un vieux château* 'Once upon a time there was a beautiful princess living in an old castle'

The relation between the antecedent and the relative is a relation of subordination. Just like the *il est X*-presentation construction, the *il est X qui*-focalization construction is highly restricted in use: it is mainly found in the past tense and primarily

17. Examples (21), (25), (26), (28), and (29) are quoted from Riegel et al. (2009 [1994]: 453–456).

used to open fairy tales. The construction is used to focus on an entity unknown to the receiver.

**Table 4.** Partial paradigm of *Il est X* and *Il est X qui/que*

Members of the paradigm	Il est X	Il est X qui/que
Form	SVX Example (21)	SVX <i>qui/que</i> -clause Example (22)
Content	Presentation of X (unknown to the receiver) in a neutrally focalized construction –deixis	Presentation of X (unknown to the receiver) in a regrammated focalized construction –deixis

Since this partial paradigm is very restricted in use, we will not integrate it into the whole paradigm of focalization (see Section 4).

### 3.2.4 *Voici/voilà X*

*Voici/voilà X* present a referent *X*, known or unknown to the receiver:

(23) *Voilà une belle fleur* ‘Here is a beautiful flower’

(24) *Voici mon ami Pierre* ‘Here is my friend Peter’

It is characteristic for these constructions that they address explicitly the interlocutor and thus have the feature of +deixis. The classical distinction between the two forms *voici/voilà* was a reference to proximity and distance, respectively, which is lost in modern French.

*Voici/voilà* are indeclinable, they are monovalent (Lambrecht 2001: 468), they can appear alone, without *X*, as interjections in an answer (Riegel et al. 2009 [1994]: 453–454). *Voici/voilà X* can form a sentence with a complement clause presenting a new situation:

(25) *Voilà qu’il neige* ‘It is snowing’

The complement clause can be reduced to an infinitive:

(26) *Voici comment faire* ‘Here is how to do’

The atonic form of the personal pronoun can appear as object preceding the presentative

(27) *Le voilà* ‘Here he is’

The constructions cannot be negated in a declarative utterance:



(28) \**Ne voilà personne* ‘Nobody is here’

but a fossilized, archaic, negated use is found in interrogatives:<sup>18</sup>

(29) *Ne voilà-t-il pas qu’il revient?* ‘Isn’t he on his way back?’

X can be a comparative or a superlative:

(30) *Voilà plus intéressant / Voici la meilleure analyse de Henning* ‘This is more interesting / this is the best analysis by Henning’

In Modern French, *voilà X* is more frequent than *voici X*, and the latter is marked compared to the former. The constructions are especially frequent in oral, informal communication, in accordance with the deictic character of the forms.

*Voici/voilà X qui/que* can express focus with the extraction of the subject (NP or pronoun subject of the relative). *Voici/voilà X qui/que* can be followed by a subordinate or a deictic relative. Example (31) illustrates the structure with a subordinate relative. The object consists of a complex NP and can be pronominalized by the feminine pronoun *la*. In contrast, example (32) is a nexus construction. Here a pronominalization of the antecedent is possible only with preservation of the deictic relative *la voilà qui arrive*, or taking the neutral form *cela* instead of the feminine pronoun: *voilà cela*.

(31) *Voilà ma sœur que tu as rencontrée hier* → *la voilà* ‘Here is my sister who you met yesterday → here she is’

(32) *Voilà ma sœur qui arrive* → *la voilà qui arrive* ‘Here is my sister arriving → here she is arriving’

According to Riegel et al. (2009 [1994]: 456), the construction with the deictic relative is syntactically restricted, because it presupposes among other things a known referent, see below. Wilmet (1997: 522) describes these as “*prédications secondes indirectes à lien pronominal*”.<sup>19</sup>

(33) *Voici le facteur qui arrive*<sup>20</sup> ‘Here is the postman arriving’

(34) *Le voici/voilà qui arrive* ‘He is arriving’

In order to maintain the idea of simultaneity, typical of holistic constructions, the verb must be in the present tense, since *voici/voilà* are deictic expressions rooted in

18. Note that the presence of an explicit subject, *il*, was possible with the imperative in previous periods of French (Grevisse & Goosse 1988: 669).

19. ‘Indirect secondary predications [with the possibility of] referring to pronouns’ (AT).

20. Examples (33) and (34) are from Lambrecht (2000).

the time of the utterance. This is in accordance not only with our presentation of *voici/voilà X* and a deictic relative, in which we consider them part of a progressive, holistic and deictic construction (Kragh & Schøsler 2014), but also with Lambrecht (2000: 50–51), who states that the function of this type of focus construction is to present an entity and to express new information about this entity in one operation.

**Table 5.** Partial paradigm of *Voici/voilà X* and *Voici/voilà X qui/que*

Members of the paradigm	Voici/voilà X	Voici/voilà X qui/que
Form	VX Examples (23), (24), (25), (26), (27), (29), (30)	VX <i>qui/que</i> -clause Examples (31), (32), (33), (34)
Content	Presentation of X (known or unknown to the receiver) in a neutrally focalized construction +deixis	a. Presentation of X, subordinate relative –deictic concord (known or unknown to the receiver) in a regrammated focalized construction b. Presentation of X, deictic relative +deictic concord (known to the receiver) in a regrammated focalized construction

### 3.2.5 *Avoir X qui*

This construction is not a reanalysis of a corresponding presentative. It has been relatively scarcely studied, as observed by Conti (2010). We believe that the construction originates from a free possessive structure, subject + *avoir* + object (NP), where the object is in some way related to the subject, e.g. a body part, a family member, etc. This free construction has been reanalyzed as a grammatical construction with the function of focalization. The object is known to the subject, but not necessarily to the receiver, see (35) and (36). The examples quoted in the literature are exclusively in the present tense. It is a recent construction, mainly found in oral or informal texts. The following examples are quoted from Conti (2010):

(35) *Il a les cheveux qui tombent* ‘He has his hair falling off’

(36) *J’ai ma copine qui habite à Paris* ‘I have my friend living in Paris’

Lambrecht (2000: 53) classifies this construction together with *il y a X qui*, correctly pointing out that the verb *avoir* is bleached.

Table 6. Partial paradigm of *Avoir X qui/que*

Members of the paradigm	Avoir X	Avoir X qui/que
Form		SVX <i>qui/que</i> -clause Examples (35), (36)
Content		Presentation of X, deictic relative +deictic concord (known or unknown to the receiver) in a grammated focalized construction –deixis

Since this construction is not a regrammation of a presentation/identification construction, we will not include it in our concluding paradigmatic structure, see Section 4.

### 3.2.6 *X est là qui*

Inspired by Furukawa (2000), Lambrecht (2000) includes in his list of focus constructions, *être là* combined with a relative subordinate, which he labels “construction relative présentative à thème spatialement localisé” (“spatially located theme construction”). The following is a typical example:

(37) *La jeune fille était là qui fumait* (lit.) ‘The young woman was there smoking’

Furukawa, however, considers examples like (37) to be of a different type, which has the spatial affiliation as its main feature (2000: 104). He believes that his analysis is supported by the observation that the antecedent of the relative pronoun *qui* is formally the preceding sequence, rather than the subject of the matrix. We do, nonetheless, agree with Lambrecht, and consider such examples to be focus constructions, since we find them similar to the examples below (examples from Furukawa 2000: 104 analyzed as focus constructions):<sup>21</sup>

(38) *Elle est là qui pleure* ‘She is there crying’

(39) *La voilà qui pleure* ‘There she is crying’

The construction *X est là qui* ... presupposes an indication of a spatial localization (Furukawa 2000). According to Furukawa (2000: 104), its function is exclusively to focalize and not to present X.

21. In Furukawa (2000), however, the author seems to have changed his opinion with respect to the relation between the antecedent and the relative, considering the relation to be of subordination instead of interdependency.

In line with the other occurrences of the deictic relative construction, this one only accepts the present and *l'imparfait*<sup>22</sup> and cannot be negated (Furukawa 2000: 103). It is mainly used in informal and oral language.

**Table 7.** Partial paradigm of *X est là qui*

Members of the paradigm	<i>X est là</i>	<i>X est là qui</i>
Form		SVX <i>qui/que</i> -clause Examples (35), (36)
Content		Presentation of <i>X</i> , deictic relative +deictic concord (known or unknown to the receiver) in a grammated focalized construction –deixis

Since this construction is not a regrammation of a presentation/identification construction, we will not include it in our concluding paradigmatic structure, see Section 4.

### 3.2.7 *Je vois X qui*

Following Lambrecht 2000, we discuss the possibility of including the type *je vois X qui* in the list of focus constructions, based on his specific premise that it is equivalent to *voici/voilà X* combined with the deictic relative:

- (40) *Je vois la jeune fille qui fume / Je la vois qui fume / La voilà qui fume* 'I see the young woman smoking / I see her smoking / There she is smoking'

Lambrecht claims that the content of the relative is the main message of the construction, reducing the context of the matrix to introducing *X*. The reanalysis from pure perception to presentation (i.e. the first stage of grammaticalization mentioned in Section 2.1, from full lexical structure reanalyzed as presentation construction) is thus fulfilled (see Kragh and Strudsholm 2013: 213–217), implying that the meaning of this structure is not to tell the interlocutor about the speaker's perception of a young girl smoking, but to draw the attention of the listener to the fact that the girl is smoking. However, we question that this construction is part of a communication since there is no reference to the situation of communication. We find that the forms can be interpreted as part of a narrative. In previous studies, we have analyzed *je vois X qui* as a deictic construction and shown that such constructions express progression, simultaneity, and holistic vision (Kragh & Schøsler 2014, 2015), see

22. Furukawa (2000: 107) quotes a few exceptions to this restriction and proposes a different analysis based on a mainly semantic approach, which does not convince us.

Section 2.1. However, we are inclined to dismiss this construction from the focalization paradigm, because it does not fulfil the requirements of reference to the communication situation, see the definitions in Section 3.1.

### 3.3 Conclusion on partial paradigms

We have investigated eleven structures having in common that they provide important and new information on new or already known entities *X*. We have distinguished two types, one with *neutral focus*, and another with *grammaticalized focus*. These two terms correspond to the terms *foyer simple* and *foyer spécialisé*, respectively (Nølke 1997),<sup>23</sup> and the latter corresponds to the term *focalisation identificatrice*,<sup>24</sup> used by Martin (1981). We have established partial paradigms in which the neutral focus structures have regrammated into grammaticalized focus structures. Two structures have no neutral focus, but only grammated focus, cf. 3.2.5 and 3.2.6. One candidate for focus construction proposed by Lambrecht (2000) has been dismissed, cf. 3.2.7. In the conclusion, we will sum up the criteria for establishing a paradigm of focalization including the productive<sup>25</sup> structures presenting neutral as well as grammaticalized focus.

## 4. Conclusion

The structures discussed in the previous section have in common that they are found in a fictive or real communication situation, in which the speaker addresses his interlocutor in order to provide important and new information on new or already known entities. We have discussed whether these structures are constructions in the sense that they are the result of a reanalysis of a free structure, turned into a complex grammaticalized entity, or even the result of a second reanalysis (a regrammation). According to the definitions in Nørgård-Sørensen et al. (2011), grammaticalized constructions are paradigmatically organized. They share a common *domain*, defined as the syntagmatic context, which is (S)VX (*qui/que*-clause) and a *semantic frame* (defined above as structures providing important and new information to the

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23. We note that Nølke (1997) introduces the notion of paradigm, however defined in different ways. Sometimes it is used in line with the general interpretation (Nølke 1997:288), but other times it refers to the semantic frame, as far as we understand it (Nølke 1997:287).

24. 'Focalization of identification' (AT).

25. Since *il est X (+qui/que)* is fossilized as shown in Section 3.2.3, we exclude it in order to concentrate ourselves on a synchronic, productive perspective.

interlocutor on new or already known entities). The *domain* should be read in the following way: a verb form with or without its subject,<sup>26</sup> and *X*, which is the entity introduced or focalized. In cases of presentation/identification constructions, i.e. neutral focalization, there is no *qui/que*-clause, whereas in cases of grammaticalized focalization, structures are followed by a *qui/que*-clause. The grammaticalized focalization is the result of a reanalysis of the neutral focalization structure. The result of this reanalysis is that the focalization is unequivocally marked.

The main distinction is thus between neutral and grammaticalized focalization, i.e. the second and the third column in Table 8, respectively. We have in total six members of the paradigm, each of them opposed on several dimensions, since they are opposed both with respect to the type of focalization (horizontal distinction in Table 8) and with respect to criteria which we will discuss further in the following, and which result in relations of markedness between the members (vertical distinctions in Table 8).

The structures identified as constructions expressing focus, neutral or grammaticalized, have been characterized by means of the following criteria: presentation/identification *versus* presentation alone, subordination *versus* nexus construction,  $\pm$ deictic concord in the relative clause,  $\pm$ deixis in the matrix clause, and restrictions on tense, mood, etc., see Table 8. According to these criteria, *C'est X  $\pm$  qui/que*-clause is the unmarked member of the paradigm, since it both presents and identifies, it has no deictic concord in the relative, it has no deixis in the matrix, and no restrictions on tense and mood, etc. The relation between the relative clause

**Table 8.** Paradigms of focalization in modern French

**Domain:** (S)VX(*qui/que*-clause)

**Semantic frame:** *Focalization*

Members of the paradigm	Paradigm of neutral focus (S)VX	Paradigm of grammaticalized focus (S)VX <i>qui/que</i> -clause
<i>C'est X (qui/que)</i> –deixis unmarked member	presentation/identification reanalysis $\rightarrow$	focus and $\pm$ opposition subordinated relative
<i>Il y a X (qui/que)</i> –deixis marked member	presentation reanalysis of presentation $\rightarrow$	nexus construction $\pm$ deictic concord
<i>Voici/voilà X (qui/que)</i> +deixis marked member	presentation reanalysis of presentation $\rightarrow$	nexus construction $\pm$ deictic concord

26. The parentheses signal optionality.

and the antecedent is a relation of subordination. The two other structures are opposed to this unmarked construction as marked members. Between the two marked members the *il y a* – structure is less marked than the *voici/voilà* – structure because it has no deixis in the matrix and it has less restrictions on tense and mood than *voici/voilà*. The two structures share the following criteria: they do not mark identification, exclusively presentation, they both have deictic concord in the relative, which forms a nexus construction with the antecedent.

The paradigms consist of partial paradigms opposed vertically and connected horizontally, meaning that there is an opposition between neutral and grammaticalized focalization, and another opposition between deictic and non-deictic content on two levels, both in the matrix clause and in the relative clause, the latter with predictable restrictions that we have labelled *deictic concord*. Each of the two paradigms is simple, because purely constructional. They are *connected*, because the members of grammaticalized focalization paradigms presuppose the existence of the neutral focalization paradigm and a reanalysis, i.e. regrammation of the latter ( $B \rightarrow C$ ). We hope to have shown that our paradigmatic analyses are simpler and more consistent with the facts than the traditional, often confusing ones, and that connecting them provides a clearer understanding of the notions *presentation* and *focalization*, respectively.

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# Morphosyntactic reanalysis in Australian languages

## Three studies

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This paper discusses three examples of reanalysis in the Pama-Nyungan languages of Australia, affecting word, clause, and sentence level constructions respectively. The elimination of a morpheme boundary, with absorption of an erstwhile suffix into the nominal stem, in Western Desert dialects revisits and amplifies earlier discussion from Koch (1995), canvassing various motivations and finding supporting data more recent data from Langlois (2004). Secondly, the gradual implementation of the effects of a change from ergative to accusative alignment in Panyjima, as established by Dench (1982), are explored within Andersen's framework of actualisation. The third study shows, on the basis of the etymology of formal markers, how, in the Arandic languages, biclausal structures have developed via auxiliarisation into inflectional markers of imperfective aspect, but also into a set of inflections realising contrasting values within a new morphosyntactic category of "associated motion". This section articulates the diachronic developments behind the synchronic system, building on earlier suggestions by Koch (1984) and Wilkins (1991).

**Keywords:** Australian, Pama-Nyungan, case, alignment, anti-passive, passive, auxiliarisation, imperfective, associated motion

### 1. Introduction and overview

Reanalysis has played a large role in the historical development of morphosyntax in the languages of Australia.<sup>1</sup> However, given the lack of historical records in these

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1. By 'Australian languages' we mean the languages traditionally spoken on the Australian continent (excluding Tasmania). The approximately 300 languages are usually assumed to be distantly related to one another in a macro-family. There are some 20 recognisable families, of which by far the largest – in terms of both the number of languages and their geographical extent, is called

languages, most of these changes are necessarily inferred by reconstruction from comparison between languages or from language-internal evidence. The interest of historical Australian linguistics has been more focused on accounting for the etymological sources of morphosyntactic data than on the processes of change themselves (e.g. Koch 2003, 2015), which are hypothesised as explanations for the “diachronic correspondences” that have been proposed.<sup>2</sup> Motivations for reanalyses have not been explored as fully as desirable. Nor has there been much discussion of how the results of reanalyses have been actualised; e.g. whether they progress according to an orderly path determined by the broader structure of the language, along the lines promulgated by Timberlake (1977) and Andersen (2001a).

In this contribution, I present three cases – from Pama-Nyungan languages – involving reanalysis and attempt to characterise them in terms of the wider discussion of grammatical change found in works such as Andersen (2001b) and Harris & Campbell (1995). The first involves the reanalysis of morphological boundaries, which is relatively common given the agglutinative structure of the languages. The second involves a change in the ergative alignment characteristic of Australian languages; here we can see different stages in the actualisation of the reanalysis. The third is a case of clause fusion leading to auxiliary constructions, which then reduce to verbal inflections. But unlike more familiar developments of this kind, the inflectional properties created are not aspectual but belong to a grammatical category of “associated motion”, which was first identified in Australian languages.

## 2. Boundary loss with creation of morphological zero

In Koch (1995) I drew attention to morphological reanalyses that involved the loss of a morpheme boundary,<sup>3</sup> the absorption of former affixal material into the stem, and creation of a “morphological zero” in place of the former inflectional exponent. Many of my examples were taken from Australian languages. They were all cited as manifestations of a universal tendency to reanalyse as zero-marked morphological structures which included overt phonological material that appears to mark inflectional properties of the kind which may be expected, on typological grounds, to

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“Pama-Nyungan”. Many have ceased to be spoken; only twenty-some languages now remain vital; but there is widespread interest in recovering “sleeping” languages on the basis of available documentation. For more information on Australian languages see Koch & Nordlinger (2014).

2. Henning Andersen has been foremost in emphasising the difference between diachronic correspondences and actual linguistic changes (e.g. Andersen 2001a:228).

3. Cf. ‘boundary loss’ in Langacker’s (1977) typology of reanalyses.

lack formal marking, motivated by considerations of either iconicity or economy. The discussion here revisits one example that was briefly noted in Koch (1995), in order to explore further the possible motivations for the reanalysis.

Forms expressing the nominative case (or absolutive<sup>4</sup> case in ergative systems) are expected to be targets for reanalysis, since the nominative is typically the most semantically basic case value. Koch (1995: 38) gives only a brief description of the reanalysis of nouns such as *tawunpa* in the Ngaanyatjarra dialect of the Western Desert language, which was reported to be coming into use in the 1980s. A more recent (from 1994–95) study of teenage speech in the Pitjantjatjara dialect, as spoken at Areyonga, describes the change more explicitly: the reanalysed case system was “used by most people aged under 35” and in casual speech by older speakers (Langlois 2004: 59). In the traditional versions of both dialects, for common nouns (but not names) whose stem ended in a vowel, the nominative (and accusative) bore no marking, while ergative and locative were marked by suffixes *-ŋku* and *-ŋka* respectively. But stems which ended in a consonant, such as *maɭaŋ* ‘junior sibling’ or *tawun* ‘house’ (borrowed from English *town*), required a final syllable *pa* to satisfy a phonotactic target which did not allow words to end in a consonant.<sup>5</sup> This syllable was not really a “marker” of nominative-accusative case, but might be so interpreted since it occurred in a position in the word where it contrasted with other case suffixes, as well as with an overt suffix *-ŋa* which occurred in the nominative-accusative case of proper nouns. Langlois (2004: 58) calls this *pa* “augmentative *-pa*”. Other case-forms of such consonant-final common noun stems selected suffixes appropriate to consonant-final stems. For ergative and locative, these consisted of a stop homorganic with the final stem consonant plus *u* or *a*, respectively. To get from the nominative citation form to the required ergative and locative case-forms, a speaker had to realise that *pa* was not part of the lexeme, delete it, and add the allomorph appropriate to the place of articulation of the stem-final consonant. Table 1 shows some examples of Ngaanyatjarra and Pitjantjatjara reanalyses of consonant-final nouns. Here O indicates old paradigms and I the innovated paradigms—using the notation of Andersen (2001a).

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4. Absolutive is a name for the form that expresses both nominative and accusative case functions in opposition to the ergative.

5. For a description of the traditional system of case markers in noun phrases, in the Pitjantjatjara dialect as spoken at Fregon, see Bowe (1990), who describes the function of *-pa* as follows (p. 159): “The syllable *-pa* is recognized as being phonologically motivated, to create a stem final vowel where the syntax would assign a zero morpheme to a consonant final stem, thereby creating a phonotactically unacceptable surface form.”

Table 1. Ngaanyatjarra and Pitjantjatjara reanalyses of nominative forms

Ngaanyatjarra	‘camp’	‘house’ O	‘house’ I
Nominative	<i>ɲura</i>	<i>tawun-pa</i>	<i>tawunpa</i>
Locative	<i>ɲura-ɲka</i>	<i>tawun-ta</i>	<i>tawunpa-ɲka</i>
Pitjantjatjara	‘man’	‘junior sibling’ O	‘junior sibling’ I
Nominative	<i>wati</i>	<i>maɭaɲ-pa</i>	<i>maɭaɲpa</i>
Ergative	<i>wati-ɲku</i>	<i>maɭaɲ-cu</i>	<i>maɭaɲpa-ɲku</i>

There are several possible motivations for the reanalysis of the *pa* form and the consequent reformulation of the paradigm.<sup>6</sup> First, ambiguity: since there are lexical stems that end in a consonant plus *pa* (e.g. *ɲurpa* ‘ignorant’), the language learner could analyse the *pa* of the targeted nominative forms either as part of the stem or as something else, such as a nominative case suffix,<sup>7</sup> possibly a marker of common noun status, or an exponent of a functional nothing. Second, there is another case-marking pattern in the language, which involves no suffix after the stem; moreover such lexemes (stems ending in vowels) were more frequent than consonant-final-plus-*pa* forms. So generalising another pattern of case-marking provides another motive for reanalysis. The change could therefore be described as the analogical extension of another pattern. Third, the influence of a universal-based intuition comes into play. The language learners would not expect overt marking of the nominative case to be necessary, since nominative is the semantically most neutral case.

The absorption of *pa* into consonant-final noun stems has progressed further in a number of other languages in the western part of Australia, including Warlpiri (Hale 1973: 443ff.) and Panyjima, where it has led to the reduction of suffix allomorphy (Dench 1991: 133–134).<sup>8</sup> The availability of *pa* for phonotactic purposes

6. Koch (1995) appeals primarily to the third kind of explanation mentioned here, the universal principle.

7. There is language-internal evidence against this: a *pa*-final noun should not be interpreted as bearing nominative case unless it was phrase-final, since case is marked only on the final member of a noun phrase.

8. “Panyjima shares a general constraint against word-final consonants with a number of languages of Western Australia (including Western Desert dialects, and languages of the Kardu group: Yingkarta and Wajarri). A syllable /pa/ is suffixed to stems which would otherwise close with a consonant. In Panyjima, this constraint has generalised such that nominal suffixes and clitics may not be attached to consonant-final stems; the /pa/ syllable is employed to produce vowel final stems. The result is a greatly simplified array of suffix allomorphs (in comparison with other languages of the area (for example Martuthunira, and languages of the Kanyara and Mantharta groups).”

probably resulted from an earlier reanalysis; *pa* presumably descends from the nominative case form of the widespread Pama-Nyungan deictic stem \**pa*. The presence of an inflectional paradigm of \**pa* in the prehistory of the Western Desert language is revealed by a number of reanalysed forms in Pitjantjatjara: *pala* ‘that (mid-distant)’, *paŋa* ‘anaphor’, *palu-* 3SG pronoun stem (Bowe 1990).<sup>9</sup> I hypothesise that *pa* weakened from a deictic via a definiteness marker to a mildly topicalising particle which was empty enough of its semantic content to be recruited as a phonological filler that could be employed on consonant-final words to meet a new phonotactic requirement that words end in a vowel.<sup>10</sup>

### 3. Reanalysis of alignment: Ergative to accusative

Changes whereby a language has altered its alignment system have figured in discussions of reanalysis in syntactic change (Harris & Campbell 1995: 240–281). These include claims about the reanalysis of passive constructions, in accusatively aligned languages, to active ones with ergative alignment (Anderson 1977; Bubenik 2001) as well as the reanalysis of anti-passive constructions, in ergatively aligned languages, to create new constructions with accusative alignment. Most of the Australian languages of the dependent-marking type, i.e. those without marking of actants by means of verbal prefixes, have ergative alignment. The major exceptions are a few languages of the Tangkic (non-Pama-Nyungan) language family and the Ngayarda subgroup of the Pama-Nyungan family, which have accusative alignment. A challenge for Australianist historical linguists has been how to account for these differences. Dench (1982) reconstructs the development of accusative alignment constructions in a number of Ngayarda languages of Western Australia, illustrated by means of Panyjima in particular.<sup>11</sup> Here I present Dench’s analysis, trying to put the hypothesised changes more explicitly into Andersen’s framework of reanalysis and actualisation, supplementing Dench (1982) with material from Dench (1991). Most of these hypothesised changes are set out in Table 2 as a set of five chronological stages, with changed interpretations signalled by boldface.

9. For the earlier paradigm of \**pa* see Koch (2009). For explanations of multiple reanalyses of its inflectional forms as stems, see Dench (2007).

10. In Kaytetye (Koch & Turpin in preparation) a possibly cognate form *pə* is a mildly topicalising enclitic.

11. Other studies along the similar lines are Klokeid (1978) and McConvell (1981) for Lardil in the Tangkic family.

Table 2. Hypothesised changes in Panyjima alignment

1	Basic	Subj:ERG Obj:ACC V	A-P	Subj:NOM Obj:DAT V
2	Restricted	Subj:ERG Obj:ACC V:PRF <i>ɲaɲa ɲacu</i>	Basic	Subj:NOM Obj:ACC V
3	Passive	Agent:AGT Subj:NOM V:PRF <i>ɲaɲalu ɲaɲa</i>	Basic	Subj:NOM Obj:ACC V
4	Passive Perfect	Agent:AGT Subj:NOM V:PASS.PRF	"	"
5	Productive Passive	Agent:AGT Subj:NOM V- <i>ɲuli</i>	"	"

The point of departure for this series of changes is assumed to be a situation, found in a number of Australian languages, as noted by Blake (1977), whereby, in addition to the normal construction according to which transitive clauses mark their subject with ergative and their object with accusative case, another “anti-passive” construction occurs, in which the subject and object are marked by nominative and dative cases respectively. This anti-passive construction may be controlled by the TAM of the verb: Blake (1977: 16) mentions “future tense, imperative mood, imperfect, potential or irrealis aspect ... the tenses and aspects involved here have in common that they refer to activity that has not actually been carried out or has not been carried through to completion”. In some languages an anti-passive construction signals, irrespective of the verbal TAM, that the object is not fully affected by the action.

Regardless of the motivation for the anti-passive construction in the ancestor of Panyjima and its near relatives, one must assume that the anti-passive construction came to be prevalent enough to be analysed as the basic construction for transitive clauses. The dative-marking suffix on the object was reanalysed as the marker rather of accusative case.<sup>12</sup> This reanalysis involved no change in form: the object-marker was simply revalued as an accusative rather than a dative case in this construction. Meanwhile, the erstwhile basic construction would have survived for a while as a restricted construction, bearing a system of case-marking which differed from the new basic construction, and confined to occurring with certain TAM values, such as perfect, or situations where the object was most completely affected; in Table 2, Stage 2, this is represented as perfect tense-aspect.

This restricted construction, being exceptional according to the new basic construction, was reanalysed as a passive construction. Accordingly the erstwhile subject was analysed as an agent, with the allomorphs of the old ergative now being regarded as marking a new “agentive” case (AGT),<sup>13</sup> and the former object

12. The same suffix continued to mark other functions of the dative case, in addition to its new role in marking accusative case.

13. This is the terminology used in Dench (1991). In Dench (1982) it was labelled *Instrumental*.

being treated as a subject in the nominative case. This new analysis involves no difference in the surface forms of the case suffixes – provided the agent and subject were ordinary nouns. This is because the (old) accusative is zero-marked as is the (new) nominative; likewise the (new) agentive suffix is identical in form to the (old) ergative suffix. However, during the actualisation of this new analysis, the pronouns occupying the subject and agent roles would have been replaced; e.g. for the old accusative form of the 1Sg *ɲacu* (which also served as a dative) it was necessary to substitute the nominative form *ɲaʔa*, and for the agent, in place of the former ergative form *ɲaʔa* (which was formerly identical to the nominative) a new agentive form *ɲaʔalu* was created by suffixing a nominal allomorph *-lu* of the agentive (formerly ergative) case to the stem occurring in the nominative. The changes to the forms of the 1Sg pronoun are shown in the second line of Stage 3 in Table 2.

The verb also apparently underwent a change during the actualisation of the new passive analysis. The contemporary inflection in this construction, which is largely confined to situations of irreversible change affecting the subject, is a passive perfect suffix with conjugationally conditioned allomorphs *-caɲa:nu* and *-ɲa:nu* of uncertain origin.

A final stage of actualisation involved the creation of a productive passive, for use in clause linking, by extending to transitive verbs the derivational use of the Inchoative suffix *-ɲuli* that was formerly applied to derive intransitive verbs from nominal stems.

The reanalysis of former anti-passive constructions has still not been fully implemented. Relics of the earlier state of affairs survive in (positive) imperative constructions involving transitive verbs (Dench 1991: 204, from which these examples are taken). Nominal objects of verbs inflected for imperative do not bear the new accusative marking characteristic of objects, but continue to be suffixless. This was the form of the accusative in the original construction, but now is most straightforwardly analysed as being the nominative. This can be seen in ‘swag’ in (1). Furthermore, subject adjuncts, which are expected to be case-marked in agreement with the (unexpressed) subject, which formerly would have been in the ergative case, are marked with allomorphs (*-ɲku* and *-lu*) of the agentive case, which continues the earlier ergative but is now interpreted as agentive. Such elements are manner adverbials (‘slow’) in (1) and body parts (‘left foot’ in (2)).

- (1) *paɲa ɲurɪɲpa yinti-ʔu-nma ɲaɲi-ɲku.*  
 that swag(NOM?) go.down-PLACE-IMP slow-AGT  
 ‘Lower the swag slowly.’
- (2) *ʔala-nma cina-ɲku campurka-lu.*  
 kick-IMP foot-AGT left.one-AGT  
 ‘Kick it with your left foot.’



Such survivals of earlier constructions help us to reconstruct grammatical change in languages, such as those of Australia, that lack a written history. But this is only possible because the effects of earlier reanalyses have been actualised gradually over time, leaving valuable clues the earlier situation.

#### 4. Clause fusion to auxiliary constructions and inflections marking Associated Motion

The creation of auxiliary verbs by the reanalysis of biclausal structures as single clauses is a much discussed process of grammaticalisation (e.g. Harris & Campbell 1995: 172–191). Once a subordinate clause is reanalysed as a main clause and the erstwhile main-clause verb is reanalysed as an auxiliary, a further natural development is the reduction of the auxiliary to become part of the inflection of the main verb, by “agglutination” (Harris & Campbell 1995: 193–194). Since most Australian languages have verb-final syntax and an agglutinating, suffixing morphological structure, grammaticalised auxiliaries follow their main verb and if univerted with them come to be inflectional suffixes. A number of studies show how independent verbs come to be treated as auxiliaries or even more integrated parts of main verbs. Austin (1998) shows that there is a recurrent tendency among Australian languages, as in languages in general, to grammaticalise a verb ‘sit’ to an auxiliary-like marker of (typically continuous) aspect; e.g. Jiwari *kumpa-*, Diyari *ɲama-*, Yankunytjatjara *ɲina-*, and Djapu *ɲina-*. Austin (1989) presents a scenario for the development in Diyari of auxiliary-type constructions from biclausal structures where the non-finite verb of a dependent clause is placed immediately before the inflecting main verb, which is then reanalysed as a modifier of the other verb.

In the Arandic subgroup of Central Australia (for which see Koch 2004) the effect of this process can be seen. In Alyawarr there are two “compound verbs” consisting of the combination of a participial form VERB-*lə* with the verb roots *anə-* ‘sit/stay/be’ and *ajntə-* ‘lie’ (Yallop 1977: 62–63). Mparntwe Arrernte has two continuous aspect markers, *-lənə* and *-ləpə*, of which the second expresses continuity when the subject is in motion. These aspect-markers consist of a participial suffix *-lə* followed by the verbal root *nə-* (cognate with Alyawarr *anə-*) and *-pə*, which continues an earlier root *apə-* ‘go’, which is preserved in Kaytetye (Wilkins 1989: 252–253). One piece of evidence that these aspectual suffixes were formerly periphrastic constructions is the fact that they have variant forms, *-l[ənə]* and *-l[əpə]*, when the subject is plural. Here the stop consonant reflects a former enclitic 3PL pronoun *=tə*, cognate with the stem *atə-* of the 3PL pronoun in Kaytetye (Koch 2004: 139–140). The Arrernte continuous aspect forms therefore reflect earlier periphrastic constructions \*VERB-*lə(=tə) anə-/apə-* ‘VERB-ing (3PL) sit/go’.

These auxiliary constructions, in turn, presumably were formed by the processes described by Austin (1989, 1998).

Kaytetye has undergone a similar process. Here the imperfective aspect of intransitive verbs is signalled by a combination of its verb *anə-* ‘sit/stay/be’ with a verb stem extended by *-rə*, which was apparently a former participial suffix. Thus, a periphrastic phrase *anjə-rə anə-* ‘speak-ing sit/be’ became fused into a single word *anjə-ranə* ‘is speaking’.<sup>14</sup> For transitive verbs, however, the imperfective present involves the agglutination of a different auxiliary *anjə-*, whose lexical predecessor is not known; e.g. *k<sup>w</sup>ajə-ranjə-* ‘is eating’. A contemporary Kaytetye sentence that illustrates the probable biclausal structure behind the auxiliarisation of ‘sit’ is (3), with the modern same-subject participle followed by the imperfective past tense of ‘sit’, with an intervening enclitic.

- (3) *K<sup>w</sup>əjəpəŋajə=pə atəŋtə wəjə k<sup>w</sup>ajəjə=lkə alk<sup>w</sup>ə-ŋjəjə=lkə anə-jajnə.*  
 after.it=TOP 3PL.NOM meat 3SG.DAT=then wait-SS=then sit-IPFV.PST  
 ‘After that they would sit waiting for the meat.’ (Koch Kaytetye Texts 11.33)

Clause fusion and auxiliarisation has led in the Arandic languages not only to aspectual markers but to the creation of a new grammatical category. Yallop (1977:62) mentions two motion verbs, *ajə-* ‘go/walk/move’ and *alpə-* ‘go away, go back’, among the “auxiliaries” that form part of his “compound verbs” in Alyawarr. The cognate verbs *jə-* ‘go’ and *alpə-* ‘go back’ occur in Mparntwe Arrernte in combination with two different suffixes on the preceding verb stem, *-jə-* (as in the continuous aspect forms) and *-cə*. The resulting forms, however, are not markers of aspect but of a different inflectional category that has come to be known as “Associated Motion”, following Koch (1984) and Wilkins (1989, 1991).

The most transparent auxiliary is *alpə-* ‘return’. It combines with VERB-*cə* in Arrernte to signal ‘GO.BACK&DO’,<sup>15</sup> and has a cognate form VERB-*jəlpə-* in Alyawarr and Kaytetye, with lenition of the palatal stop *c* to a glide *j*. The Arrernte construction VERB-*calpə-* Alyawarr and Kaytetye VERB-*jəlpə-* share the meaning GO.BACK&DO (equivalently, ‘do after going back’), and reflect an earlier phrasal form \*VERB-*cə alpə-*. Here \*VERB-*cə* is etymologically a nominalised form but in this construction it must have had a purposive or future-oriented meaning, \*‘go back to VERB’. They are described as marking “prior motion”.

14. *-ranə* is the stem of the imperfective aspect in Kaytetye, and may be followed by a suffix marking tense or mood. But the present tense may either remain suffixless (with zero marking of present) or (especially by younger speakers) take the productive present suffix *-nkə*.

15. The glossing follows the practice of Wilkins (1989).

All these languages have a contrasting construction, which combines *alpə-* ‘return’ with a verb form ending in *-l* (Arrernte), *-l* (Alyawarr), or *-l/r* (varying according to transitivity in Kaytetye). These constructions also signal return motion, but the order of the main action and the motion is reversed: they signal DO&GO.BACK (equivalently ‘do before going back’). They are described as marking “subsequent motion”. The forms are assumed to result from a combination of participial forms of verbs – the same as those suffixes that were involved in the creation of imperfective markers. If these forms were a kind of present participle the expected meaning might be ‘doing go back’; however, the semantic point of origin seems rather to have been ‘having done go back’, with a prior (perhaps immediately prior?) rather than a simultaneous meaning.

In all the languages mentioned here the contrast between prior and subsequent motion values within the dimension of associated motion reflects the combination of the same auxiliary, *alpə-* ‘return’ with two different non-finite verb forms. Alyawarr and Arrernte show an identical contrast in combinations with the motion verb ‘go’: *a|ə-* in Alyawarr and its cognate *lə-* in Arrernte. Table 3, shows these contrasts across three languages. Note that Kaytetye forms for DO&GO and GO&DO are not cognate with those of the other languages. DO&GO combines the *l-* and *r-* forms of the verb stem (*-l* after transitive and *-r* after intransitive) with a verb root *ajtə-*, whose independent meaning is ‘rise, come up’, used here in the sense of ‘do and then (get up and) go off’. For GO&DO we have the expected *-j(ə)* increment to the verb stem, but the rest (presumably an auxiliary *nə-*) does not correspond to any synchronically attested verb.

Table 3. Arandic Associated Motion contrasts

	Prior Motion	Subsequent Motion	Prior Motion	Subsequent Motion
	GO.BACK&DO	DO&GO.BACK	GO&DO	DO&GO
Arrernte	VERB- <i>calpə-</i>	VERB- <i>lalpə-</i>	VERB- <i>ca ə-</i>	VERB- <i>l ə-</i>
Alyawarr	VERB- <i>jalpə-</i>	VERB- <i>lalpə-</i>	VERB- <i>ja ə-</i>	VERB- <i>la ə-</i>
Kaytetye tr.	VERB- <i>jalpə-</i>	VERB- <i>lalpə-</i>	VERB- <i>jənə-</i>	VERB- <i>lajtə-</i>
Kaytetye intr	”	VERB- <i>ralpə-</i>	”	VERB- <i>rajtə-</i>

In addition to these prior motion and subsequent motion forms there are further forms specifying concurrent motion. One of these, for Kaytetye intransitive verbs, has the structure VERB-*rapə-*, which obviously consists of the ex-participial suffix *-rə* followed by the verb root *apə-* ‘go’ and means ‘do on the way’, derived apparently from ‘doing go’, with the participle here having a present/simultaneous tense sense. Another Kaytetye concurrent motion form is VERB-*jənalpə-*, which consists of the *-jə* found in prior motion forms, followed by *-nə*, which is a ‘hither’ enclitic in Kaytetye, and the verb root *alpə-* ‘return’. This combination of elements would

suggest a meaning ‘COME.BACK&DO’ but rather means ‘do while coming toward the speaker’. Apparently, there has been a shift in meaning since the construction was formed. The presence of the enclitic within the complex suffix is a trace of the earlier phrasal status of the suffix: \*VERB-*cə=ηə alpə-*.

This discussion has mentioned only those associated motion forms which most transparently descended from periphrastic auxiliary constructions. They form part of a large inflectional category, containing fifteen contrasting values in Mparntwe Arrernte (Wilkins 2006)<sup>16</sup> and at least twelve in Kaytetye (Koch & Turpin in preparation). Once the category has been created, new forms can be added to fill out implied semantic contrasts, either by analogy with existing forms in the language or by imitating constructions found in neighbouring languages. The original core of the system, however, probably originated by the reanalysis of biclausal structures. A presumed structure before this reanalysis would have included a main clause with a motion verb plus a subordinate clause containing a non-finite, participial form marking either future or concurrent (or immediately prior) relative tense, having the same subject as the motion verb in the main clause, and ideally preceding the main clause and containing a minimal number of noun phrases. Such structures can be found in contemporary Kaytetye. (4) illustrates a future-oriented purposive subordinate clause preceding a verb of induced motion ‘take back’, whereas the complex sentence in (5) contains the same induced motion verb preceded by a participle marking concurrent action, here interpreted as action immediately preceding that of the main clause. Note that in (5) the subordinate clause consists of just the participle; it is literally ‘then he killing (it) would take (it) back’.

- (4) *Wəjə=lkə kʷə.ə.ə pʷə-wəfə, alpə.əjənə-nkə.*  
 meat=then 3SG.ACC COOK-PURP take.back-PRS  
 ‘To cook the meat then, he takes it back.’ (Koch Kaytetye Texts 13.6)

- (5) *ŋəfə=pə .ə alarə-ηə.ə, alpə.əjənə-jajənə.*  
 then=TOP 3SG.ERG kill-SS take.back-IPFV.PST  
 ‘Then when he had killed it he would take it back.’  
 (Koch Kaytetye Texts 11.17)

Simpson (2001) describes in detail the steps involved in the grammaticalisation process that leads from a biclausal structure to a monoclausal structure with a complex verb and demonstrates that in Warlpiri the positioning of a participle immediately before the grammaticalising verb is a sequence favoured in discourse. She applies these insights to the creation of associated path (her term for associated

16. The previously mentioned continuous-in-motion aspectual suffix *-[əpə]*, derived from VERB-*[ə (a)pə-* ‘VERBing go’, appears to be in origin a further associated motion formation.

motion) expressions. Even if not all the sentences in the source structure had the participial form adjacent to the motion verb, one expects that, once the non-finite verb and the motion verb have been reanalysed as a grammatical construction, this reanalysis will be actualised by the positioning of the two adjacent to each other in the order that is harmonic with the Object Verb structure of the language (Harris & Campbell 1995: 192). Another outworking of the reanalysis is what Harris & Campbell (1995: 193) call the “Heir Apparent Principle”: “When the two clauses are made one by diachronic processes, the main verb governs the syntax of the reflex clause.” In the new analysis, the main verb is the one from the erstwhile subordinate clause. In ergatively aligned Australian languages it is this verb which determines the case marking: thus, a transitive verb marked for associated motion governs an ergative subject and an accusative object, regardless of the fact that the motion verb was intransitive.<sup>17</sup>

Associated motion was first described for Australian languages. The category is elaborated most fully in languages in the centre of the continent, especially those of the Arandic subgroup. However, some more restricted systems also occur. Noteworthy are two closely related languages in north-eastern Australia, Jabugay and Yidiny. There is only a two-way contrast between ‘go and do’ or ‘do while going’ and ‘come and do’ or ‘do while coming’; Jabugay has only the prior motion sense while the Yidiny forms can denote either prior or concurrent motion. The complex inflections are considered to have evolved from periphrastic expressions involving *kali-* ‘go’ and *kara-* ‘come’ (Dixon 2002: 201). Associated motion verbal inflections have recently been discovered in languages outside of Australia, with the greatest elaboration being found in Western Amazonia (Guillaume 2016).<sup>18</sup>

## 5. Summary and conclusions

We have presented three cases of morphosyntactic change, dealing with three different levels of grammatical structure: word, clause, and biclausal sentences. We have discussed these within the framework of reanalysis and actualisation. The first, involving boundary loss and suffix absorption at word level, explored the possible motivations for reanalysis and found several factors at play. The second,

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17. This was one justification for “associated” in the name of the category in Koch (1984). Another was the fact that motion may be redundant in discourse. For example, a common refrain in Kaytetye hunting texts is ‘returned to camp and ate it (after returning)’, the second verb being marked for prior motion, etymologically ‘return and eat’.

18. Guillaume and Koch (forthcoming) present further analyses of associated motion systems from languages of Africa, Asia, North and Central America, Oceania and Papua New Guinea.

dealing with change in the alignment of clauses, found a step-wise and incomplete implementation of the results of reanalysis. The third is an example of clause fusion leading to the creation of auxiliary constructions, which have further reduced to verbal inflections. The reanalysis here led not to new expressions of aspect, tense or mood but to the creation of a new category of associated motion.

While it is relatively easy, for Australian languages, to posit various reanalyses to explain the etymology of grammatical forms and constructions, the task remains to take more seriously the challenges implicit in Henning Andersen's approach to historical linguistics—to account more fully for the actual processes of diachronic change, paying attention not only to the reanalyses, but also the motivations of each and the ways their effects have been actualised during the course of time.

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# Definiteness in Germanic and Balto-Slavic

## Historical and comparative perspectives

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The present paper is concerned with overt marking of definiteness, and to a lesser extent indefiniteness, in Germanic and Balto-Slavic from a historical perspective, concentrating on the main functional or formation types as well as general aspects of the historical development of (in)definiteness marking in the Germanic, Baltic and Slavic languages. By way of conclusion, I offer some tentative areal perspectives concerning definiteness marking in Germanic and Balto-Slavic.

**Keywords:** article, definiteness, indefiniteness, Germanic, Baltic, Slavic, Sprachbund, areal patterning

### 1. Introduction

Grammatical marking of definiteness, and indefiniteness, manifests itself in three types of expressions involving affixes or grammatical function words: (i) morphological definiteness marking in adjectives, and (ii) definite and (iii) indefinite articles. All three function types are amply attested in Germanic, evolving chronologically in the order in which they are listed here. The first type is, or has been, a characteristic of Baltic and Slavic, too, whereas definite articles are only known from a small number of individual Slavic languages or dialects; indefinite articles are even more marginal. Baltic languages lack articles.

In the following, I discuss the morphological make-up of the three types, and the extent of their attestation and general aspects of their development in the languages in which they occur.

## 2. Germanic

### 2.1 Definiteness formations

In Germanic, the first type of definiteness marking is represented by the ‘weak’ declension of adjectives,<sup>1</sup> which is one of the innovations that define Germanic in contrast to the ancestral Indo-European proto-language (Ringe 2006: 169) as well as the other attested Indo-European languages, creating a functional contrast with the at first presumably unmarked and subsequently indefinite ‘strong’ declension. Definite articles are a later development, whose beginnings can be traced in the earliest written sources;<sup>2</sup> still later on, indefinite articles came into being, contrasting with the definite article.<sup>3</sup>

The origin of the weak declension of adjectives lies in Indo-European *n*-stem formations, which in Latin were used for the nominalization of masculine adjectives “to denote permanent quality” as a basis for forming proper names (Prokosch 1939: 260), implying individualization and definite reference; cf. e.g. *catus* ‘smart’ → *Catō*, *Catōnis* ‘the smart one’. In Germanic a similar regrammation of *n*-stems occurred, in the course of which the *n*-suffix underwent a functional semantic shift from denoting a stable individual quality to designating pragmatically or cognitively conditioned definiteness. Concomitantly, a change in morphological status occurred from nominal stem suffix to adjectival definiteness morpheme. Evidence for this development is provided by the fact that not only the Germanic *a/ō*-stem adjectives are turned into *n*-stems, but *ja/jō*-, *wa/wō*- and *i*-stem adjectives are provided with secondary *-n*-stem inflection as definiteness marker; e.g. Gothic *niuja* ‘the new’ from *niujis* ‘new’, *triggwa* ‘the faithful’ from *triggws* ‘faithful’, *hrainja* ‘the clean’ from *hrains* ‘clean’ (Braune & Heidermanns 2004: 121–122; the attestation

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1. Cf. e.g. Dal & Eroms (2014: 68); Mitchell (1985: 65–67).

2. Cf. Dal & Eroms (2014: 95); Szczepaniak (2009: 73–78). The functionally corresponding post-nuclear article formations of North Germanic are generally absent from the early runic inscriptions and appear during the late Viking Age, cf. Skautrup (1944: 137–138); Seip (1955: 55); Wessén (1992: 28); Lykke (2012). – In the following, I shall not be able to deal with questions pertaining to the historical interplay in Germanic between adjectival declension type and the presence or kind of determiners co-occurring with adjectives, as exemplified by Don Ringe’s general and radical contention that the choice of adjectival declension type is “an automatic consequence of the syntax” (Ringe 2006: 170). This can hardly be the whole story, though.

3. For a general survey of Germanic articles cf. Harbert (2007: 139–148).

of similarly expanded *u*-stems is doubtful). Similar *n*-stem formations are attested in Old Norse, Old High German, Old Saxon and Old English.<sup>4</sup>

The historically younger definite articles result from two different grammation processes, both of which involve demonstrative pronouns. North Germanic has a post-nominal variety, presumably resulting from a four-stage process that can be described along the lines of Hopper & Traugott's (2003:7) morpho-syntactic 'grammaticalization cline', starting with (i) a noun followed by the demonstrative *\*(h)ina-*,<sup>5</sup> (ii) which is cliticized to the preceding noun's inflectional ending, (iii) with which the demonstrative gradually merges, finally (iv) resulting in fusion of the two elements as a morphologically simplified definiteness suffix. Stage (ii) with its 'double inflection' is still easily recognizable in the majority of modern Icelandic and Faroese case and number formations, cf. e.g. Icel. nom.m.sg. *hestur-inn*, lit. horse-that 'the horse', nom.m.pl. *hestar-nir*, lit. horses-those 'the horses' (with hyphens added for morphological transparency). Stage (iv) is reached in Mainland Scandinavian, resulting in a portmanteau definiteness suffix which expresses, in addition to definiteness, the number and, mainly in the singular, gender of the noun, cf. e.g. Norw. m.sg. *hest-en* 'the horse', pl. *hest-ene* 'the horses'.

In addition, the Mainland Scandinavian languages and Faroese, but not Icelandic, possess a so-called 'adjective article' which occurs before a pre-nuclear adjective. In Norwegian, Swedish and Faroese, but not in Danish, the noun then normally carries the definiteness suffix too, yielding the North Germanic scale of basic and characteristic options in (1):<sup>6</sup>

- |        |              |            |                        |
|--------|--------------|------------|------------------------|
| (1) a. | Icel.        | Ø          | <i>gamli maður-inn</i> |
| b.     | Norw. (etc.) | <i>den</i> | <i>gamle mann-en</i>   |
| c.     | Dan.         | <i>den</i> | <i>gamle mand-Ø</i>    |
|        |              |            | 'the old man'          |

When in (1b), (1c) no adjective is present, the determiner (*den*) no longer functions as a deictically neutral article but as a deictic demonstrative; whereas both Norw.

4. In these three languages, *ja/jô*-stems *wa/wô*-stems are still recognizable beside the dominant *a/ô*-stems, but the *i*-stems and *u*-stems have been assimilated to the other stems, especially the *ja/jô*-stems, cf. Campbell (1964:267–271), and Brunner (1965:240–243); Braune & Reiffenstein (2004:223–225); Noreen (1970:295–296).

5. On the relationship between Old Norse *inn* and *hinn*, cf. e.g. Faarlund (2004:56) as well as Prokosch (1939:273).

6. For Norwegian and Swedish constructions that follow the patterns in (1a), (1c), e.g. Lundebj (1965), who, in particular, provides detailed documentation of the intricate variation between the autochthonous Norwegian type in (1b) and the Danish type in (1c) in works written by Norwegians.

*den gamle mannen* and Dan. *den gamle mand* correspond to Engl. *the old man*, Norw. *den mannen* and Dan. *den mand* correspond to Engl. *that man*.

The West Germanic language area follows a different grammation path than the predominant North Germanic one, having only pre-nuclear definite articles, which correspond structurally to the Mainland Scandinavian and Faroese secondary option required in complex NPs containing an adjective, as in (1b), (1c). Present-day West Germanic definite articles range morphologically from a fairly comprehensive number, gender and case paradigm in German (*der, die, das, ...*) to two forms in Dutch and (West) Frisian (*de, it*), and one single form in English (*the*).

Following Hopper & Traugott's (2003:7) "cline" conception of grammation processes one might want to conclude that the North Germanic definiteness suffixes represent a more advanced grammation stage than the West Germanic function words. However, such a conclusion is hardly warranted in view of the historical and typological fact that the West Germanic definite articles evolved at a time when West Germanic had Modifier–Head order in both NP and VP structures, as modern Continental Germanic still basically has.

An indefinite article has developed in all Germanic languages with the exception of Icelandic but as a rule only in the singular, e.g. Germ. *ein alter Mann – alte Männer* 'an old man – old men'.

## 2.2 Functional and morphological developments

With the marginal exception of Icelandic definite and indefinite articles are the main grammatical means of expressing (in)definiteness in the modern Germanic languages. Old Germanic languages provide clear indications that the so-called weak adjective declension type is associated with definiteness, and the strong declension type with indefiniteness. In modern Germanic languages, the morphological opposition between the two historical declension types is retained to a different extent; in English, where all adjective endings have vanished, it is completely neutralized. In Dutch and Frisian, adjectival inflexion is reduced to an opposition between *-e* and *-Ø*. In these two languages, a reflex of the definiteness–indefiniteness opposition may perhaps still be seen in cases like Dutch neuter sg. *een goed gevoel* 'a good feeling' vs *het goede gevoel* 'the good feeling' but hardly elsewhere in the present-day uses of the *e*-form of adjectives in these languages (cf. ANS 1997:400–412; Tiersma 1985:50–52).

In German, the two traditional declension types are still recognizable; there is a 'strong' declension type sporting the endings *-e, -en, -em, -er, -es*, and a 'weak' type limited to *-e* and *-en*. However, several historical and synchronic facts indicate that the ancient Germanic definite–indefinite opposition between the two declension types is neutralized. Among other things, older historical examples show strong

adjectives in definite contexts: *dieser toter Hund* (Luther) ‘this dead dog’, *in dem allerernstlichem Ernste* (Lessing) ‘in the utmost earnest’, *jene große und gute Menschen* (Herder) ‘those great and good people’ (cf. Lockwood 1968: 43–45; Dal & Eroms 2014: 68–70). In inherently definite vocative expressions, strong adjectives are always used: *Lieber Freund!* ‘Dear friend!’;<sup>7</sup> likewise after possessives and adnominal genitives: *ihr / des Kanzlers letzter Wunsch* ‘her / the prime minister’s last wish’.

In modern New High German the forms pertaining to the two historical paradigms cooperate within a remodeled, morphologically economizing system of holistic syntactic ‘group marking’ or ‘NP-inflection’ (cf. Werner 1979; Ronneberger-Sibold 1994: 117; Duden 2005: 964–969). Here, categorially distinctive NP marking<sup>8</sup> manifests itself as ‘mono-’ or ‘diflexion’. In the former case, one unambiguous morpheme suffices, cf. e.g. dat.m.sg. *dem alten Kunden* ‘the old customer’ vs gen.m.sg. *des alten Kunden* ‘the old customer’s’; cf. also gen.sg. (*die Rettung*) *allen / \*alles Goldes* ‘the salvage of all the gold’. The following NPs exhibit obligatory and optional diflexion, respectively: *des alten Mannes; dem alten Mann(e)*. The tendency towards monoflexion also manifests itself in cases like the following: (*die Ablehnung*) *beider schockierender / schockierenden Behauptungen* ‘the rejection of both shocking claims’; and, to a lesser extent approved by prescriptivists, *nach gutem altem / alten Gebrauch* ‘in accordance with good old fashion’. Coding and identification of ambiguous adjective morphology is sensitive to gender and number properties of the head noun, cf. gen./dat.f.sg. *der (alten) Frau* vs gen. pl. *der (alten) Frauen*.

All this is different in modern North Germanic (for which Norwegian examples will have to do service due to restrictions of space), where definiteness is still an inflectional category of its own in adjectives. In Mainland Scandinavian the number of forms in adjective inflection is strongly reduced in comparison with Old Norse (and present-day Icelandic and Faroese). In the most common standard systems, the strong declension type has separate forms for the common gender and neuter sg. (Ø, *-t*, respectively) and for the plural (Norw. and Dan. *-e* / Swed. *-a*); the weak declension type has uniformly *-e* in Danish and Norwegian as against Swed. *-e* in the m.sg. and *-a* in all other uses (Teleman et al. 1999: 227–230).

Still, in spite of morphological paucity, the functional differences between the two declension types are clear. Forms from the two types are never mixed, e.g. *en vennlig gammel mann* ‘a friendly old man’ vs *den vennlige gamle mannen* ‘the friendly old man’; in the former example there is gender and number agreement

7. The traditional expression *Lieben Freunde!* ‘Dear friends!’ was a mere relic before becoming obsolete.

8. I disregard here certain general morphological neutralization rules: nom./acc.f./n.sg.; nom./acc.pl.; m./f./n.pl.; dat./gen.f.sg.

in addition to indefiniteness agreement, and in the latter definiteness agreement between the adjectives, the ‘adjective article’ and the definite noun.<sup>9</sup> Also in contrast to German, the weak form is used in vocatives: *Kjære venn!* ‘Dear friend!’, and after possessives and genitives: *hennes / statsministerens vennlige ønske* ‘her / the prime minister’s friendly wish’.

### 3. Baltic

The Baltic languages possess neither definite nor indefinite articles but both Lithuanian and Latvian do have a morphological distinction between ‘long-forms’ and ‘short-forms’ of adjectives,<sup>10</sup> where the long-forms are functionally parallel to the predecessors of the Germanic definite ‘weak’ adjectives. Historically, the endings of the long-forms derive from the cliticization of a form of the ancient pronominal stem *\*i/e-* (Lunt 1974: 52) to the inflected short-form of the adjective. The long-forms serve the purpose of indicating the definiteness of the NP of which the adjective forms a part (Eckert et al. 1994: 138, 295). In Lithuanian the corresponding personal pronoun *jis* ‘he’, *ji* ‘she’ still exists and the modern Lithuanian long-forms are in general morphologically transparent, cf. (2) (with hyphens added):

- (2) a. *gėras žmōgus* ‘a good husband’, *gerà žmonà* ‘a good wife’  
 b. *geràs-is žmōgus* ‘the good husband’, *geró-ji žmonà* ‘the good wife’

In contrast to Lithuanian, the functionally corresponding Latvian long-forms are synchronically opaque, due to the fact that modern Latvian third person personal pronouns referring to humans are based on another stem *vin-*, cf. (3):

- (3) a. *labs brālis* ‘a good brother’, *laba māte* ‘a good mother’  
 b. *labais brālis* ‘the good brother’, *labā māte* ‘the good mother’

This should, however, not be taken to imply total functional convergence of Germanic definite articles and Baltic definite adjectives. According to Ambrasas et al. (1997: 144, 146), in Lithuanian the “distinction between definite and simple adjectives is often neutralized”; besides, in southern dialects “definite adjectives are used only for emphatic purposes”, implying that the frequency of occurrence of adjectival long-forms is at any rate lower than that of definite articles in present-day

9. One may note that in Icel. *gamli maðurinn* ‘the old man’ definiteness is expressed initially in the NP by the adjective without the support of an article.

10. This distinction can be observed, albeit marginally, in sources of extinct Old Prussian as well (Mathiassen 2010: 40).

Germanic languages. It also appears that Lithuanian long-form adjectives are often used for more special purposes, as an expression of intensity or contrast to another quality, or individual or characteristic uniqueness (Ambrazas et al. 1997: 143, 145).<sup>11</sup> If definiteness can be taken to be the original semantic function of long-forms, as is commonly assumed, the latter uses may seem to point to processes of pragmaticization beyond and away from basic definite referentiality.

#### 4. Slavic

Definite and indefinite articles are absent from the greater part of the Slavic area, as they are from Baltic. Definite articles do, however, exist in Bulgarian and Macedonian (Sandfeld 1926: 96–99; Entwistle & Morison 1964: 390–391; Comrie & Corbett (eds.) 1993: 202, 261, 264), where they are cliticized to the first constituent of a definite NP, be it a noun (4b) or an adjective or numeral (4c) (Macedonian examples, hyphens added):

- (4) a. *vojna* ‘war’  
 b. *vojna-ta* ‘the war’  
 c. *prva-ta svetska vojna* ‘the First World War’

This particular South Slavic development is to be seen in the context of Balkan ‘Sprachbund’ influence from neighbouring Albanian and Rumanian (Sandfeld 1926; Entwistle & Morison 1964: 247).

It is further surmised that the numeral ‘one’ may assume indefinite article functions in Macedonian and Ukrainian (Comrie & Corbett (eds.) 1993: 261, 268; 964). In Slovene, too, certain developments towards definite as well as indefinite articles are to be observed (Comrie & Corbett (eds.) 1993: 410), cf. (5):

- (5) a. *en nŕv pŕs* ‘a new dog’  
 b. *ta nŕvi pŕs* ‘the new dog’

Such constructions are, however, “not encouraged in the written norm” (Comrie & Corbett (eds.) 1993: 411). Being located outside the Balkan Sprachbund core area, these Slovene developments are likely to be due to German influence.

Definite article formations in *-to*, *-ta*, *-te* morphologically similar to the South Slavic ones, and based on the same demonstrative, are attested in North Russian

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11. Thanks to Klaus Geyer, Odense, for drawing my attention to the Lithuanian–Germanic contrasts.



dialects (Entwistle & Morison 1964:247), too.<sup>12</sup> It is perhaps not wholly out of place to wonder whether these North Russian definite articles, like their South Slavic counterparts, might be due to linguistic contact with another language or language family. As we are here dealing with a large area of Russia that once had a widely dispersed Finno-Ugric and Saami population, reference may be made to Jurij Kusmenkos hypothesis that the North Germanic enclitic definite article may be modeled on a formerly common Finno-Ugric and Saami post-nuclear possessive suffix (“possessive Deklination”; Kusmenko 2008:87–124, in particular 109–114).<sup>13</sup> However, Kusmenko does not take into account the post-nuclear position of possessives in East-Germanic Gothic, see Streitberg (1920:186), cf. e.g. the following examples from the Gothic Lord’s Prayer: *atta unsar*, lit. father our ‘our Father’; *namo þein*, lit. name your ‘your name’; *þiudinassus þeins*, lit. realm your ‘your realm’, etc. Obviously, there is no reason to doubt that the very common modern Norwegian possessive constructions like *den gamle bilen min*, lit. the old-DEF car-DEF my ‘my old car’ (which are found in Swedish, too; Wessén 1992:37) represent an ancient Germanic syntactic legacy, with a more recent North Germanic definiteness suffix added to the noun.

In contrast to the regional developments mentioned so far, all of Slavic participates in the large historical area, also encompassing Baltic, that has definite long-forms of adjectives besides the short-forms from which they are derived by the addition of an ancient pronoun (Lunt 1974:52).

Old Church Slavonic long-forms were morphologically transparent in basically the same way as those of modern Lithuanian and the functional difference between short- and long-forms corresponds to modern Baltic. Consider for instance the following Old Church Slavonic examples (6)–(7) (adapted from Lunt 1974:125):

- (6) a. *въ peštъ ognjъnъ* (Matthew 13.50)  
 in(to) furnace fiery  
 ‘into a fiery furnace’
- b. *въ геонъ ognjъnъ-ѣ* (Mark 9.47)  
 in(to) hell fiery-THE  
 ‘into the fiery hell’

12. Entwistle and Morison also note morphological “aberrations” from the demonstrative paradigm, indicative of incipient grammation, as well as tendencies towards functional pragmaticization reminiscent of those mentioned above in connection with Lithuanian dialects.

13. Kusmenko’s hypothesis is to be seen in the context of several other proposals he makes for Saami influence on North Germanic. His hypothesis implies that a one-time northern article Sprachbund covering large parts of present-day north-western Russia, northern Sweden and large parts of Norway emerges as a possibility. It is cited with approval by Tove Bull in Bull et al. (2018:449–450), but neither Kusmenko nor Bull et al. consider the Gothic facts.

- (7) a. *privěšę kō njemu slěpa* (Mark 8.22)  
 brought to him blind  
 ‘they brought a blind man to him’
- b. *i imō slěpa-ego za rōkō* (Mark 8.23)  
 and taking blind-THE by hand  
 ‘and taking the blind man by the hand’

In (6b) and (7b), the long-form endings *-jō* in *ognjbnōjō* and *-ego* in *slěpaego* are pronominal endings for the feminine accusative and masculine genitive singular, respectively, and indicate definiteness, in clear contrast to the simple indefinite short-forms in (6a) and (7a).

Contrary to the present-day Baltic situation, no modern Slavic language shows a consistent morphological and functional opposition between short- and long-forms of adjectives.<sup>14</sup> Bulgarian and Macedonian have simply done away with the morphological difference altogether and the surviving forms, with the minor, but not untypical, exception of the masculine singular, appear to reflect historical short-forms. In the other languages, descendants of the long-forms have established themselves as the normal adjectival declension type. Generally, short-forms are residually available only in a more or less restricted number of adjectives, or merely vestigial. They are most often morphologically defective, appearing in the nominative only (Czech, Slovak, Polish, extinct Polabian, Russian, Belorussian), or even being restricted to the masculine nominative singular (Polish; Slovenian, with a few exceptions; Ukrainian). Syntactically, short-forms typically occur in predicative position.

In Polish and Russian, nom./acc.n.sg. short-forms are preserved as impersonal predicates, in addition to being used adverbially. In some languages, they are characteristic of a special kind of adjectival words, such as possessive adjectives (Serbo-Croat, Slovene, Czech, Slovak, Kashubian, Belorussian, Ukrainian); or passive participles (in Czech and Serbo-Croat as a consistent alternative to long forms). Serbo-Croat seems to have more case forms in the short-form paradigm than do the other languages and to use such forms more freely; but ordinal numerals and certain derived adjectives appear as long-forms only.

Obviously, the restrictedness, or wholesale loss, of the morphological short-vs long-form opposition in modern Slavic languages indicates that the semantic

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14. The information on adjectival declension in the individual languages summarized here is in the main gleaned from the presentations in Comrie & Corbett (1993:207 (Bulgarian), 266 (Macedonian), 327–329 (Serbo-Croat), 399 and 410–412 (Slovene), 475–478 (Czech), 548–551 (Slovak), 627–631 (Sorbian), 704–705 (Polish), 774 (Kashubian), 812–813 (Polabian, extinct), 845–846 (Russian), 908–910 (Belorussian), 962–963 (Ukrainian)).

indefinite vs definite opposition is weakened or even neutralized.<sup>15</sup> This is indeed the case. In most modern Slavic languages that to a varying extent preserve short-forms, a semantic definite–indefinite opposition between long- and short-forms no longer exists. In modern Serbo-Croat and Slovene, however, a definite–indefinite contrast manifests itself residually (even though long-forms are for the most part used interchangeably with the short-forms still in existence).<sup>16</sup> Cf. for instance Serbo-Croat (8) and Slovene (9) (Comrie & Corbett 1993:327; 410):

- (8) a. *nŏv grâd* ‘a new city’  
 b. *nŏvī grâd* ‘the new city’
- (9) a. *nŏv pës* ‘a new dog’  
 b. *nóvi pës* ‘the new dog’

In a way, the enclitic use of the article in Bulgarian and Macedonian adjectives in cases like (4c) can be said to introduce a new type of long-form definite adjectives on an NP-combinatorial basis.

## 5. Conclusion: Areal patterning of definiteness in Germanic and Balto-Slavic

During the transitional period from Indo-European to Germanic, adjectival *n*-stem formations developed that came to indicate definiteness, as one of the characteristic features distinguishing Germanic from the other branches of Indo-European. Several hundred years later, definiteness began to establish itself as a category with Germanic nouns through a universally common process of grammation of demonstratives. This later innovation evolved along two different morphological paths: in North Germanic, a definiteness suffix to the noun developed; in West Germanic, on the other hand, a pre-nuclear determiner arose. Probably close in time to the Germanic grammation of demonstratives as definite articles, definiteness-indicating forms of adjectives evolved in Balto-Slavic through cliticization of a personal pronoun, as a kind of belated functional parallel to the far older adjectival *n*-stem adjectives of early Germanic.

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15. With regard to Russian, Entwistle & Morison (1964:247) consider the emergence of enclitic definite articles in North Russian dialects as compensation for the loss of “the demonstrative sense of the definite declension [of adjectives]”.

16. Within the present-day Serbo-Croat area, the indefinite vs definite distinction is probably best upheld in certain Bosnian dialects (Svein Mønnesland, p.c.).

From a purely ‘processual’, or constructional, point of view, this Balto-Slavic cliticization development is similar in kind, first, to the early Germanic intrusion of pronominal endings into an increasing number of forms of the strong, or indefinite, adjectival declension type that is found in all ancient Germanic languages from Gothic onwards.<sup>17</sup> In contrast to Balto-Slavic, the Germanic pronominal endings in question do not express definiteness, a task performed in Germanic by the *n*-stem adjectives, but rather serve to strengthen strong indefinite adjectives morphologically in a way that renders their inflection increasingly distinct from that of nouns. In this case, the Balto-Slavic and Germanic developments have the same word-class basis but differ functionally.

Several hundred years later, similar cliticization processes occur in North Germanic in connection with the emergence of definiteness marking in North Germanic nouns and in certain North Russian and South Slavic areas. In North Germanic and North Russian, nouns are the targets of the cliticization, in the South Slavic case, cliticization operates on a ‘first word’ basis that effectively marks definiteness suffixally at the beginning of NPs. These Germanic and Slavic cliticization developments have a partly different word-class basis than the Balto-Slavic definite long-forms but are functionally akin.

All Germanic languages have definite, and all but Icelandic have indefinite, articles; whereas, in Balto-Slavic, both definite, and in particular indefinite, articles are rather fringe phenomena, whose roots may be in part sought in linguistic contact situations, convincingly so in the southern Balkan case, and perhaps less convincingly in the northern Russian case.

There may be a more general areal point to be made in connection with the development of Germanic and Balto-Slavic definiteness marking in adjectives. In a northwestern area, comprising North Germanic and Baltic, an opposition between two morphologically and functionally separate adjective declension types still exists. In a southern and eastern area consisting of historical West Germanic and Slavic, on the other hand, the morphological and functional opposition between the two declension types has to a varying, but large extent been lost.

In Slavic, the semantic definite vs indefinite opposition in adjectives was with few and partly uncertain exceptions neutralized, whereby the formerly definite long-forms established themselves as the normal, unmarked type morphologically in the majority of Slavic languages; this is formally reminiscent of the way ‘strong’ adjectives were ‘strengthened’ by the introduction of pronominal endings in early Germanic. In the process, the Slavic short-forms were either lost altogether or came to serve more restricted purposes.

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17. Cf. e.g. Prokosch (1939:261); Braune & Heidermanns (2004:115); Brunner (1965:237); Braune & Reiffenstein (2004:220); Noreen (1970:290).

In West Germanic adjectives, the strong vs weak opposition has suffered a similar fate: English has lost all endings and, concomitantly, any possibility of functional import; and in Dutch and Frisian the definiteness opposition is merely vestigial and by no means systematic. In German, the two adjective declensions persist as recognizable morphological paradigms that have, however, merged functionally into a purely morpho-syntactic system for holistic NP marking; the definite–indefinite opposition is coded analytically by pre-nuclear articles. The areal distribution of the Germanic and Balto-Slavic developments in question is illustrated in (10) (omitting regional article developments and retention of definiteness in adjectives in minor Slavic areas):

(10) *Definiteness marking in modern Germanic and Balto-Slavic*

N			
	N-W North Germanic		N-E Baltic
	• definite article suffix		–
-----			
	• retention of definiteness opposition in adjectives		
W	S-W West Germanic	S-E Slavic	E
	• definite article word	–	
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	• neutralization of definiteness opposition in adjectives		
S			

In (10), two large-scale contrasts are discernible: a West vs East contrast with regard to development or non-development of definite (and indefinite) articles; and a North vs South contrast concerning retention or loss of definiteness (and by implication, indefiniteness) in adjectives. Whether in particular the latter contrast represents a linguistic contact scenario remains a topic for further research.

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PART IV

# Actualization





# Diatopy and frequency as indicators of spread Accentuation in Bulgarian dialects

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Diatopy (the geographical distribution of linguistic differentiation) gives important clues about diachrony (the direction and spread of language change). Here I apply these concepts to the study of accentual phenomena in Bulgarian dialects, focusing on the accentuation of phrases including clitic forms. Methodologically, my study is innovative because it does not work with isoglosses of the normal, binary type (which mark the presence vs. absence of a feature). Rather, I utilize a database consisting of large stretches of conversation, recorded in the field by myself and my colleagues over a 27-year period, to construct indices of relative frequency of occurrence of the pattern in question. The resulting isoglosses allow new conclusions to be drawn about accentual patterns in Bulgarian dialects.

**Keywords:** accentuation, Balkan Slavic, Bulgarian dialectology

## 1. Introduction

The field of historical linguistics has been immeasurably strengthened by the contributions of Henning Andersen throughout his long and distinguished career. I am proud to have been an early student of his, and happy to be able now to offer the following brief notes in his honor.

The fact that the positioning of isoglosses on a synchronic dialectal map can frequently be correlated with directionality of change, and the utilization of this insight in diachronic studies, was not first noted by Andersen (see his survey of the development of the concept in Andersen 1988: 39). However, his is the work that has taken these ideas in such rich and profitable directions (see especially Andersen 1969, 1988). My own work in this area, on data of accentual systems in Balkan Slavic dialectology (Alexander 1983), was directly inspired both by Andersen and by the work of my field mentor, Prof. Pavle Ivić (see especially Ivić 1958, 1967).

Such analyses depend crucially on reliably drawn isogloss maps, which themselves must be based on a sufficiently detailed set of data. There are also two other significant factors to such work, both of which are taken for granted when working with dialect maps constructed in the traditional manner. The first is that the isoglosses themselves are binary in nature: essentially, they distinguish an area where feature A is present from one where that same feature is absent. The second is that the particular ‘features’ depicted by this means, however they are defined, represent elements which are at some level distinctive within the linguistic systems of the dialects represented.

I mention these two factors because they define the way in which my current work on Balkan Slavic dialectology is innovative. The first difference in my work is that the phenomenon I am tracking is not “systemic” in the same way as are facts of phonology or morphology; and the second is that the “isoglosses” I am able to draw are not binary in nature but rather represent relative frequencies of occurrence. On the surface, these two facts might seem to militate against the possibility of any meaningful diachronic interpretation. As I attempt to show, however, this method not only gives a much more accurate picture of the synchronic situation of the phenomenon in question, but also allows more insight into directions of change than has previously been possible.

## 2. The data

### 2.1 Sources

The focus of study here is an accentual pattern found primarily in southwestern Bulgaria, extending also into areas of eastern Macedonia and northern Greece. Known as “double accent”, it consists of two or more primary accents occurring within a phonological word of three or more syllables whose lexical accent is followed by least two more syllables. When double accent is present, the sequence is heard with a second accent (and, if the word is long enough, sometimes also a third), always in an alternating rhythm. The rhythm is usually trochaic, but sometimes it can be iambic. In most (though not all) instances, both (or all three) accents are of equal strength.

Since double accent is facultative, it cannot be described in systemic, distinctive terms. However, because it is so striking to listeners, who often regard it as the most “typical” feature of the dialect region in question, it is frequently included in descriptions of that dialect’s phonological system. Yet all one can truthfully say is that such an accentual pattern “tends” to occur in words of a certain length. Furthermore the “words” in which it occurs are of different natures: sometimes

they are individual lexical words, and sometimes they are sequences of such words and dependent clitics.

The basic accentual patterns grouped under the rubric “double accent” are illustrated in (1)–(9) below. Before proceeding with discussion of double accent itself, however, it is necessary to describe the source of the data used in this study, and from which the majority of examples in this study are quoted. This is the electronic resource entitled “Bulgarian Dialectology as Living Tradition” (<http://bulgariandialectology.org/>, henceforth referred to as BDLT), which consists of 181 excerpts from a corpus of field recordings made in 68 different Bulgarian villages by me and my colleagues over a 27 year period (1986–2013).<sup>1</sup> Each excerpt is presented both as an audio file and in transcription and translation, and is currently annotated so as to allow data searches at three different levels. Each individual excerpt is divided into lines for ease of data retrieval, and each line of speech by a dialect speaker is furnished with a time code, allowing one to locate the relevant point in the audio file. All examples quoted herein are identified by excerpt name, line, and time code, and are furnished with the full line context and translation as found on the BDLT website. Individual excerpts (called “texts” on the website), with accompanying audio files, can be accessed easily from the Contents page of the website; one can thus, using the line and time code cues given with the cited examples, listen to any of these examples in its original recorded context.

For the purposes of this study, whose first goal is to obtain a true picture of the full geographical distribution of double accent, the BDLT data source is far superior than anything heretofore provided by published data, either on the maps of the *Bulgarian Dialect Atlas* (BDA, covering all of Bulgaria, but mapping only information about individual words recorded in response to a unified questionnaire), or in individualized studies of particular areas. One immediately obvious advantage is that the data are verifiable: anyone can listen to the original field recordings, and can thus hear any one cited form in its original spoken context, recorded as it occurred within natural, non-elicited speech. Another is that the data set makes it possible to track the presence of any one phenomenon over the entire expanse of Bulgarian dialects: this is particularly desirable in the case of double accent, about which it has been assumed until now that it is characteristic only of one particular area, with the result that published data are readily available only for that area. A third advantage lies in the fact that the database includes large segments of natural running speech for each of the 68 villages visited. This has made it possible to verify not only that double accent is indeed facultative, but also that the degree of probability of its occurrence varies from region to region.

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1. The site has been slightly expanded since the data for this study were compiled. The site now includes 184 excerpts from 69 villages.

## 2.2. Description

Double accent can occur on trisyllables, as in (1)–(2), though this is less common. The most frequent pattern is a tetrasyllabic word, either lexical, as in (3)–(4), or phonological (a lexical word whose accentual domain is extended through the presence of one or more following clitics), as in (5).<sup>2</sup> But it is also found in words of more than four syllables, either longer lexical words, as in (6)–(7), or phonological words, as in (8)–(9). All these patterns of double accent are attested, though those seen in (2) and (6), with the added accent on open final syllable, are relatively rare; this may be partly due to the fact that such instances very frequently occur before a pause, even if only a slight one, which makes them harder to distinguish from other intonational cues. By far the most frequently occurring type is with the added accent on a penultimate syllable, though added accents on a final closed syllable, as in (1), are also common.

- (1) *nèkugàš*  
at.one.time [adv]  
*fudùlč'i nèkugàš zə b̄r̄z̄u də stàne dukātu guri peštà*  
(Dolno Draglište 3: 10 (0: 25))  
*Back then* [we made] “fudulchi” because they bake fast, while the oven is heating up.
- (2) *ùbavù*  
nicely [adv]  
*tùra i dvè tr̄i jàjca zab̄rkəm izmesà gu təkà ùbavù* (Bansko 6 (0: 11))  
and add two or three eggs. I mix the dough and knead it up *nice*,
- (3) *lèbuvètu*  
breads-the  
*lèbuvètu ne sà kətu t̄ijə m̄alèčki unijə sə gulèmi* (Babjak 1: 25 (1: 00))  
[loaves] of bread. They’re not like these little ones. Those are big –
- (4) *zimašèa*  
they.were.taking  
*eli pa zimašèa togàva pa narjət mnògo v̄l̄na* (Gorna Krušica 3: 32 (0: 32))  
because they (the state) *were taking* for their quota a lot of wool.

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2. Technically, the definite forms seen in (3) and (7)–(9) are also phonological words, given that the definite article also shares some of the characteristics of a clitic. The fact that the definite article is now written together with the headword, and that definite forms are now considered to be part of that word’s paradigm, puts such words somewhere between ‘lexical’ and ‘phonological’.

- (5) *vèemè gu*  
 we.winnow it  
*vèemè gu pòsle s lupàtə i se udvèvə žítutu* (Babjak 2: 11 (0: 30))  
 After that, *we winnow it* with a shovel. You toss the grain up in the air,
- (6) *kǎrvavicítè*  
 blood.sausages-the  
*odèlno zejré si ima za kǎrvavicítè ə ribicite* (Bansko 182 (7: 06))  
 There's separate sorts of stuffing for *the blood sausages*. The parts of meat...
- (7) *bujadisuvànetò e*  
 dyeing-def is  
*bujadisuvànetò e pàsoš Vèligràt* (Sveta Petka 1: 36 (1: 17))  
 For *dyeing* there's Pasosh [in] Velingrad.
- (8) *dədème si gu*  
 we.give REFL it  
*dədème\_sì\_gu pà tija pèeje igra:* (Babjak 3: 21 (1: 01))  
 and *we give it (= the flowerpot)* back [to them], and then they sing and dance,
- (9) *dètencètu si mi*  
 small.child-the REFL to.me  
*i dètencètu si mi uzdravè tàə mòma* (Kruševò 2: 35 (1: 04))  
 and *my child* got well, [now she's] this young woman.

### 2.3 Preparation for analysis

Maps in Bulgarian dialect atlases are ill equipped to present such dialectal facts, for several reasons. First, because the maps of the extensive BDA were constructed on the basis of single words representing certain grammatical categories (sometimes recorded as single-word answers, and other times excerpted from stretches of recorded material), they can depict the presence or absence of this accentual pattern only in lexical words; the maps give no information about its presence in larger phonological words. In fact, since the BDA maps about double accent utilized only answers to questions about imperative plural and plural definite nouns, they would have included only examples (3) and (6) from the above list. Second, the binary nature of isoglosses means that the map can state only whether double accent is present or absent in any one dialect. In the case of a facultative phenomenon, however, a symbol marking its “presence” simply indicates that such a pattern was recorded in at least one of the questionnaire items; it says nothing about the degree to which this accentual pattern is present in the dialect as a general phenomenon.

By contrast, this study is organized so as to cover the broader set of frames in which double accent occurs (both in lexical and in phonological words), and

to describe its occurrence not in binary terms but rather in probabilistic terms (relative frequencies of occurrence). The resulting isoglosses give a much more accurate synchronic description of the actual situation; and although they do not immediately answer the many questions about the source of double accent, they at least allow of some diachronic speculation. The ability to analyze the data in this manner was due to the fact that the BDLT database includes long stretches of natural conversation, which in turn made possible the calculation, for each individual speech sample, of the ratio between the number of times double accent could have occurred and the number of times it actually did occur. Furthermore, the fact that BDLT includes such conversational sequences from villages throughout Bulgaria allowed these several ratios to be plotted on a map in the form of non-binary isoglosses.

Calculating these ratios involved making a number of decisions, along two sets of parameters. In the first instance, it was necessary to decide which of the forms within the speech stream as recorded were actually uttered with double accent (and not some other combination of prosodic signals); and in the second instance it was necessary to determine what the precise frame was in which double accent might most plausibly and consistently be expected to occur. With respect to the first set of decisions, it was sobering to see how much time – and heated discussion among dialectologists – was necessary to produce agreement on the actual composition of the data set. All the members of our team knew that ‘accent’ in Bulgarian is not a simple stress accent but rather a combination of many different signals, but we were not prepared to encounter as many mixed signals as we did. It had been shown already by Bulgarian phoneticians that “accent” could be manifested not only by loudness but also by vowel length and pitch, indeed usually by a combination of the three), but also even sometimes by the absence of vowel reduction, in a frame where reduction is otherwise expected (Tilkov & Bojadžiev 1978:9–10). We found, in addition to these cues, that “accent” could be manifested also by softening of the preceding consonant (in a dialect where such softening is not the norm), or by the voiceless pronunciation of a preceding vowel.

The combination of all these factors (plus the need to distinguish word accent from phrase-final intonation rise) required us to spend a great deal of time in constructing the data set; at one point we also resorted to a listening test among non-dialectologist native speakers about whom we felt their ‘ear’ was acute. Although in the end we were satisfied that our data set was sound, the overall experience led us to wonder about the decisions made by earlier scholars about their data, decisions presumably made on a single hearing only and without the possibility of re-listening; and to wonder to what extent the current perception of double accent among Bulgarian dialectologists is due to conscious decisions made about individual data items, and to what extent it simply results from the acceptance of a

common pattern whose frequent occurrence was expected in advance. This situation is not unique, of course: any time scientists observe natural phenomena they must make decisions of categorization, and it is always necessary to remember that these categories are not inherent as such in the real world but are rather scientific constructs, albeit made with knowledge, forethought and discretion. In this light it is interesting to reflect upon the differences between results of the current study, and statements by Bulgarian dialectologists that double accent is a “consistent” and “obligatory” part of the dialectal phonology of certain regions (Ivanov 1977: 140).<sup>3</sup>

Once the data set of unambiguous instances of double accent was determined, it was easier to decide what exactly constituted the “conditioning frame” for double accent. Since the vast majority of instances that occurred in the data set consisted of an etymologically correct accent followed by another accent two syllables later, we decided to make this the basic frame: a lexical or phonological word (word plus enclitics) with at least two syllables following the basic word accent if the second syllable was closed, and at least three syllables following it otherwise.

Tabulations were then made for the material from each village, juxtaposing the number of occurrences of double accent against by the number of possible conditioning frames, with the ratio in each case serving as the index of “double accent probability” for that village. These ratios were then plotted on the map, and “isoglosses” were drawn marking significant similarities and differences. It would have been ideal, of course, to have made these judgments on the basis of texts of equal length from each village, but this was not possible. Conditions simply did not allow longer recordings in certain places, and even when longer recordings were made, the material within them did not always yield sufficiently representative and well-formed texts. Overall, however, the BDLT material provides a good enough sampling to give meaningful answers to these questions.

## 2.4 Geographical distribution

Once all the ratios were laid out on a map of Bulgaria, three things immediately stood out. The first was that nowhere did double accent occur in every possible frame: this is clear proof that it is nowhere a systemic part of any dialect’s grammar. The second was that although the highest frequency ratios did occur in the region where double accent is generally considered to be a characteristic of the local dialect, there was also a notable gradation at the peripheries of this region. The third

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3. I can attest to the fact that as of the late 1970s (the time when I first began to be interested in these issues) Bulgarian dialectologists accepted without question the double accent data sets as reported to that point, and considered any questions about the nature, origin and distribution of double accent to have been fully solved.





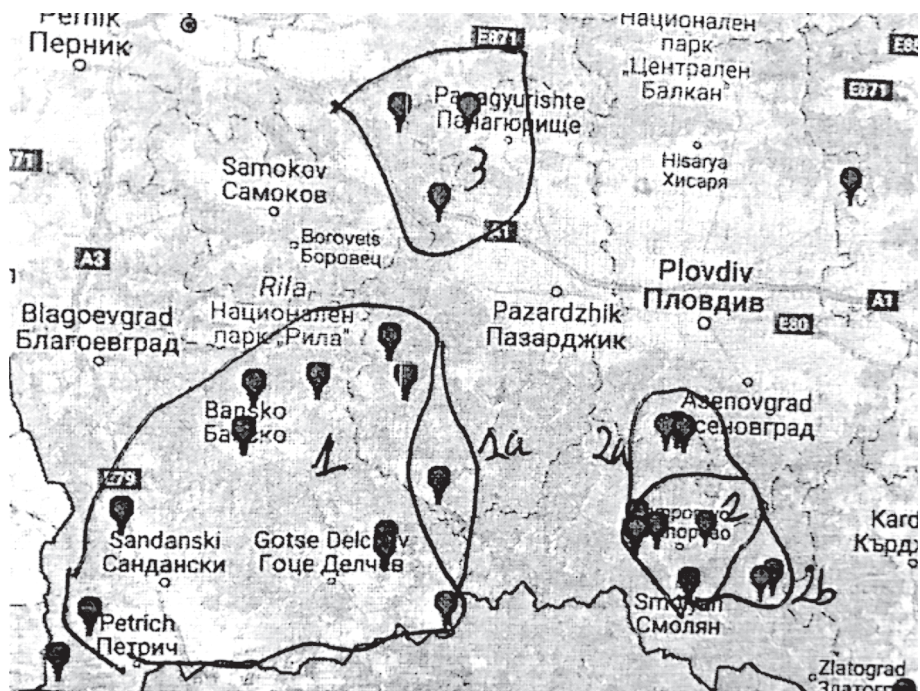
Map 1. Distribution of double accent throughout Bulgaria

was that there is proof that double accent exists, though with considerably lower frequency ratios, in regions of Bulgaria where it has never been reported before.

Map 1 shows the distribution of double accent throughout Bulgaria. The individual tabs on the map represent the 40 villages (out of 68 total investigated) where double accent was heard at least once, and the several areas speak to its relative frequency. Area 1, in southwestern Bulgaria, is the region where double accent is generally considered to be a characteristic of the dialect; areas 2 and 3 are clearly adjacent to it (the separate circles on the map do not represent discontinuity; they simply serve to identify better the areas of gradation). The numbers 4 and 5 identify individual locations where double accent was indisputably heard, but for which it is clear that it is not “characteristic” of the dialect in any way. Double accent in the villages bearing the number 4 was of the normal kind, appearing in one of the expected frames, but the double accent in villages bearing the number 5 was curious in that it appeared to be lexically marked: in five of the villages it appeared only on imperfect tense forms of the verb *rabot’a* ‘work’,<sup>4</sup> and in the other two it appeared only on the ethnonym *bŭlgarin* ‘Bulgarian [person]’.<sup>5</sup>

4. These five villages are Bangejci, Golica, Huhla, Izgrev (Varna region), and Stančov Han.

5. These two villages are Kralevo and Šumnatica.



Map 2. Distribution of double accent in the areas of greatest concentration

Map 2 shows the areas of greatest concentration in more detail, and the chart that follows gives the ratios which determined the isoglosses on the map. Area 1, obviously the area of greatest concentration (both geographically and in terms of probability of occurrence) contains 10 villages. Taken as a whole, the recorded material in all 10 villages contained 307 “conditioning frames” (speech sequences where double accent might have been expected to occur), and double accent actually did occur in 264 of these, for an overall probability ratio of 86%.<sup>6</sup> The village of Sürnica, located well within this area with respect to all other dialectal traits, showed a surprisingly low ratio of probability (32 occurrences out of 61 possible, for a ratio of 52%). The expanded area 1a – now including this eleventh village – then receives the overall probability ratio of 80%.

The presentation of area 2 on the map follows a similar format: the region of greatest concentration bears the simple number 2; the area is then expanded to include information from other villages that are in the same dialectal group but for which the ratios are significantly smaller. Thus, the combined recorded material

6. The villages in this group are Babjak, Bansko, Dolno Draglišhte, Godeševo, Gorna Krušica, Graševo, Kovačevo, Kruševo, Oreše, and Sveta Petka.

**Table 1.** Frequency counts of double accent in areas of greatest concentration

Area	villages	actual / possible	ratio
1	10	264 / 307	86%
1a	11	296 / 368	80%
2	6	60 / 164	37%
2a	9	73 / 247	30%
2b	11	86 / 349	25%
3a	3	13 / 83	16%

from the six villages in the core of area 2 contained 164 conditioning frames, and 60 occurrences of double accent, for a ratio of 37%.<sup>7</sup> When this area is expanded as 2a by the addition of three villages to the immediate north, the ratio falls to 30%,<sup>8</sup> and when it is further expanded as 2b to include two villages to the east, the ratio falls further to 25%.<sup>9</sup>

Area 3, located directly to the north of the region of greatest concentration, shows a much lower ratio of occurrence than either of the other two, yet greater than in the outlying areas: the combined number of conditioning frames in the material from three villages here is 83, with 13 occurrences of double accent, for an overall frequency of 16%.<sup>10</sup>

It is interesting to compare these results with the BDA map devoted to double accent (BDA vol. III, map 153). With respect to area 1a, the BDA map includes information for only eight of the 11 villages, and its binary representation states the double accent is absent in three of these eight.<sup>11</sup> Even more striking, the same map includes information for five of the six villages in area 2, and the binary representation states that double accent is absent in all of them. These comparisons dramatically demonstrate the difference between the results obtained from questionnaire work over a broad area, where recorded responses included only single words in the vast majority of cases, and results obtained from analysis of long stretches of natural speech. The questionnaire method is undeniably valuable for many areas of investigation, and dialect atlases are invaluable repositories of information. Yet for a topic such as this, where factors of speech rhythm are significant, and which

7. These six villages are Čokmanovo, Gela, Momčilovci, Stikül, Stojkite, and Široka Lūka.

8. These three villages are Hvojna, Malevo (Asenovgrad region), and Pavelsko.

9. These two villages are Leštak and Vürbina.

10. These three villages are Belica, Gorno Vüršilo, and Oborište

11. According to the BDA map, double accent is absent in Kovačevo, Oreše, and Šürnica; information is lacking for Graševo, Kruševo, and Sveta Petka.

cannot be properly described without taking clitic sequences into account, the conversational method is clearly superior.<sup>12</sup>

## 2.5 A second data set: “Additional accentuation”

Before turning to the question of what these isogloss patterns tell us about language change, I should like to introduce a related set of data. Here too we find a facultative sequence of two accents in a phrasal unit including both a lexical word and a clitic. In contrast to double accent, however, which has been extensively discussed in the literature, this accentual pattern has been ignored by scholarship; the only published mention of it is in a report by the field team whose recordings form the corpus of BDLT (Zhobov et al. 2004). In an attempt to distinguish this accentual pattern from the better-known double accent, the team at that point adopted the provisional name “additional accent” for this pattern.

On the surface, this additional-accent pattern looks similar to double accent, except that whereas in double accent the “new” (non-etymological) accent occurs after the original one, in this pattern it occurs before it. Here are examples:

- (10) *kət si gi gl'èdaš*  
 when REFL them you.look  
*kət si gi gl'èdaš ùbafkì tə i nə tɛp si e dràč'ku* (Kruševò 2: 46 (1: 25))  
 When you raise up beautiful [children] it is a very precious thing to you.
- (11) *što sè razrèžuva*  
 that REFL one.slices  
*tovà gu vikamè gu smènka tova što sè razrèžuva* (Bansko 172 (6: 40))  
 We call it “smenka” – that part *that you cut out* ...
- (12) *ku jà dadète*  
 if it you.give  
*še vi tərəd dólnatə rìzə dólnatə rìzə ku jà dadète* (Oreše 47 (2: 14))  
 You'll be asked for your lower garment. And *if you give over* your lower garment<sup>13</sup>

12. Of the 296 examples of double accent recorded within the full area 1a, 153, or 52%, were in phonological words, meaning that the following clitic was necessary to determine the fact of double accent. The figures for the full area 2b (46 out of 77, or 60%) are more or less comparable.

13. The clitic pronoun object which bears accent is reduplicative; only the noun object preceding it appears in the translation.

- (13) *žə vi gu kàža*  
 future to.you it I.show  
*pesnupiseć imame nie tuka vaf mahalǝsa ža vi gu kàža* (Stikül 3: 116 (6:06))  
 We have someone here in the village quarter who writes down songs. *I'll show [it] to you* –

The similarities are deceptive, however; a closer look at the facts shows that this pattern is quite different. For one thing, double accent almost always occurs on alternate syllables. The examples above, in which accent also occurs on alternate syllables, are in the minority, however. Of the 67 examples recorded by the BDLT team, only 26, or 39%, occur with alternating rhythm. More frequently, one finds examples such as the following, where there is either no intervening syllable, as in (14), or more than one, as in (15):

- (14) *što sè trieme*  
 that REFL we.rub  
*i tija što sè trieme* (Gorna Krušica 1:51 (2:52))  
 those [things] *that we dry ourselves* with
- (15) *kət gi putklədýt*  
 when them they.put  
*nəlivə sə mǎlku vudǝ də n' zəgur'ýt kət gi putklədýt* (Prestoj 16 (0:36))  
 You pour in a bit of water so they don't burn *when you put them on the fire*.

Furthermore, whereas double accent can occur any time the right number of syllables is present, the “additional accent” pattern is syntactically conditioned: it is triggered by a preceding phrase-initial particle, usually a conjunction. But the most interesting difference, in terms of the present discussion, is the geographical distribution. As seen in Map 1, double accent is concentrated in a particular well-circumscribed region. “Additional accent,” however, occurs throughout Bulgaria, with somewhat more frequency in two specific regions, one in the north-east and the other in the southwest. Its particular frequency also appears to be connected to the identity of the particle which triggers it. For instance, its frequency after the conjunctions *kato* ‘when, as’ and *ako* ‘if’ is radically higher in the Moesian region than elsewhere. All this means that whereas we cannot rule out a historical connection between the two accentual patterns on the basis of geographical distribution, neither can we assume one on this basis.

## 2.6 Historical commentary: Double accent

Returning to the better-studied issue of double accent, it would appear from the isoglosses in Maps 1 and 2 that it is both archaic and innovative. The fact of

indisputable instances of double accent in peripheral regions (those marked 4 and 5 on Map 1) would suggest that double accent was once more widespread than it is now. But the shape of the isoglosses which are the focus of Map 2 clearly suggests an innovating center from which change has radiated. The distinction between the two areas is also seen in the frames of double accent: of the 21 examples attested in peripheral regions, only four occur in phonological words (or 19% of the total), and two of these four were recorded in a village located just to the west of area 1.<sup>14</sup> By contrast, the majority of examples in areas 1–3 occur in phonological words: 57% in area 1a, 58% in area 2b, and 63% in area 3). This lends further support to the idea that the development of double in accent in the southwest is a more recent phenomenon, connected with the increasing tendency to include clitics in the word for accentual purposes.

There has been much discussion in the literature as to the ultimate source of double accent. The fact that a similar pattern is found in Greek has not escaped attention; indeed this similarity is often mentioned in discussions of the convergent phenomena known as Balkanisms, and frequently cited as the historical source of double accent in Balkan Slavic (Asenova 2002: 40). The rule in Greek is that if a following clitic extends the word such that the main accent is more than three syllables from the end, an additional accent must be added on the syllable which now occupies the new penultimate position. To cite Asenova's examples:

- (16) *oikogèmeneia* vs. *oikogèmeneià mou*  
 family                      family                      to me  
 'family'                      'my family'
- (17) *psònakse*            vs. *psònaksè tous*  
 call IMV                      call IMV                      them  
 'Call!'                      'Call them!'

The similarities are sufficiently striking that one must assume contact with Greek to have played at least some role in the rise of double accent in Balkan Slavic. But even if the ultimate source (or partial source) is contact with Greek, such a pattern would not have taken hold in the target language if the structure of that language had not been receptive to it.<sup>15</sup> Furthermore, the fact that double accent in Bulgarian occurs also in trisyllables, such as (1), or in words that can in no way be considered

14. The reason this village (Skrüt) was excluded from area 1 is because of the low overall frequency ratio: of 35 instances of the conditioning frame, double accent occurred in only three of them.

15. See, however, Thomason and Kaufman (1988: 14–20) for a critique of this view.

“phonological words”, such as (4), shows that the pattern in Bulgarian is implemented much more broadly than in the Greek counterpart.

To this proposed external source, then, must be added internal facts of Bulgarian which almost certainly played a role in the rise of double accent. These would be both phonological and morphological in nature, and are best understood if viewed in the broader Balkan Slavic context.<sup>16</sup> With respect to phonology, southwestern Bulgarian, the area of highest concentration of double accent in the BDLT database, is adjacent to regions of Balkan Slavic which show an ever-increasing tendency, as one moves west, to the fixing of accent on the penultima. As seen by data from southernmost Macedonian dialects located not far from the region under study (Vidoeski 1987; Alexander 1994), this has involved not only retraction of accent from final open syllables, but also advancement of accent from internal syllables in many categories. With respect to morphology, the region of southwestern Bulgarian is known to have undergone numerous shifts of accent within certain paradigmatic types, many (but certainly not all) connected with the affixation of definite articles. It is quite possible that many of the words affected by these several changes could have been pronounced now one way and now the other, in the manner of the “compromise systems” mentioned by Andersen (1988: 53), and that the rhythm of these several vacillations could have become a pattern of its own which then became extended further (with the Greek model aiding in this extension).

There have been two major studies of double accent by Bulgarian scholars, each of which provides both extensive synchronic data and speculation about its historic source. The first of these studies (Todorov 1939) sees the source in a combination of accent shifts in various morphological categories; this is also my own view (Alexander 1993, 1994). The view of more recent Bulgarian scholarship, however, is represented by the other major study (Ivanov 1971), which focuses solely on metrics and sees the source in the “special accentual rhythm” of double accent (*особен акцентен ритъм*, a term first proposed by Mirčev 1936: 65). While this is ultimately a paradoxical statement, since the description of a phenomenon obviously cannot also be its source, it is undeniable that the rhythmic pattern of double accent is highly striking, even hypnotic. Whatever the ultimate source of double accent, it appears certain that this highly striking rhythm would have been a factor in its spread.

In any case, it appears that double accent in Bulgarian is quite old. Its presence has been established by Bulgarian scholars in at least three 19th century manuscripts. (Romanski 1928; Mirčev 1932; Kolev 2001). In addition, its presence has

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16. The project which resulted in the BDLT website/database was originally intended to have embraced all of Balkan Slavic; the limitation of it to dialects within the current borders of Bulgaria came about purely due to practical, pragmatic reasons.

been recorded in manuscripts of a much earlier date. In his thorough investigation of two 15th century manuscripts Birnbaum (1988) refers to “supplementary stress”, which he defines as “the presence of more than one stress on a single accentual unit” (1988: 314), and states that he found “over one hundred examples of multiple stress marks on a single accentual unit just in the four folia of Muz. 3070” (1988: 316).

By contrast, the accentual pattern which bears the provisional name “additional accent” was initially thought to be an innovation now in the process of spread: these conclusions, made by the BDLT team which discovered this accentuation and reported on it (Zhobov et al. 2004), were based simply on the fact that there was no mention anywhere in the literature of something which was so striking to the ear of a dialectologist. The team’s first conjecture was that it is an extension of the accentuation found in phrases where the negative particle is followed by a clitic, as in (18). This pattern is found in all Bulgarian dialects, and is codified in the standard language as well.

- (18) *ni ti e ròt*  
 neg to.you is relation  
*vǎpreki ĉe ni ti e ròt* (Šúrnică 1:62 (1:30))  
 Even though you’re not related

It appears, however, that things may be more complex, that this pattern may be dated at least to the 17th century, and that it may have once been even more widespread in Bulgarian than it is now. This would suggest, then, that the most widespread implementation of this pattern (that after the negative particle) was codified into the norm while the other implementations of it were ignored.

The evidence supporting greater age of this pattern is found in the well-known ‘damaskini’, texts composed and copied in the 17th century in numerous regions in central Bulgaria. These texts are a very important source for the history of Bulgarian, since they are the first evidence of a widespread written tradition of what is known as “new Bulgarian” – a form of the language that is no longer any form of Church Slavic but rather clearly based on contemporary speech norms (Mladenova 2013). What is particularly important for the topic of the present study is that accent placement in these texts corresponds very closely to that of modern spoken Bulgarian. Thus it is quite surprising (here too) that none of the scholars who have worked on these texts have mentioned the widespread occurrence in these texts of accent on clitics following clause initial conjunctions or particles. Yet in a recent perusal of two such manuscripts, about both of which it is accepted that accentual marks reliably represent the speech of the time, I found abundant evidence of this accentuation, not only after negation but also after conjunctions and other trigger particles. Although I have yet to complete a more thorough study of these texts, I can say with some certainty already that it is very frequent in the



recently discovered Loveč damaskin (Mladenova and Velčeva 2013) and that it also appears to occur with some frequency in the more well-known Tixonravov damaskin (Děmina 1971).

It is tempting to see a relationship, however distant, between the two accentual patterns, since each is defined by the appearance of a second accent in a sequence which normally bears only one, and each makes reference to sequences which include clitics. Although it is unclear exactly what that relationship might be, it appears certain that it is bound up with the tendency of Bulgarian (and Balkan Slavic in general) to extend the accentual domain of words to include clitics. In the case of double accent these are enclitics, while in the case of additional accent they are proclitics, with the proviso that they occur in a particular syntactic frame – and in both cases, a second accent appears in addition to the etymologically expected one. In any case, Bulgarian dialectal accentuation still offers much fascinating data for further study.

### 3. Conclusion

This study has presented new data about the distribution of certain accentual patterns within Bulgarian dialects, one of which (“double accent”) is well known and the other of which (“additional accent”) is a new discovery. The form in which these data are available – extensive audio recordings of natural conversational speech – has made it possible to view the linguistic geography of the phenomena in question, particularly of double accent, in a much more precise way than has previously been possible. Previous studies have focused exclusively on the region where double accent is known to be characteristic of the dialect, and have simply stated that double accent “is present”. By covering the entire expanse of Bulgarian dialects, this study has given evidence of double accent in peripheral regions where it has not been recorded before; and by analyzing in detail long stretches of conversation, this study has plotted not just the “presence” of double accent, but also the much more significant facts of its relative frequencies of occurrence. This in turn has allowed the drawing of isoglosses which give considerably greater insight into the historical development of double accent. And although the “diatopy” of double accent and its relation to diachrony has been the major focus, the discovery of a related phenomenon in modern dialects, and of its presence at least as far back as the 17th century, provides considerable impetus for further study.

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# Suppletion or illusion?

## The diachrony of suppletive derivation

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Constructing a typology and cross-linguistic survey for Aktionsart, actionality, and related notions is largely infeasible at present because so few Aktionsart systems have been fully described, they are typically complex and intricately dependent on verbal semantics and classification, and despite the inherent connection to the lexicon information about Aktionsart categories is rarely recoverable from dictionaries. As a first step this paper proposes a very minimal distinction of *continuous* (lacking inherent endpoints, chiefly states and activities) vs. *bounded* (having one or more endpoints, e.g. punctual, telic, and ingressive predicates and subtypes such as accomplishments and achievements). The word family of a predicate like *sit* can be based on the continuous form (as in English, where continuous *sit* is the base and *sit down* is derived) or on the bounded form (e.g. Slavic \*sed- ‘sit down’ and derivative \*sid-e-). A stumbling block in this endeavor has been sets like continuous *know*: bounded *find out realize*, etc. where no regular derivation relates the forms. Are they a paradigm? If so, what is the base? Structuralist criteria and Andersen’s notion of markedness agreement indicate that they do form a paradigm and the continuous form is the base.

**Keywords:** Aktionsart, actionality, event structure, derivational paradigm, markedness

### 1. Introduction

Among the most memorable events of my graduate student years were the times I first read Andersen (1968, 1969, and 1973). Each drew attention to little-noticed facts that raised and answered important new questions. They gracefully brought together the structuralist principles I was mastering in my program in the Slavic Department and the new theoretical perspectives I was learning in the Linguistics Department, conveying the important message that both were valuable. Later, a similar message came from such works as Andersen (1988, 1996, 1999, 2003), this

time confirming the value and productivity of combining painstaking philological work with recent theoretical perspectives and interdisciplinary issues. In their time each of these contributions pushed historical Slavistics into the spotlight and transformed some part of Slavistic knowledge, and they remain well read and much cited. This chapter tries to emulate that approach on a more modest scale, applying the old structuralist notion of markedness and Andersen's model of actualization in a theoretical world informed by canonical derivational morphology, paradigmatic gaps, suppletion, and lexical compositionality to solve a concrete problem which stands to shed light on some larger questions of language change.

## 2. Issues

Consider the verbs of posture European such as German *sitzen*, *sich setzen*, *setzen*, English *sit*, *sit down*, *seat*. I analyze these in terms of what is probably most often called *event structure*, which might be described as the most general level of predicate lexicosemantic categorization based on the shape of events and situations in time (e.g. Dowty 1979; Smith 1991; Pustejovsky 1991; Bertinetto et al. eds. 1995; Bickel 1997; Van Valin 2006; Koontz-Garboden 2012; Croft 2012; and many others). In these approaches a predicate meaning can be decomposed into a *state* or *phase* which extends in time,  $\pm$  a *transition* or *state change* or *endpoint*,  $\pm$  *causation*. These three broad notions are far from capturing the great variety of aspect, Aktionsart, and/or actionality distinctions made by languages, which are ultimately the proper level for comparison. However, because of their complexity, intricate interaction with other categories, and frequent covertness, these have so far been covered thoroughly for a very few languages and are mostly impossible to recover from grammars and dictionaries. The broader level of event structure is often recoverable from dictionaries and grammars, general enough to subsume language-specific categories unproblematically, and amenable to cross-linguistic surveying and typological description.

First, some terminology. *Continuous* subsumes states such as *be white*, *fear*, *be sick*, which have no inherent endpoints; and activities such as *sit*, *run*, or *sing* which have no inherent endpoints but only externally imposed ones. *Bounded* subsumes all predicates with endpoints, chiefly telic (with a final endpoint; it includes accomplishments and achievements), ingressive (initial endpoint), and punctual (momentaneous, without duration or endpoint). Causal adds an agent and causation of a continuous or bounded event. *Continuous* and *bounded* were chosen so as not to coincide with standardly used terms for actionality or Aktionsart types. Examples from some European languages are in (1). (For boldface see just below. For clarity the Slavic forms are segmented and shown without inflectional endings.)

(1)	<u>Language</u>	<u>Continuous</u>	<u>Bounded</u>	<u>Causation</u>
	English	<b>sit</b>	sit down	seat, sit, have sit
	German	<b>sitzen</b>	sich setzen	setzen
	Russian	sid-e-	<b>sed-/sjad-</b>	sad-i-
	Bulgarian	sed-ja/e-	sed-n-	složa da sed-n-
	French	être assis	s'asseoir	<b>asseoir</b>
	Spanish	estar sentado	sentarse	<b>sentar</b>

These triads are derivationally related sets, or derivational paradigms.<sup>1</sup> The bold-faced verb in each row is the base of the set, from which the others are derived by synchronic processes, chiefly affixation, that for the most part are probably transparent to any reader.<sup>2</sup> For each language the base is also one of the forms in the paradigm, except for Bulgarian, where all three forms have morphology deriving them from a base that is not an independent lexeme.

Such triads can be found in many languages. Below are the verbs 'sit', etc. in some non-Indo-European languages of Eurasia.

(2)	<u>Language</u>	<u>Family</u>	<u>Continuous</u>	<u>Bounded</u>	<u>Causation</u>
	Mongolian	Mongolic	<b>suu-</b>	<b>suu-</b>	suu-lga-
	Turkish	Turkic	<b>otur-</b>	<b>otur-</b>	otur-t-
	Kazakh	Turkic	<b>otyr-</b>	<b>otyr-</b>	otyr-ghyz-
	Manchu	Tungusic	<b>te-</b>	<b>te-</b>	te-bu-
	Nanai	Tungusic	tee-si-	<b>tee-</b>	tee-ween-
	Ingush	Nakh-Daghestanian	wa-xeina d.aagha	<b>wa-xou</b>	wa-xoa-d.u
	Karata	Nakh-Daghestanian	<b>k'us-</b>	<b>k'us-</b>	k'us-aa-
	Mordvin	Uralic	ozado ašte-	<b>oza-</b>	oza-vt-
	Hungarian	Uralic	<b>ül</b>	le-ül	ül-tet

Here a common pattern is one where continuous and bounded are not derivationally distinguished; a single verb has both meanings, which are differentiated only

1. For derivational paradigms (sometimes also *word families*, *word nests*) see e.g. Bauer (1997), Stump (2001), Booij (2008), Štekauer (2014). A paradigm is an ordered set of cells realizing relations to a base or head and often showing paradigm-based dependencies between the cells (such as syncretism, suppletion, allomorphy, etc.). In inflectional paradigms each cell bears a regular set of grammatical properties. For derivational paradigms, after some debate, the received view has reached a consensus that the cells realize semantic relations to the base (e.g. agent, iterative, factitive, abstract) and may or may not have regular formal realizations. While cells in inflectional paradigms are normally all filled for each word, in derivational paradigms there are often gaps (which can potentially be filled).

2. That the ablaut of the German verbs derives *setzen* from *sitzen* is not transparent to anyone unfamiliar with the history of ablaut, but Plank & Lahiri (2015) show that it is synchronically directed.

by tense-aspect inflection.<sup>3</sup> These could be described as homophony, neutralization (of the continuous/bounded opposition), or colexification (e.g. of *sitzen* and *sich setzen* in Mongolian *suu-*).

All of these examples show that words differing in valence and Aktionsart or actionality form derivational patterns. Their derivational relatedness is clear because they share the same base and have segmentable affixes and/or alternations. On both synchronic and comparative evidence their histories are clear and can be described as addition of morphemes and/or application of rules or alternations to a reconstructable base. Some of the affixes and alternations are ancient, as the ablaut in the causative forms of Germanic and Slavic is; some, like the reflexive morphemes in German and Romance, are more recent.

Now consider the continuous and bounded forms for the predicates 'know/*wissen*' in the some of the same languages:

(3)	<u>Continuous</u>	<u>Bounded</u>
Mongolian	mede-	mede-
Kazakh	bil-	bil-
Nanai	saa-	saa-
Ingush	xou-	xou-
Komi	töd-	töd-mas-
Hungarian	tud-	meg-tud-
(4)	English	know realize, find out, notice, discover, figure out, recognize be aware become aware
	German	wissen erfassen 'grasp' erkennen 'recognize, realize' bemerken 'notice' feststellen 'determine, discover'
	Russian	znat' uznat' 'find out' poznat' 'get to know' doznat'sja 'find out' vyjasnit' 'figure out' soznat' 'become conscious of' dogadat'sja 'find out, catch on' opoznat' 'identify'
	Spanish	saber saber 'know; learn, find out' darse cuenta de, hacerse cargo de 'realize' descubrir 'find out' enterarse 'know, learn, find out; understand, get the idea'

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3. The same can be said for spoken English, where both *sit* and *sit down* can be used in many of the same contexts.

The bounded forms for the Indo-European (IE) languages are those given as translations for the various English, Russian, and German words in various bilingual dictionaries (in what could be described as a network or web of colexifications or partial synonymies). For each I give what seems to be the central meaning or most common gloss.

In the non-IE languages in (3) the verbs in the two senses are clearly related, either by suffixal derivation or because the two are covered by a single verb and distinguished only by tense-aspect inflection. (As with 'sit', causatives are derived in all the non-IE languages.) In contrast, the IE languages have a great variety of forms that can be elicited or found in dictionaries to correspond to the bounded form of the non-IE languages. While in the non-IE languages the difference between the two forms amounts to a simple distinction of continuous vs. bounded with no lexicosemantic difference, in the IE languages there is some lexicosemantic difference with all or nearly all of the bounded forms.<sup>4</sup> Only for the English near-synonym *aware*, an adjective, is there straightforward derivation and lexicosemantic identity, because there the auxiliary verbs *be/become/make* carry all of the event-structure difference.

Why this difference? The first question to answer is whether the IE verb sets can in any sense be seen as a paradigm. At first glance they cannot, and I would not expect to see the Indo-European sets for 'know', etc. included in descriptions of word formation in those languages, while the examples from Mongolian, etc. clearly would be – as would the sets for 'sit', etc. in all the languages. On the other hand, the sets in (3) compared to (4) can be regarded as an ordinary case of colexification. From a typological perspective, the analogous semantic and event-structure relations within all the sets, including European 'know', argue in favor of treating all of them as the same kind of derivational paradigm.

There are some further pieces of evidence in favor of this view. The behavior of English *aware* shows that a paradigm exists, as the set of auxiliaries *be/become/make* recurs with many adjectives.<sup>5</sup> In Slavic, the same root appears in continuous *know* and in several bounded verbs: Russian *poznat'*, *uznat'*, *doznat'sja*, *soznat'*, *opoznat'*, and likewise for other Slavic languages. This testifies to some kind of connection, though none of the patterns of prefixation are regular for this correspondence of meaning. Also in Russian, there is a regular relationship between an adjective used with 'be' in the continuous sense and a verb with conjugation suffix *-ej-* in the bounded sense, e.g. adjective *belyj* 'white', verb *belet'* 'turn white', *staryj*

4. The distribution is not as simple as IE vs. non-IE; eastern IE languages, notably Indo-Iranian, tend to have the straightforward paradigmatic structure of the non-IE languages. The exact geography remains to be worked out.

5. With lexicalized alternants to *become* as in *turn red*, *get hungry*, *go crazy*, *come clean*, etc.



‘old’, *staret* ‘get old’, and many others. Another paradigmatic relationship is what might be called neutralization of continuous and bounded contrasts in a few verbs in each language, e.g. English:

- (5) The students in the morning lab *got it* right away but the afternoon lab still doesn’t *get it*.

In the first clause *get it* has bounded meaning: ‘catch on, grasp’; in the second it has continuous meaning: ‘understand’ (resultative, the state resulting from ‘catch on, grasp’). Similarly, in Russian, where the perfective of ‘understand’ has bounded meaning:

- (6) Vse srazu           ponjali.  
all immediately understood.PF  
‘Everybody immediately got it/caught on/ understood’

but one can also respond to an explanation with:

- (7) Ponjal.  
understood.PF.MASC  
‘Right. I understand. Got it.’

(7) is effectively present tense and stative in meaning: ‘I now understand it’. The perfective cannot be used in all contexts where ‘understand’ describes a state (in most contexts only imperfective *ponimat*’ can be used), but it is regular in the context where the speaker has understood an explanation or grasped an idea and now understands. The nature of Russian aspect precludes expansion of this usage to cover the entire range of the imperfective. English has no such aspect category and can more easily use bounded verbs in the continuous sense, and several partial synonyms such as *realize* and *recognize* can be used in the same way. Spanish *saber* ‘know; learn, find out’ has the same kind of pattern (I have not investigated the details).

These verbs, then, have the same pattern as several of the verbs in (3): no continuous-bounded distinction other than what can be signaled by tense-aspect choice. This can be called neutralization rather than routine lexical non-distinctness only because other verbs in each language do make the same distinction: Nanai *saa*- ‘know; find out’ in (3) but *tee-si*- ‘sit’ vs. *tee*- ‘sit down’ in (2). Similarly, English *get it* can be said to neutralize the continuous-bounded distinction only because continuous *know* or bounded *find out* and *notice* do make the distinction. Neutralization applies to paradigms and similarly structured sets, and the applicability of the notion here is evidence that speaking of a derivational paradigm is not out of order.

Thus, considerations of both typology and single-language structural description let us regard the sets in (4) as derivational paradigms, specifically two-cell paradigms, one of the cells with a single member and the other with several. As paradigms, they should have bases, but what is the base of the paradigm of *know*: *realize*, *find out*, etc.? There is obviously no morphological base for the English paradigm, but one or the other of the cells must be more fundamental or central or must figure as facilitating or stimulating derivation of new forms or attracting new members to the paradigm; this is the role of the derivational base in creating new lexical items. Does ongoing word formation then involve *know* as an unpaired continuous verb attracting eligible bounded verbs into its orbit? Or do unpaired bounded verbs tend to pair with a continuous verb, and *know* happens to be the only good counterpart for *realize*, etc.? Put more generally, do English paradigms start with a continuous verb for which bounded counterparts need to be either derived or found, or does it start with a bounded verb for which continuous counterparts need to be either derived or found?

Classic structuralist principles for describing the distribution of what are now known as non-canonical patterns in paradigms can help give answers to these questions. To bring new and old terminology together, non-canonicalities can be said to cluster on the marked side of marked-unmarked oppositions, and in paradigm structure the unmarked side is, or is represented by, the base. Non-canonicalities depart from the ideal of one form, one function, and the non-canonicalities of interest here are neutralization (one form, two functions) and defectivity (no form for an expected function). The understanding of neutralization and defectivity here is drawn especially from Greenberg (1966) and canonicity from Corbett (2007, 2010, 2015).

Applying markedness theory, there are two possible interpretations of paradigms like those in (4). One, applying the principle that defectivity identifies the marked member of an opposition (Greenberg 1966), is that the paradigm of *know* is defective in lacking a bounded member. Defectivity identifies the bounded cell as marked, leaving the continuous member *know* as base. A diachronic interpretation is then that *know* is a base or potential base with a paradigmatic gap for bounded, and words like *realize*, etc. are opportunistically recruited to fill the gap. The plethora of bounded verbs then results from different individual recruitment events, some of which catch on and become more or less stabilized. As soon as there is any degree of stabilization we can speak of a suppletive paradigm and furthermore as one with no single clear filler for the bounded slot but allowing some variation.

On this analysis, in terms of lexical typological base,<sup>6</sup> English is continuous-based, so continuous verbs can be presumed to be bases of paradigms; *know* is a continuous verb and potential base of paradigm, so a bounded slot is created and filled with existing verbs. Further evidence for a continuous-based lexical type is a tendency for even bounded verbs to develop a continuous reading, as with *get it*, etc. discussed above.<sup>7</sup>

Another analysis is that the plethora of bounded verbs means that the continuous cell *know* neutralizes the various semantic distinctions found in *realize*, *find out*, etc., and since neutralization identifies the marked member of an opposition, it is *know* that is marked and *realize*, etc. unmarked and therefore base. Diachronically, on this view, an unpaired verb is assumed to be bounded, and when a pairing is needed a bounded verb seeks (to put it metaphorically) a counterpart; there is none, so each of these bounded verbs settles on the semantically broad and fairly generic continuous verb *know*. This second analysis has the disadvantages that it does not account easily for the behavior of *get it*, etc., which are clearly bounded verbs extending to continuous function and not the other way around; and that the neutralization that identifies paradigms should involve recurrent grammatical properties and not unique lexico-semantic ones.

Perhaps more important, the first analysis accounts more naturally for the formation of these unbalanced paradigms and for their synchronic status. A number of verbs with reasonably close lexical semantics are available to serve on the fly as a bounded counterpart to *know*, and those that gain any currency form a loosely structured embryonic paradigm. In time, the choices will probably settle down to one or few bounded verbs. (My impression is that *find out* and *realize* are the best candidates and probably the most frequent, *find out* being less formal. Judging from the glosses I have seen in many fieldwork-based dictionaries, *find out* is what first occurs to bilingual consultants, and/or what English-speaking field lexicographers regard as the basic rendition of bounded 'know'.)

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6. In the sense of Nichols, Peterson, Barnes (2004).

7. An example of this reasoning comes from the possibly clearer case of derivation of transitives from intransitives by conversion in Macedonian. Nearly any Macedonian verb can be used transitively, as a semantic causative of the intransitive sense. Now, the Macedonian verb lexicon is transitive-based, as shown by the many causal-noncausal pairs in which the noncausal is derived from the causal, e.g. *se smee* 'laugh' from *smee* 'make laugh', *se luti* 'get angry' from *luti* 'make angry', and others. Use of intransitives as transitives means that every verb has at least a transitive valence. Some are only transitive; these are the original transitives, the ones that are transitive in other Slavic languages. Some are ambivalently either transitive or intransitive; these are the original intransitives, and their cognates are intransitive.

I tentatively propose the first analysis as a more general principle for the evolution of suppletive derivational paradigms and especially ones with variable members in one cell. The variable cell is a paradigmatic gap on the way to being filled. The value of such paradigms to historical linguistics and typology is that, if numerous enough and consistent enough in a language's lexicon, they can help identify a base lexical derivational type and processes in the evolutionary history of the language. This in turn can raise further interesting questions. What, for instance, happened in the history of English, Russian, German, Spanish, and many other European languages to create a need for bounded counterparts to stative and durative verbs?

I believe that the notion of markedness agreement, and the model of grammatical change advanced in Andersen (2001: 30–31), can help answer this question and also give further evidence of a language's base type. In that model, innovations arise in marked categories, and within that marked category the innovation arises in the unmarked edge or subcategory of its range; if there are contextual or conditioning factors they are also at the unmarked edge of their range. Over time, the innovation extends to more marked subparts of its own range and to contexts or conditioning factors in more marked parts of their ranges.

As above we can equate the base of the morphological paradigm with the unmarked category. On the evidence of other predicates, in English the continuous form is the base of the paradigm and the bounded form is derived (some examples are continuous *sit* : bounded *sit down*, continuous *white* : bounded *turn white*, *get white*, *whiten*). Clearly the bounded forms are formally marked compared to the continuous ones, and the pair *know* : *come to know* (the latter being one of the bounded counterparts to *know*) further shows that this reasoning applies to the paradigm of *know*. Furthermore, it is the continuous form that is generally the paradigmatic base for the causative: *know* : *let know* (and not \**let come to know*); *sit* : *seat* (and not \**seat down*), *white* : (transitive) *whiten*, *make white* (probably not *make turn white* and certainly not \**whitenen*). That is, the causative is derived from the base and not from the unbounded verb.<sup>8</sup>

The innovation in the present case is the very crystallization of the amorphous group of bounded expressions into an incipient event-structure paradigm. Presumably the bounded sense of *realize* arose first in contexts where it was supported by an adverb such as *finally* or a sequencing conjunction such as *then*, and

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8. Recall that, semantically, theoretical work generally takes causatives to be derived from inchoatives (which are bounded forms). But that does not parallel the morphological derivational patterns for all languages, and in any event semantic relations do not necessarily echo markedness relations. I also note that no language I have surveyed has the same event-structure type as base for every paradigm; lexemes differ. This means that the derivational base of a language is a statistical notion, not a categorical one.

the non-agentive, momentaneous sense of *find out* arose first in the same contexts. Such contexts are marked, formally by the presence of the adverb or conjunction and semantically as one specific subpart of a more general range. At least for *find out* it presumably arose first in colloquial usage, as it still has a non-formal flavor. Over time, these forms have expanded their ranges to the point that endpoint-imposing words are not required and *find out* has expanded from colloquial to more generally non-formal. Also over time, similar crystallizations are probably beginning to happen with other words that are less clear exemplars of a state (like ‘know’) resulting from an event (such as an insight, a discovery, a communication, etc.). When this process has progressed further we will have an established derivational paradigm that provides a bounded counterpart or two for continuous predicates. The pattern will be unquestionably part of English grammar only when we develop a default formation type for such paradigms, perhaps using an auxiliary (suppletion strikes me as an unlikely default for any paradigm). Meanwhile, however, the fact that the innovation of a paradigm appears to arise with the bounded members is itself evidence that, for English, bounded is a marked category in event-structure paradigms.

To summarize, we can tentatively assume that any language has a basic or preferred lexical derivational structure consisting of a blank or abstract paradigm with one cell as base. As lexical drift and change occur, words move in and out of paradigm cells. If a word ends up as a stranded base, usage will occasionally recruit another word to function as an ersatz counterpart. Up to this point we have a potential paradigm, which is susceptible to be lexicalized as an actual paradigm. Evidence that actualization has occurred can probably come from significant skewings in the text frequencies, significant skewings in semantic ranges, colexification in dictionary entries, cooccurrence in texts, cooccurrence in word clouds, etc. These are Big Data questions and proposals, and they are driven, made askable, and made answerable by classic structuralist concepts.

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PART V

# Language change and diachronic typology in Balto-Slavic





# A complicated relationship

## Balto-Slavic accentual mobility as a non-trivial shared innovation

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The Baltic and Slavic subgroups of the Indo-European language family are more closely related to each other than to any of the other surviving subgroups; yet it is debated whether they form a subgroup of Indo-European descending from a uniform Balto-Slavic proto-language. While most historical linguists do operate with a Balto-Slavic subgroup and a matching proto-language, others remain sceptical.

In this contribution I focus on one of the most salient similarities between Baltic and Slavic: the paradigmatic accentual mobility found in both subgroups. Following a discussion of non-trivial shared innovations as a diagnostic tool in linguistic subgrouping, I examine the Balto-Slavic problem in the light of three different hypotheses on the origin of accentual mobility.

**Keywords:** Baltic, Slavic, Balto-Slavic, Indo-European, linguistic subgrouping, cladistics, prosody, accentology, accentual mobility

### 1. Introduction

Henning Andersen is one of the few scholars who have contributed significantly not only to a general theory of linguistic change, but also to our understanding of specific problems in the history and prehistory of several languages.<sup>1</sup> As both Henning and I are interested in the problematic relationship between the Baltic and Slavic subgroups of Indo-European and also share an interest in historical

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prosody, the intersection of the two subjects – also the focus of Henning’s article from 2009 – seems right for a contribution in his honour.

After an introduction to the Balto-Slavic problem (§2), I briefly discuss the question of a Baltic proto-language (§3). I review some methodological and terminological problems pertaining to non-trivial shared innovations as a criterion for linguistic subgrouping (§4), discussing in some detail two different meanings of the term ‘shared innovation’ (§5). I then move on to an assessment of three different scenarios for the origin of paradigmatic accentual mobility in Baltic and Slavic as an indicator of genealogical relationship (§6), before I conclude (§7).

## 2. The Balto-Slavic problem

Much has been written about the relationship between the Baltic and Slavic subgroups of the Indo-European language family (having mentioned the “unermeßliche Literatur zu diesem Thema [vast literature on this theme]” in 2000: 135, Hock provides a thorough *Forschungsbericht* in 2006; see also Szemerényi 1957; Löttsch 1992; Dini 1997: 124–143; Petit 2004; Olander 2009: 9–19; 2015: 24–25). While many scholars take a uniform Balto-Slavic proto-language for granted without further discussion, others find it completely unproven.

The first to question the unity of Balto-Slavic was Meillet, who in *Les dialectes indo-européens* summarises his views as follows:

On conclura que le baltique et le slave ont eu des points de départ exactement identiques, qu’ils se sont développés dans les mêmes conditions et sous les mêmes influences; peut-être même y a-t-il eu une période de communauté plus ou moins longue, mais où le slave et le baltique, qui sont les langues indo-européennes les plus conservatrices, n’ont pas introduit d’innovations notables. ... Le baltique et le slave fournissent un bel exemple de deux développements parallèles, mais depuis longtemps autonomes.

[We may conclude that Baltic and Slavic have had exactly identical points of departure, that they have developed under the same conditions and under the same influences; there may even have been a common period, short or long, where Slavic and Baltic, being the most conservative of the Indo-European languages, have introduced no important innovations ... Baltic and Slavic provide a nice example of two developments that are parallel, but autonomous for a long time.]

(Meillet 1908: 48)

Meillet’s sceptical vein (on which see Joseph 2017) is perhaps most prominently represented today by Andersen, who explicitly rejects a Balto-Slavic proto-language:

Previous scholarship concerned with this question has spoken a great deal about a Balto-Slavic protolanguage, which reflects a different understanding (or different understandings) of these relationships, presupposing a shared origin of Slavic and Baltic in a single, unified community language descended from Proto-Indo-European. As I acknowledge in section 4.4, there is evidence internal to the inherited lexicon of the Slavic and Baltic languages which speaks against this previously hypothesized, more or less distant, unified language stage. And in Chapter 6 I mentioned a number of phonological indications that the inherited Indo-European lexical stock of Slavic and Baltic is a composite of several varieties of Indo-European which have been melded together.

All these particulars are strong arguments against the practice, still followed by some investigators and standard in the past, of trying to solve problems in comparative Slavic and Baltic grammar in terms of a reconstructed Proto-Balto-Slavic. (Andersen 1996: 188, also 63–64; 1998: 420)

While Andersen does make use of Proto-Baltic reconstructions since “of course one can construct parts of a proto-language if there is practical motivation for it” (1996: 187), he does not refer to any Proto-Balto-Slavic reconstructions.

The opposite wing, which has no doubts about the existence of a Balto-Slavic proto-language, is represented by Vaillant:

[L]es langues slaves sont surtout proches des langues baltiques, si proches qu’il faut admettre que ces langues représentent deux groupes issus d’une même langue commune et placer, entre la période reculée de l’unité indo-européenne et la période, qui touche aux temps historiques, de l’unité slave, une période d’unité balto-slave.

[The Slavic languages are especially close to the Baltic languages; so close that it must be acknowledged that these languages represent two groups that come from the same common language, and that we must posit a period of Balto-Slavic unity between the remote Indo-European unity and the period of Slavic unity, which touches upon historical times.] (Vaillant 1950: 13)

Similarly, Beekes simply states that “[t]he Baltic and the Slavic languages were originally one language and so form one group” (1995/2011: 22, also 31). Villanueva Svensson is also unambiguous: “In my view (which is probably the most commonly held today, at least among Indo-Europeanists), the evidence requiring a Balto-Slavic proto-language is simply overwhelming” (2014: 162). Most recently, Ringe remarks that “though Baltic and Slavic are not so closely related [as Indic and Iranian], the evidence for a Balto-Slavic clade likewise seems secure” (2017: 63), and Matasović considers a Balto-Slavic subgroup to be “presently beyond doubt” (2017: 23).

Between the two extremes we find several linguists with a less decided view on the matter. After a careful examination of the arguments, Stang concludes:

Welcher Schluss soll nun aus allen diesen Fakten gezogen werden? Wohl dieser, dass in nachindoeuropäischer Zeit ein balto-slavisches Dialektgebiet existierte, das gewisse Variationen umfasste, und das vielleicht niemals ganz homogen war, das aber doch in *dem* Sinne eine Einheit bildete, dass es eine Reihe gemeinschaftlicher Neuerungen durchführte, während andere Neuerungen nur einen Teil des Gebiets umfassten und das spätere baltische Gebiet durchschnitten.

[Now what can we conclude from all these facts? In post-Indo-European there probably existed a Balto-Slavic dialect area that included certain variations and was perhaps never completely homogeneous, but which in one respect constituted a unity: it carried out a series of common innovations, whereas other innovations only reached part of the area and cut through the later Baltic area.]

(Stang 1966: 20; emphasis in the original)

Note that in contrast to Meillet, who states that “le slave et le baltique ... n’ont pas introduit d’innovations notables [Slavic and Baltic have not introduced any notable innovations]” (see above), Stang acknowledges that Baltic and Slavic “eine Reihe gemeinschaftlicher Neuerungen durchführte [carried out a series of common innovations]”.

The lowest common denominator for the relationship between Baltic and Slavic seems to be that we are dealing with a dialect continuum (thus Stang 1966: 20; Andersen 1996: 63–64, 187–188; 1998: 420; Holzer 2001: 33; see also the references in Holzer 1998: 33 n.18; Hock 2006: 5–6). A Baltic–Slavic dialect continuum provides a good model for a large part of the developments that the two branches unquestionably have in common. And for those who assume a Balto-Slavic proto-language, a Baltic–Slavic dialect continuum is a natural stage following the dissolution of that proto-language (see Hock 2006: 5–6; Fortson 2015: 648: “Even if the evidence for an old dialect continuum were solid, the larger point is that it still would not vitiate attempts to establish subgroups, which is part of the task of reconstruction.”). While it is comforting to know that almost everybody at least agrees about so much, the problem still remains if we are entitled to speak of a Balto-Slavic proto-language and, accordingly, of a separate Balto-Slavic subgroup of Indo-European.

It is of course possible to take an agnostic approach like Holzer – who considers the Balto-Slavic problem to be not only “in der Praxis unlösbar [in practice unsolvable]” (1996: 37), but also “grundsätzlich unlösbar [in principle unsolvable]” (1998: 27n. 1) – and leave the question unanswered. However, as the relationship between Baltic and Slavic provides a good case for methodological and terminological considerations regarding linguistic subgrouping in general, a reconsideration of the problem with a focus on these aspects may prove useful.

### 3. The Baltic problem

Before we proceed, a question connected with the Balto-Slavic problem should be addressed: that of the validity of a Baltic subgroup of Indo-European. While most scholars posit a Baltic subgroup (see e.g. Villanueva Svensson 2014; Hill 2017), some maintain that reconstructed Proto-Baltic is identical to Proto-Balto-Slavic, which means that East Baltic, West Baltic and Slavic meet in a single ternary node in the Indo-European family tree. It is possible to accept a Balto-Slavic subgroup of Indo-European without assuming a Baltic subgroup (thus e.g. Ivanov & Toporov 1961: 303; Kortlandt 1977/2009c: 5; Kortlandt forthcoming; see also Holzer 1998: 33nn. 17, 18; Zeps 1985, arguing for classifying Slavic as a West Baltic language; Derksen 2008: 20n. 22, who states: “Actually, I am not convinced that it is justified to reconstruct a Proto-Baltic stage. The term Proto-Baltic is used for convenience’s sake.”; cf. Hock 2006: 3n. 2; Young 2017a: 482–483; 2017b: 486–487; Villanueva Svensson 2014: 164 with further references).

While it is true that many similarities between East and West Baltic are archaisms or may be the result of later parallel innovations, I agree with Villanueva Svensson (2014: 166–172) that the innovations in the verbal systems of East and West Baltic – especially the merger of the 3rd singular, dual and plural – are much easier to understand as shared innovations at a common pre-stage than as parallel developments or archaisms. The evaluation of the evidence obviously depends on one’s reconstructions: for instance, Kortlandt’s analysis of the data (e.g. 1979/2009c: 161–162; 2011: 39; Kortlandt forthcoming) leads to the reconstruction of a Proto-Indo-European thematic present 3rd singular ending *\*-e* and a 3rd plural ending *\*-o*, the merger of which is more easily imaginable as a parallel development. However, this idea – which, among other things, requires the assumption that *\*-o* was replaced with *\*-onti* at least seven times in the other Indo-European subgroups, independently (Olander forthcoming: §7.3) – has found very little support among other historical linguists (e.g. Cowgill 2006: 555–556; Villanueva Svensson 2010: 361–362; 2014: 166–167 with n. 5).

An interesting aspect of the ‘Baltic problem’ is that it is logically possible to accept neither a Baltic nor a Balto-Slavic proto-language. While this is by no means a widespread view, Stang comes close when his conception of Proto-Balto-Slavic (see §2) is combined with the fact that he prefers the term “gemeinbaltische[s] Dialektgebiet [Common Baltic dialect area]” to an “urbaltisch [Proto-Baltic]” proto-language (Stang 1966: 13, 20–21, following Endzelins 1931/1979: 551). A similar stance is taken by Andersen (1996: 187; 1998: 420, following Stang): as we have seen (§2), he objects to the notion of Proto-Balto-Slavic, and although he takes a slightly more positive attitude towards Proto-Baltic (accepting at least the practical value of Proto-Baltic reconstructions), he does not seem to accept an actual

Baltic proto-language. A logical consequence of accepting neither Proto-Baltic nor Proto-Balto-Slavic is, as far as I can see, that East Baltic, West Baltic and Slavic are in a way, at least from the perspective of the Stammbaum model, conceived as three independent branches of Indo-European.

For the sake of completeness, I should mention that a ‘Slavic problem’, i.e. whether we should assume a Slavic subgroup that descends from a Slavic proto-language, hardly exists in the literature: a Slavic subgroup is generally accepted (see also Villanueva Svensson 2014: 163; but cf. Holzer 1996: 22).

#### 4. Non-trivial shared innovations

The disagreement about the validity of a Balto-Slavic subgroup of Indo-European derivable from a Balto-Slavic proto-language is not only caused by different interpretations of the material, but also by different understandings of some of the central concepts (see Ivanov & Toporov 1958: 4; Toporov 1988). In this section I examine in more detail one of the fundamental concepts in linguistic subgrouping, namely that of the *non-trivial shared innovation*: if an innovation that is peculiar enough to be unlikely to happen more than once is found in two or more related speech varieties, it is likely that the innovation only took place once, in a common ancestor of these varieties (for a general discussion see Porzig 1954: 53–64). The shared innovation thus shows that the languages belong to the same subgroup. In principle a single certain shared innovation is enough to establish a subgroup (Hoenigswald 1966: 8; Hock 2000: 132, 136; 2006: 7).

One might be tempted to say that even a trivial shared innovation would be enough to posit a subgroup: after all, a model that posits one shared innovation at a common pre-stage of two branches would be simpler than a model that posits two identical but separate innovations in two individual branches, and thus Occam’s razor would lead us to prefer the former model. However, that possible subgroup would obviously rest on very fragile ground; I go no further into this question here. Not all scholars agree that only innovations may serve as the basis for linguistic subgrouping: according to a minority view, archaisms also count (Watkins 1966: 30–31; Poljakov 1995: xvi; Holzer 1995: 305; 1996: 31–32; see also Georgiev 1981: 268).

The most reliable innovations for linguistic subgrouping are found at the phonological and, especially, morphological levels, whereas syntax and lexicon are less helpful (Fox 1995: 35; Ringe, Warnow & Taylor 2002: 65; Nakhleh, Ringe & Warnow 2005: 395–396; Nakhleh et al. 2005: 172, 180; Ringe & Eska 2013: 256–263; Barbançon et al. 2013: 149; Clackson 1994: 17–25; note that Clackson 2007: 6 maintains that “[i]t is only through morphological changes of this sort that we can be sure that there is a reconstructed sub-group parent”). This is because phonology

and morphology are less liable to parallel development and borrowing than syntax and lexicon (Ringe, Warnow & Taylor 2002: 61–65; cf. Clackson 2007: 6).

A completely different approach to linguistic subgrouping is lexicostatistics, which establishes subgroups on the basis of shared lexical items (e.g. Dyen, Kruskal & Black 1992; Rexová, Frynta & Zrzavý 2003; Gray & Atkinson 2003; Chang et al. 2015; Bouckaert et al. 2012). Among historical linguists, lexicostatistics is generally regarded as a less reliable method for establishing genealogical trees of related languages than the method based on non-trivial shared innovations.

## 5. Genealogically shared innovations vs. contact-induced shared innovations

A problem in linguistic subgrouping that does not seem to have received the amount of attention it deserves is the meaning of ‘shared’ in ‘non-trivial shared innovation’ (the problem is to some extent addressed by Hoenigswald 1966: 12; Hock 2000: 129–130). As I see it, ‘shared’ is used in three different meanings. One is strictly genealogical: a shared innovation is an innovation that has taken place in the common ancestor of two or more related languages. Another refers to contact-induced change: a shared innovation in this sense is an innovation that has taken place in related but already differentiated dialects or languages, or even in unrelated languages, either through direct contact between the languages or through an intermediary language. As Brian D. Joseph reminds me (personal communication, 2017), a third meaning would be an identical, but independent innovation. We may refer to the first type as a ‘genealogically shared innovation’, to the second as a ‘contact-induced shared innovation’ and to the third as a ‘parallel innovation’. While the first type belongs to the history of one speech variety, the last two belong to the histories of different varieties. In the context of the genealogical subgrouping of languages, only the first type is a true ‘shared innovation’.

Some scholars do not appear to see a principal difference between the first two types of innovation. In Holzer’s view, a linguistic innovation takes place in a specific area and affects all the dialects and languages spoken in that area:

Sprachwandel, eine sprachliche Innovation, ist nicht etwas, was jeweils eine bestimmte Sprache oder einen bestimmten Dialekt ... betrifft und kennzeichnet, sondern was jeweils auf einem bestimmten *Gebiet* innerhalb bestimmter Grenzen stattfindet, die von jedem einzelnen Sprachwandel eigens und ohne Rücksicht auf bestehende Sprach- und Dialektgrenzen, das sind die Grenzen vorangegangener Innovationen, gezogen werden.



[Linguistic change, a linguistic innovation, is not something that affects and characterises a certain language or dialect, but it takes place in a certain *area* within certain borders that are specific to each linguistic change regardless of existing language and dialect borders, i.e. the borders of previous innovations.]

(Holzer 2001: 34; emphasis in the original)

If Holzer's view is correct, and linguistic innovations are indeed carried out in a geographical area without regard to linguistic borders, the difference between genealogically shared innovations and contact-induced shared innovations is blurred, with the consequence that shared innovations cannot be diagnostic for linguistic subgrouping. However, while there can be no doubt that shared innovations across dialects and languages do take place, I find it premature to conclude that any type of linguistic change could be shared, especially within inflectional morphology. I therefore still consider it worthwhile to look for candidates for non-trivial genealogically shared innovations in dialects or languages under suspicion of constituting a subgroup.

## 6. Accentual mobility as a shared innovation

### 6.1 Introductory remarks

Although the prosodic similarities of Baltic and Slavic may seem striking when seen through modern eyes, it took a while before they became an integrated part of the discussion, largely because of the difficulties in the historical interpretation of the material. Brugmann (1897: 20–21; 1904: 18) did not mention any prosodic features in his list of shared innovations of Baltic and Slavic, and Endzelīns (1911/1974: 105) stated that “я сейчас не решаюсь вдаваться в темные во многих местах еще дебри славяно-балтийской акцентологии [I will not now go into the oftentimes dark maze of Slavo-Baltic accentology]”).

Fortunatov (1897: 62) regarded the accent advancement now usually referred to as Saussure's Law to have taken place “еще въ литовско-славянскомъ языкѣ [still in the Lithuano-Slavic language]”. Meillet (1908/1984: 45), on the other hand, regarded the law as “[u]n bel exemple des innovations parallèles et indépendantes qui caractérisent ces langues [a nice example of parallel and independent innovations that characterise these languages]”. Since Saussure's Law, nowadays considered not to have affected Slavic, was largely confused with accentual mobility at the time, it is not surprising that the material would leave open several possibilities for interpretation. Van Wijk, who dedicated a whole book to the topic of the significance of Baltic and Slavic prosody for the Balto-Slavic problem, eventually concluded that “[d]ie Abweichungen zwischen den Akzent- und Intonationssystemen der beiden

Sprachzweige sind so gross, dass an eine gemeinschaftliche Entwicklungsperiode von langer Dauer kaum gedacht werden darf [the differences between the accent and intonation systems of the two language branches are so big that it is hardly possible to assume a long period of common development]”, although at least the metatony in the supine (Li. inf. *búti* vs. sup. *būtu*, and Sln. inf. *bíti* vs. sup. *bít*) was most likely to have taken place in the – in his view short – period of Balto-Slavic unity (1923/1958: 106–107 and passim).

Later, Kuryłowicz (1958: 17), while rejecting Saussure’s Law in Slavic, still regarded accentual–intonational changes and qualitative changes as the most and second-most important arguments, respectively, for a Balto-Slavic subgroup. Szemerényi, briefly summarising the traditional theory and Kuryłowicz’s view, concluded that “on either theory BS is characterized by a complicated and, therefore, common innovation in the field of accent” (1957: 117–118). Bulaxovs’kyj (1959/1980: 178–179) did not consider individual shared prosodic phenomena to be decisive for the Balto-Slavic problem, but the quantity of shared phenomena, in his opinion, makes a coincidence unlikely. Stang (1966: 17–18; see also 1957/1965: 174), while including tonal phenomena in his list of common features of Baltic and Slavic, does not seem to mention accentual mobility in this context. When Winter published his article on a lengthening before unaspirated voiced stops in Baltic and Slavic, one of his main conclusions was that the sound law, if accepted, was “a powerful argument for postulating a Balto-Slavic unity prior to the development of separate Baltic and Slavic groups of languages” (1978: 445). Pohl (1980: 67), pointing out that possible traces of accentual mobility in Germanic may indicate that this is not an exclusive Baltic–Slavic innovation, nevertheless counted accent among the “[n]icht widerlegbare Indizien für die Annahme einer gemeinsamen BS Sprachform [irrefutable pieces of evidence for the assumption of a common Balto-Slavic speech form]” (1981: 113). In Beekes’ opinion, Baltic and Slavic “share a host of developments in common, especially with respect to accent” (1995/2011: 31). A similar view is expressed by Derksen (2004).

An up-to-date list of candidates for shared Balto-Slavic prosodic innovations includes the following:

- loss of laryngeals preceded by a vowel plus a sonorant, resulting in an acute syllable (Olander 2009: 151–152; 2015: 47–48);
- Hirt’s Law: retraction of the accent from an accented syllable to the preceding syllable if the latter contained a vowel immediately followed by a tautosyllabic laryngeal (Olander 2009: 149–150);
- Winter’s Law: lengthening of a vowel followed by a Proto-Indo-European voiced unaspirated stop, resulting in an acute syllable (Olander 2009: 150–151; 2015: 50–51);

- paradigmatic accentual mobility (Olander 2009: 155–198 and *passim*; 2015: 49–50).

In this contribution I focus on the accentual mobility found in thematic as well as athematic nominal paradigms and in thematic verbal paradigms in Baltic and Slavic. ‘Paradigmatic accentual mobility’ refers to the alternation between word-forms with desinential accent and phonologically unaccented word-forms (surfacing with initial accent in most attested languages), as seen e.g. in Lithuanian nom. sg. *galvą* ‘head’, acc. sg. *gálvą*, gen. sg. *galvòs*, nom. pl. *gálvos* etc., corresponding to Russian nom. sg. *golová* ‘head’, acc. sg. *gólovu*, gen. sg. *golový*, nom. pl. *gólovy* etc. Correspondingly accented forms, or traces of them, are found in the other Baltic and Slavic languages.

With its complexity and its profound consequences for the morphological systems of Baltic and Slavic, paradigmatic accentual mobility stands out from the other prosodic innovations. Accordingly, accentual mobility seems to provide a useful testing ground for assessing the nature of non-trivial shared innovations. Unfortunately, however, there is no agreement on how accentual mobility originated (an overview of different approaches to the problem of accentual mobility in Baltic and Slavic is given in Olander 2009: 14–46; see also Babik 2012: 13–22; Olander 2013: 138–143; Sukač 2013: 123–135; Kapović 2015: 195–202; Jasanoff 2017: 108–115).

A few scholars consider Baltic and Slavic accentual mobility to be an archaism inherited from Proto-Indo-European, which would make it irrelevant for the question of a Balto-Slavic proto-language if we accept, as do most scholars, that only innovations count in linguistic subgrouping (see §4). Perhaps it is no coincidence that both Meillet (1914) and Stang (1957/1965: 175–179; 1966: 304–307; 1969/1970: 258–259), who are sceptical about a Balto-Slavic proto-language (see §2), consider Baltic and Slavic accentual mobility to be an archaism (see also Arumaa 1964: 25). Today there are hardly any scholars who assume that the paradigmatic accentual mobility of Baltic and Slavic is inherited from Proto-Indo-European in an essentially unaltered form, although within Dybo’s ‘valency theory’ the Balto-Slavic prosodic system is considered to be more archaic than that of Vedic and Greek (Dybo, Zamjatina & Nikolaev 1990: 107–108; see also Osion 2010: 145; Kapović 2015: 215; for criticism see Jasanoff 2017: 172–179); I leave that theory aside here. As we shall see (§6.4), Andersen regards accentual mobility as an innovation while at the same time rejecting the notion of a Balto-Slavic proto-language.

In the following subsections I present three different hypotheses on the origin of Balto-Slavic accentual mobility. I do not assess the validity of these hypotheses as such; rather, my aim is to examine which consequences each of them have for the hypothesis of a Balto-Slavic proto-language. Note that all three hypotheses have

been proposed by authors who accept a Balto-Slavic subgroup of Indo-European and consider accentual mobility to be an innovation that took place at a common pre-stage of the two branches.

## 6.2 Pedersen's Law, Barytonesis, Accent Retraction: Kortlandt

In his earlier writings Kortlandt proposed an intricate system of phonetic changes and analogies in order to arrive at the mobile paradigms of Baltic and Slavic. In an article written in 2006 and published in 2009, Kortlandt modified his theory in favour of a position more similar to that of Meillet, considering accentual mobility to be largely inherited in the *ā-*, *i-*, *u-* and consonant stems (Kortlandt 2009a/2009c, criticised in Olander 2009: 210–212; Babik 2012: 20 and *passim*; Jasanoff 2017: 109–113). However, in order to arrive at the attested Baltic and Slavic accentual systems, Kortlandt still proposes a combination of phonetic accent shifts and structural analogies at a common pre-stage of Baltic and Slavic, including the following:

1. Pedersen's Law: an accent retraction that was “a phonetic development which eliminated the stress from any medial syllable” (Kortlandt 2010a/2010b: 106);
2. “Barytonesis: the retraction of the stress spread analogically to vocalic stems in the case forms where Pedersen's law applied” (Kortlandt 2006/2009c: 93);
3. “Retraction of the stress from final open syllables of disyllabic word forms unless the preceding syllable was closed by an obstruent” (Kortlandt 2006/2009c: 93 = 2010a/2010b: 103).

The developments proposed by Kortlandt are so specific that they are very unlikely to have taken place, especially in the right order, in two (or more) distinct speech varieties, even if closely related. Furthermore, they require a substantial amount of subsequent analogical restructurings. If Kortlandt's scenario for the rise of accentual mobility in Baltic and Slavic is correct, it is impossible to avoid the conclusion that we are dealing with a non-trivial shared innovation at a common pre-stage of the two branches. This conclusion squares with the fact that Proto-Balto-Slavic is taken for granted throughout Kortlandt's work.

## 6.3 Saussure–Pedersen's Law, Proto-Vasil'ev–Dolobko's Law: Jasanoff

According to Jasanoff, Balto-Slavic accentual mobility arose essentially as the result of three accent shifts – two retractions and an advancement – accompanied by a series of analogical restructurings of the accent paradigms (Jasanoff 2017; see also 2008; 2011; for criticism see Kortlandt 2009b/2010b; Oslon 2017; Olander 2018; Villanueva Svensson 2018).

The accent shifts proposed by Jasanoff for pre-Proto-Balto-Slavic are the following:

1. Saussure–Pedersen’s Law: “The PIE/pre-BSL. accent was retracted one syllable to the left from a word-internal short open syllable ... In the special case where the syllable that received the accent was word-initial it received a contrastive left-marginal contour”;
2. Final  $*\check{V}N(C)$  Retraction (possibly an instance of Saussure–Pedersen’s Law): The accent was retracted from a final syllable containing a short vowel followed by a nasal, resulting in a left-marginal accent;
3. Proto-Vasil’ev–Dolobko’s Law: “In phonological words of four or more syllables headed by a left-marginal accent, the final syllable acquired a lexical accent and the left-marginal accent was lost”.

Although Jasanoff argues that the first of his accent shifts is “typologically natural” (2017: 118), the “obvious parallel” he provides – the retraction of the accent from reduced vowels in weak position in Slavic – is in my view a quite different process, dependent by the special character of the reduced vowels in Common Slavic. The rather specific circumstances conditioning Saussure–Pedersen’s Law (the accented syllable must be word-internal, short and open) make it difficult to imagine parallel developments in even closely related dialects of a Baltic–Slavic dialect continuum, especially in combination with the Final  $*\check{V}N(C)$  Retraction, whether this is part of the same process or not. When Proto-Vasil’ev–Dolobko’s Law is added, also extraordinarily specific in its conditioning and, as far as I can tell, typologically odd (Jasanoff does not provide any parallels), the phonological background of accentual mobility strongly suggest a non-trivial shared innovation at a common pre-stage of Baltic and Slavic.

This conclusion becomes even more inevitable when the analogical restructurings of the paradigms are taken into account. To mention just one example, words of the type PIE  $*g^wih_3uótah_2$  ‘life’, gen. sg.  $*g^wih_3uótah_2as$  were first analogically remade to  $*g^wih_3uotáh_2$ ,  $*g^wih_3uotáh_2as$  with desinential accent; then Saussure–Pedersen’s Law introduced mobility in the paradigm, yielding  $*g\check{g}uá'tā$ ,  $*g\check{g}uátās$ ; but then the paradigm was levelled to PBS  $*g\check{g}uátā$ ,  $*g\check{g}uátās$ , eventually yielding Li. *gyvatà*, *gyvātos* and, with transfer into the *o*-stems, CS  $*živòтъ$ ,  $*živòтā$  (Jasanoff 2017: 177)

As in Kortlandt’s scenario, the origin of accentual mobility in Baltic and Slavic in Jasanoff’s scenario can only be the result of a series of non-trivial innovations at a common pre-stage of Baltic and Slavic. For Jasanoff, this conclusion is unproblematic as he wholeheartedly embraces the idea of a Balto-Slavic proto-language: “The hypothesis of a BSL. intermediate common language is taken for granted in

this book. The shared accentual innovations of the two branches are among the most telling proofs of their special relationship” (2017: 1n. 2).

#### 6.4 Mobility Law: Olander

I have suggested that accentual mobility in Baltic and Slavic is the result of a “Mobility Law”, which is supposed to have taken place at a pre-stage of Baltic and Slavic (Olander 2009; see also Olander 2007, 2013: 141–143; Andersen 2009; Holzer 2009: 154; for criticism see, apart from the reviews, Kortlandt 2006/2009c; 2010a/2010b; Babik 2012: 73–74 and *passim*; Sukač 2013: 131–134 and *passim*; Jasanoff 2017: 113–115 and *passim*):

- Word-forms accented on the final mora become unaccented.

A prerequisite for this formulation of the sound law is that Proto-Indo-European hiatal structures (of the type *ā*-stem nom. pl. \**-áh<sub>2</sub>as*) had become accented on the final mora when the accent loss took place at a pre-stage of Baltic and Slavic. By contrast, original long vowels and long vowels that had arisen as a result of contraction of a short vowel and a tautosyllabic laryngeal were accented on the first mora. Since the accent was probably realised as high pitch, the Mobility Law may be formulated as a change of high pitch to low pitch in a word-final mora.

When I first presented the Mobility Law, in a somewhat different formulation (Olander 2006: 133–135), I was not aware of any typological parallels, a fact that was criticised by Kortlandt (“I do not know any example of phonological loss of a high tone on the basis of its position in a word form”, Kortlandt 2006/2009c: 99). In 2009 Andersen reformulated the sound law and adduced two typological parallels, one from Karelian dialects of Russian, and another from Slavonian dialects of Štokavian spoken in the Drava valley (Andersen 2009; see also Olander 2009: 162–165; note that Kortlandt 2010a/2010b: 353–354 does not acknowledge these parallels; for the prosody of the Slavonian dialects see also Pronk 2014). To this may be added a few more parallels that I have subsequently become aware of.

As pointed out by Oslon (2010: 143n. 2) and, in much more detail, Rinkevičius (2013), certain Žemaitian dialects of Lithuanian show a partial accent loss very similar to the one suggested as the cause of the Baltic and Slavic mobile accent paradigms: in these dialects the accent is retracted from a final accented short syllable or a circumflex syllable to the initial syllable of the phonological word, e.g. nom. sg. *šakà* ‘branch’ (standard Li. *šakà*), nom. *pàvazà* ‘sledge runner’ (standard Li. *pavazà*), gen. sg. *šakuōs* (standard Li. *šakōs*), *įmėškūs* ‘to the forests’ (standard Li. *įmiškūs*) (for the material see also Zinkevičius 1966: 37–49). By contrast, the accent is not retracted from an final acute syllable or a medial syllable, e.g. dat. pl.

*šakûoms* (standard Li. *šakóms*), *keṗr<sup>(e)</sup>* (standard Li. *keṗrè* (no retraction)). In Rinkevičius' analysis the Žemaitian prosodic change may be described as a "loss of high tone in the last mora" resulting in an unaccented word form. It is thus very similar to the Mobility Law.

A fourth parallel was pointed out to me by Daniel Petit (pers. comm., 2017): the well-known Ancient Greek change of an acute to a grave in the final syllable of a word followed by an accented word, e.g. *agath̄ós anér* 'a good man', is also simply a change of a high tone to a low tone in the final mora of the word, resulting in a phonologically unaccented word-form, thus again very much resembling the Mobility Law. The fact that the high tone remains before an enclitic word, e.g. *agath̄ós tis anér* 'a good man', is the Greek equivalent of Vasil'ev–Dolobko's Law in Slavic (for the historical interpretation of which cf. Olander 2009: 163–164, following Andersen 2009).

Prosodic features are known to be susceptible to contact influence (Salmons 1992: 1 and *passim*). While it does not directly influence the evaluation of the Mobility Law as a non-trivial innovation, it is interesting that most of the alleged parallels are indeed considered to be contact-induced changes due to influence from languages with an ictus on the word-initial syllable (Andersen 2009: 11–14; Rinkevičius 2013): Balto-Fennic in the case of the Karelian and (perhaps through Latvian as an intermediary) Žemaitian dialects, and Hungarian in the case of the Slavonian dialects (for Karelian see Jakobson 1938/2002: 239; Veenker 1967: 74; Thomason & Kaufman 1988: 122, 241; Salmons 1992: 41–42; for Žemaitian see Zinkevičius 1966: 45–46; for Slavonian see Ivić 1958: 287). I am not aware of any hypotheses on a contact-induced origin for Greek prosodic innovations, but it is at least worth noting that there is agreement on significant substrate influence on Greek. While we may speculate that these substrate language(s) had word-initial ictus like Balto-Fennic and Hungarian, we do not have any actual information about the prosodic system(s) (thus even Beekes 2014: 9, who in other respects provides a fairly detailed picture of the substrate).

The parallels from other speech varieties show that an accent loss of the type suggested for a pre-stage of Baltic and Slavic is a type of prosodic change that has occurred several times in different various systems. In the context of the present paper this means that the sound law itself cannot be classified as a non-trivial innovation; it may have taken place in already differentiated dialects or languages. Also, the parallels suggest that a loss of the accent may be the result of influence from languages with fixed word-initial ictus.

In accordance with these observations, Andersen (2009) has suggested a scenario where Baltic and Slavic accentual mobility arose as a result of contact with (unattested) languages with fixed word-initial ictus: the accent was lost in the word-final mora in pre-Proto-Baltic and, independently, in pre-Proto-Slavic:

the Baltic and Slavic accentual innovations are the results of “separate, parallel developments” (p. 2). More specifically, Andersen maintains that the central innovation – the accent loss

technically is not a shared Slavic and Baltic innovation. On the contrary. It shows that the speakers of the Pre-Slavic and Pre-Baltic dialects formed bilingual communities with speakers of contact dialects that were of the same prosodic type, viz. had fixed initial ictus but no free accent.” (2009: 19–20)

However, a scenario that accounts for the origins of accentual mobility through similar, yet (possibly) independent, phonological developments in Baltic and Slavic is not in itself a sufficient alternative to the idea of a genealogically shared innovation. We should also address the question of the subsequent analogical remodellings of the accentual paradigms that we would have to assume for Baltic and Slavic in order to arrive at the attested situations: if identical non-trivial analogical innovations can be shown to have taken place in both Baltic and Slavic, this would be an argument in favour of a Balto-Slavic proto-language. Interestingly, in contrast to the scenarios envisaged by Kortlandt (§6.2) and Jasanoff (§6.3), within the Mobility Law scenario it is difficult to establish such analogical innovations common to Baltic and Slavic.

A case in point may be the nominative–accusative dual, where it seems that the Mobility Law was triggered only in the  $\bar{a}$ -stem ending  $*\text{-ah}_2\text{-ih}_1$ , but the resulting unaccentedness was copied to the masculine and neuter  $o$ -stems and the  $i$ - and  $u$ -stems (see Olander 2009: 179–180). The structure of the masculine  $o$ -stem ending is debated, however, and it is indeed possible that this form (if the reconstruction  $*\text{-o-eh}_1$  in Nussbaum 1986: 285 is correct) would also trigger the Mobility Law; in this case the assumption that the  $i$ - and  $u$ -stems analogically became unaccented must be considered fairly trivial. Similarly, since it is likely that the genitive plural endings of the  $o$ - and  $\bar{a}$ -stems were hiatal in Proto-Indo-European ( $*\text{-o-om}$  and  $*\text{-ah}_2\text{-om}$ , respectively), the desinential accentuation of these forms in Baltic and Slavic seems to be analogical (see Olander 2009: 185–187), suggesting a shared innovation. However, there is much disagreement on the original shape of the marker of the genitive plural in Proto-Indo-European; if we reconstruct it as  $*\text{-hom}$ , the  $\bar{a}$ -stem ending  $*\text{-ah}_2\text{-hom}$ , with two laryngeals, was in fact not hiatal, and the accentuation of Li. *galvũ* and CS *\*gólъ* would indeed be the regular outcome of the Mobility Law. If that scenario is correct, the  $o$ -stems may have received desinential accentuation by analogy with the all the other vocalic stem types, a development that is trivial enough that it might be the result of independent developments. In short, the potentially shared analogical innovations following the accent loss are not sufficiently significant to represent evidence of a Balto-Slavic proto-language; we may be dealing with independent innovations in related speech varieties.



It should be noted, though, that the outcomes are so similar that a genealogically shared innovation at a common pre-stage of Baltic and Slavic is still a more economic solution. In that case the differences between accentual mobility in Baltic and Slavic should be regarded as the results of secondary developments. For instance, the fact that a non-desinentially accented word-form of a mobile paradigm is unaccented when preceded by a proclitic in Common Slavic (e.g. \**nā golvŏ*) but not in Lithuanian (e.g. *ĩgálvą*) may easily be the result of a Lithuanian innovation comparable to that observable in attested Slavic languages (e.g. Ru. *ná golovu* → *na gólovu*). The fact that Latvian points to the existence of unaccented word-forms in pre-Proto-East Baltic supports this interpretation (see Olander 2009: 119–120, following Garde 1976: 195–196 and Young 1994: 106).

To sum up this subsection, if the mobile accent paradigms of Baltic and Slavic arose as a consequence of an accent loss in the word-final mora, there are enough typological parallels in similar speech varieties that accentual mobility cannot definitively be said to be a non-trivial innovation: it is a possible scenario, though perhaps not the most economical one, that mobility arose in an already differentiated Baltic–Slavic dialect continuum, as suggested by Andersen.

## 7. Conclusion

In the preceding sections we examined one of the apparently strongest arguments for a Balto-Slavic proto-language: paradigmatic accentual mobility, most likely an innovation in Baltic and Slavic. Three different scenarios for the origin of accentual mobility were found to lead to different conclusions: in Kortlandt's scenario (§6.2), where accentual mobility is the result of a combination of retention of old patterns, phonetic accent shifts and structural analogy, the innovations can hardly have taken place independently: they strongly suggest a Balto-Slavic proto-language. Similarly, the scenario envisaged by Jasanoff to account for accentual mobility (§6.3) includes three accent shifts and radical analogical restructurings of the accent paradigms – processes that are so peculiar as to be understandable only as genealogically shared innovations at a common pre-stage of Baltic and Slavic. In a third scenario (§6.4) accentual mobility is regarded as the result of a phonetically conditioned accent loss with several typological parallels in other linguistic systems; if this scenario is correct, it is possible to imagine a contact-induced innovation of Baltic and Slavic, as per Andersen (2009).

Thus as long as the jury is still out on the origins of Balto-Slavic accentual mobility, this phenomenon cannot, taken in isolation, be considered to be decisive evidence for a Balto-Slavic proto-language.

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# Name-calling

## The Russian ‘new Vocative’ and its status

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Henning Andersen (2012) points out that the Russian “new Vocative” (e.g., *мам!* ‘mama!’, *Саша!* ‘Sasha!’) presents a series of unusual behaviors that set it apart from ordinary case marking. Andersen argues that the Vocative should not be considered a declensional word form of nouns. The Russian Vocative is certainly an uncommon linguistic category, but does this entail setting up a new trans-categorical derivation? Similar restrictions are found in other markers that are generally recognized as case desinences. The pragmatic use of virile vs. depreca-tory nominative plural markers in Polish and lexical and morphophonological restrictions on the “second Locative” in Russian. The restrictions found in the Vocative are certainly unusual, but no single one of them can be said to exclude a marker from being identified with a case, and one must ask what we gain by inaugurating new derivational types.

**Keywords:** Vocative, transcategorical derivation, speech acts, Russian, Polish, North Saami

### 1. Introduction: What is a Vocative?

This section sets the backdrop for discussion of the Russian “new Vocative” of the type *мам!* ‘mama!’, *Саша!* ‘Sasha!’, by broadly classifying the linguistic investigation of the Vocative. Linguists can be said to form two major groups in their approach to the Vocative, according to the part of speech they attribute to the Vocative. There are scholars who treat the Vocative as a case form of nouns, and others who suggest that the Vocative is better classed as a verbal form. Andersen (2012) stands apart from both groups by asserting instead that the Vocative constitutes a transcategorical derivation.

In their introduction to an anthology devoted to Vocatives across a range of lan-guages, Sonnenhauser & Hanna (2013: 3) make the point that despite the important



role of Vocatives in communication and first language acquisition, linguists have paid surprisingly little attention to Vocatives.

Kiparsky (1967) argues that a Vocative is a case because, like a case, it can have a distinct morphological form, and in many languages the Vocative can be replaced by a Nominative form, which no one would class as anything but a case form. Syntactic evidence for this interpretation is offered by Abuladze & Ludden (2013), Hill (2014), and Julien (2014). For example, in some languages the Vocative can show agreement within a noun phrase and can be syntactically integrated via a Vocative Phrase. However, there is also no question that the Vocative stands out as unusual among case forms, and this is pointed out even by those who support the view that the Vocative is a case form. Motivated by the Vocative's non-prototypical behaviors, Daniel & Spencer (2009) call the Vocative "an outlier case". Dissenters from the case-form interpretation of the Vocative argue that it is not syntactically integrated into the clause (cf. Isačenko 1962: 83), or, like Andersen, point to numerous peculiar restrictions associated with the Vocative (see Section 2). A further argument against the Vocative as a case form might be gleaned from diachrony, since Vocatives often behave differently than other cases. The Slavic languages provide at least two indications that the Vocative is on a different historical path than other cases: In some languages (for example Russian and Slovak), all the cases inherited from Common Slavic were preserved while the Vocative was lost (with some Vocatives reinterpreted as Nominative forms in Slovak), while in other languages (such as Bulgarian and Macedonian), the Vocative has persevered as the only form to be marked on nouns while all other cases have been lost.

While there are some merits to the proposal that a Vocative is a verb form, this alternative has fewer adherents and would require us to posit some very defective and unusual verbs with only one form each. Vocatives do mark Second Person reference, and thus share some characteristics with Imperative forms, with which Vocatives often co-occur. This point is made by Fink (1972), Jakobson (1971), and Greenberg (1996). More recently, Julien (2014) has described Norwegian possessive predicational Vocatives such as *Din idiot!* [your idiot] "You idiot!" as equivalent to a copular predication such as *Du er en idiot* [You are.INDC.PRS an idiot] "You are an idiot". However, this semantic equivalence to a copular verb construction does not require us to interpret the Vocative as a predicate. Andersen (2012) does not pursue the predicate option in any detail, but focuses instead on refuting the suggestion that the Vocative is a case form.

Andersen (2012) presents a third option: reanalysis of the Vocative as the product of transcategorial pragmatic derivation. This reanalysis is based on a long list of peculiarities that I will examine in detail in Sections 2 and 3. My aim is to ask whether these peculiarities justify such a reanalysis of the Vocative.

Establishing a new transcategorial derivation may seem to be a convenient solution for a “problem child” like the Vocative, however it comes with a price. If we suggest a new category for something because it does not fit neatly into existing part-of-speech categories, we risk creating a category that lacks a positive definition because it is based on negative values. Ideally, a part of speech should have both a clear semantic basis and a coherent set of formal behaviors. Already among existing, mostly agreed-upon parts of speech, there are items that are problematic, such as “particles”, which Zwicky (1985) argued should be eliminated from linguistic analysis given their poor theoretical basis (see also arguments against “particle” as a Russian part of speech in Endresen et al. 2016), and even “adverb”, which Herbst & Schüller (2008: Chapter 3) and Faulhaber et al. 2013 find to be far too heterogeneous to justify its use as a classification. From a practical perspective, a part-of-speech category (or a new derivational type within such a category) should be shown to improve, rather than complicate, classification tasks. One such task is Natural Language Processing, which is already plagued with part-of-speech disambiguation errors (Manning 2011), and the establishment of a new underspecified category would add to the existing challenges rather than reducing them. Finally, perhaps the biggest cost in setting up a new category is the fact that assigning Vocatives to a new transcategorial derivation necessitates changing their connection with the nouns that they are transparently related to. We must ask: Is the Vocative really so different from other case forms, does its identification as a separate transcategorial derivation buy us something that is worth the price of distancing it from other wordforms of nouns and further complicating classification?

## 2. The Russian “new Vocative” and its peculiarities

Andersen (2012) neatly details the oddities associated with the Russian “new Vocative”, which also motivate his establishment of a separate transcategorial derivation. In his own words, “it is subject to restrictions that are totally alien to case forms” (Andersen 2012: 154). I will give only a brief review of Andersen’s much more comprehensive observations here, which pertain to the domains of pragmatics, lexicon, syntax, morphophonology, and phonology.

### 2.1 Pragmatic peculiarities

Unlike other linguistic elements that direct the joint attention of the hearer and the speaker to some referent, with a Vocative “the speaker directly engages the addressee” (Andersen 2012: 135). Andersen distinguishes conative Vocatives that summon the hearer to participate in a verbal exchange with the speaker from phatic

Vocatives that maintain verbal contact in an ongoing exchange, and observes that the Russian “new Vocative” serves both conative and phatic functions. Indeed, the main (perhaps even the sole) purpose of the Vocative is to express pragmatic (as opposed to syntactic) content.

## 2.2 Lexical peculiarities

The Russian “new Vocative” is formed only from names and other nouns that can be used as forms of address, and similar to English (cf. Zwicky 1974), some kinship and common nouns in this group are more likely to appear as Vocatives than others. Andersen identifies these as primarily hypocoristics and diminutives of first names like *Свет!* (< *Света*), *Ваньк!* (< *Ванька*), patronymics both with and without first names like (*Нин*) *Николаевн!* (< *Нина Николаевна*), kinship terms like *пан!* (< *пана* ‘father’), *тётъ!* (< *тётя* ‘aunt’), and common nouns that can be used in place of a name, like *девушк!* (< *девушка* ‘girl’). This Vocative can be extended to some extent to names of pets and inanimate objects (particularly when they can be used to refer metaphorically to people). The “new Vocative” is typically singular, with a few exceptions such as *ребят!* (< *ребята* ‘guys’).

## 2.3 Syntactic peculiarities

Like any Vocative, the “new Vocative” of Russian does not engage in any syntactic relationship to a predicate or argument or any other part of a clause. It is not syntactically integrated into a clause. The Vocative is clause-independent and can function even without any other words.

## 2.4 Morphophonological peculiarities

The Russian “new Vocative” is largely limited to words ending in *-a* with penultimate or prepenultimate stress (cf. examples in 2.2, all of which conform to this constraint).

## 2.5 Phonological peculiarities

Andersen (2012) asserts that the Russian “new Vocative”, as opposed to other case forms, is formed by truncation. Alternatively, one could classify this as the use of a bare stem, or as a zero-suffixation, although Andersen prefers to label it truncation due to the lack of vowel insertion in resulting word-final consonant clusters and

lack of devoicing in final consonants, as in *девушк!* above and *Серёж!* (< *Серёжа*). However, this last feature, the lack of final devoicing, seems to be fading, as these forms tend more and more to conform to the phonotactics of modern Russian, as documented by Daniël' 2009, a fact that Andersen also acknowledges.

### 3. Similar peculiarities elsewhere in Russian and Slavic

The purpose of this section is to challenge the claim that the peculiarities of the Russian “new Vocative” are “totally alien to case forms” as Andersen asserts. Here I will cite phenomena from Russian and other Slavic languages to show that these peculiarities are not entirely unknown in case forms. They remain unusual, but not unattested.

#### 3.1 Pragmatic peculiarities

Andersen has not claimed that ordinary case cannot combine with pragmatic factors, but he has set apart the Vocative as being unusual in this way. However, there are at least two examples of other case forms in Slavic that can serve primarily pragmatic purposes rather than syntactic ones: the Polish Nominative Plural and the Czech Dative.

Polish nouns with virile (male human) reference such as *profesor* ‘professor’ admit up to three Nominative Plural endings: an honorific form as in *profesorowie*, a neutral virile form as in *profesorzy*, and a deprecatory form as in *profesory*. The difference among these forms is largely a matter of what pragmatic relationship to professors the speaker wishes to convey. If the speaker finds professors to be noble and exemplary, the honorific form can be used; by contrast, the deprecatory form quite literally “demotes” professors to the status of females, animals, and inanimate objects (Janda 1996).

Ethical datives likewise express pragmatic relationships. While Russian makes some use of ethical datives in phrases like *Кто-то наступил мне на ногу* ‘Someone stepped on my foot’, these tend to overlap in meaning with the expression of possession. Czech, for example, presents a more extensive use of ethical datives, including ones that cannot reasonably be interpreted as possessive uses, as in this example (cf. Janda 1993: Chapter 3; Janda & Clancy 2006: 96):

- (1) *Pustila jsem dceru na hory a ona ti si mi zlomila nohu!*  
 ‘I let my daughter go to the mountains and dammit, I’m telling you she broke her leg, and boy does this spell trouble for me!’ (lit.: she **you-DAT** self-DAT **me-DAT** broke leg)

This sentence has three ethical datives, only one of which, *si* ‘self-DAT’, expresses possession. The other two have purely pragmatic import. The second person *ti* ‘you-DAT’ engages the speaker in a way not unlike the phatic use of the Vocative, conveying something like ‘I’m telling you this, can you believe it?!’. The first person *mi* ‘me-DAT’ serves the pragmatic function of a complaint, conveying approximately ‘Just imagine what this means for me, how I’m going to suffer for this!’.

Of course, both the Polish Nominative case and the Czech dative case primarily serve syntactic, not pragmatic functions. However, they give evidence that case forms can have pragmatic functions, and that these can even take precedence in some contexts.

### 3.2 Lexical peculiarities

One does not have to look further than Russian to find evidence of lexical restrictions on case forms: both the “second Locative” and the “second Genitive” have lexical restrictions that are at least as strict as those for the Vocative. The second Locative, as in *в снегу* ‘in the snow’ is a case form restricted to about 150 nouns that designate concrete locations (“жесткая локализация” according to Plungjan 2002, also Janda 1996). The second Genitive, as in *выпить чаю* ‘drink (some) tea’, is largely restricted to nouns referring to quantifiable substances (Worth 1984; Janda 1996). Although the second Genitive is productive (admitting both extension to new substances like *анилин* ‘aniline’ and metaphorical extension to concepts that are perceived of in terms of mass nouns like *пафос* ‘pathos’), it is available only to about 1% of masculine inanimate nouns.

### 3.3 Syntactic outliers

The two ethical datives cited as expressing pragmatic functions in (1) are also not syntactically integrated into the sentence. Both *ti* ‘you-DAT’ and *mi* ‘me-DAT’ can just as well be removed from the sentence without disturbing its syntactic structure in the least. Here we must admit that being removable is not the same as being independent of the sentence, and that neither of these ethical datives can stand on their own in the same way that a Vocative does. But there are also examples of uses of case that are relatively independent of a sentence, such as *кому как* (lit. who-Dative how) ‘to each his own’, *кто кого* (lit. who-Nominative who-Accusative) ‘who will get who?’, and *лыжню!* (lit. ski-track-Accusative) ‘Clear the track, coming through!’

### 3.4 Morphophonological outliers

To find precedence for morphophonological restrictions on case forms, we can return to the Russian second Locative, and further cite the Russian Nominative Plural in stressed *-á*.

The second Locative is primarily restricted to monosyllabic masculine animate nouns with mobile stem stress. There are, in addition, ten nouns with polysyllabic Nominative Singular forms that can have a second Locative case form, but most of these nouns are derived from monosyllabic stems: via pleophony (*bergъ* > *берез*, *березý* ‘river bank’), diminutive formation (*бок*, *бокý* ‘side’ has diminutive *бочок*, *бочкý*), or prefixation (cf. *порт*, *портý* ‘port’ and *аэропорт*, *аэропортý* ‘airport’) (Janda 1996).

The Nominative Plural in stressed *-á*, as in *берез*, *березá* ‘river bank’, is possible only for nouns with accentual patterns that permit end stress in the Nominative (and Accusative) Plural as opposed to stem stress in the Singular. There are only two exceptions to this rule: two nouns with fixed end stress: *рукав*, *рукавá* ‘sleeve’ and *обшлаг*, *обшлагá* ‘cuff’. Like the second Locative, the Nominative Plural in stressed *-á* is also restricted largely to words that result from pleophony. In addition, this case form can be used with words that partially imitate the segmental phonology of pleophonic forms (such as *потрох*, *потрохá* ‘entrail’; *соболь*, *собольá* ‘sable’) (Worth 1983; Janda 1996).

### 3.5 Phonological outliers

Russian case forms are also known to defy the usual rules of Russian phonotactics. For example, Bethin (2012) notes that “[r]eduction of unstressed /o/ and /a/ to [ɐ] or [ə] after non-palatalized consonants and to [ɪ] after palatalized ones in Contemporary Standard Russian (CSR) is systematic. But in certain inflectional suffixes [ə] occurs instead of the expected [ɪ] after palatalized consonants.” For example, the last vowel in *дядя* ‘uncle’ should be [ɪ], but it is [ə], despite the fact that this runs counter to prevailing *иканье* in Contemporary Standard Russian. Vowel reduction is an otherwise immutable fact of Russian phonotactics, on a par with final devoicing of obstruents, which is sometimes violated by the “new Vovative”.

Another issue is the creation of word-final consonant clusters that are not broken up by vowel insertion, especially the following: *-шк*, as in *девушк!* (< *девушка*), *Машк!* (< *Машка*); *-ньк* as in *Ваньк!* (< *Ванька*); *-вн*, as in *Николаевн!* (< *Николаевна*); and *-йк* as in *хозяйк!* (< *хозяйка* ‘hostess’). However, it would be strange to require an innovative form to invoke vowel insertion eight centuries after the fall of the jers. Furthermore, all of these consonant clusters are attested

word-finally in the Russian National Corpus, and while Andersen (2012: 155–156) also acknowledges the presence of similar word-final clusters, further examples are presented here. Word-final *-ик* is found in numerous toponyms like *Кушк*, *Гиришк*, *Хараврешк*, *Деришк*. Onomatopoeic words for metallic sounds like *дзиньк* and *треньк* give independent justification for *-ньк*. In addition to the word *фавн* ‘faun’, we find final *-вн* in *королевн*, an alternate Genitive Plural form for *королевна* ‘princess’ (attested alongside the more frequent *королевен*), and toponyms such as *Фредериксхавн* and *Якобсхавн*. Popular English borrowings provide ample examples for final *-йк* in words like *лайк* ‘like (on Facebook)’, *кофе-брейк* ‘coffee break’, *ремейк* ‘remake’, *стейк* ‘steak’, *фейк* ‘fake’, and *шейк* ‘sheik’, in addition to the toponym *Клондайк*. These four word-final consonant clusters are furthermore not so exceptional, since Russian admits numerous other clusters of two, three, and even four clusters in word-final position, both in native and borrowed words, such as: *жанр* ‘genre’, *жизнь* ‘life’, *мысль* ‘thought’, *цифр* ‘number’, *кедр* ‘cedar’, *букв* ‘letters (Genitive Plural)’, *вопл* ‘shriek’, *цилиндр* ‘cylinder’, *фильтр* ‘filter’, *ансамбль* ‘ensemble’, *мертв* ‘dead’, *центр* ‘center’, *оркестр* ‘orchester’, *текст* ‘text’, *спектр* ‘specter’, *монстр* ‘monster’, *государств* ‘governments (Genitive Plural)’, *достоинств* ‘virtues (Genitive Plural)’, *удобств* ‘conveniences (Genitive Plural)’, *богатств* ‘riches (Genitive Plural)’ (cf. Holden 1978).

The final item on our list is truncation, which could also be classed under morphophonology, and which, as mentioned above, could alternatively be interpreted as the presence of a bare stem or as a zero suffix. Floricic (2011) finds that the formation of Vocatives via truncation is a widespread phenomenon typologically. Note that Andersen (2012: 154) accepts the idea of zero suffixes, but rejects the idea that the Vocative has a zero suffix. However, we find such forms routinely in the Genitive Plural of Russian nouns that have Nominative singular in *-а/-я* or *-о*. In fact, for some nouns (particularly common nouns that can be used as forms of address), the “new Vocative” and Genitive Plural are homonymous, as in *мам* (< *мама*) and *нан* (< *nana*), and both Vocative and Genitive Plural forms are robustly attested for these nouns in the Russian National Corpus. Under Andersen’s interpretation, these forms are inherently distinct, since he would class the Vocative *мам* as a truncated bare stem (a stem followed by nothing), but the Genitive Plural *мам* as a stem with a zero-ending. However, it is hard to argue that these homonymous forms are indeed perceived distinctly in this way by native speakers. If so, that point would need to be proven.

In sum, yes, the “new Vocative” does present a lot of unusual behaviors for a case form. However, none of these behaviors is without clear parallels in other case forms. From this perspective, the difference between the “new Vocative” and other

cases is more a matter of degree than essence. The “new Vocative” has more unusual features than a typical case form, but no features that can be totally excluded from what we can expect to find among case forms. Furthermore, the diachronic peculiarities are not as clear as might be presumed either. It is not really true that vocative was preserved while all other cases were lost in Bulgarian & Macedonian, since the vocative is marginal and optional in both Bulgarian (Girvin 2013) and Macedonian (Friedman 1993). The diachronic facts show a lot of variation that does not necessarily tell us anything about whether or not the Vocative is a case.

#### 4. The emergence of a “new Vocative” in North Saami

North Saami is a Uralic language spoken in Northern Scandinavia. Like its distant relative Finnish, North Saami grammar has traditionally included possessive suffixes that attach to the noun. Without the possessive suffixes, the paradigm of a noun has thirteen cells defined by case and number, and due to syncretisms, there are a total of ten unique forms, as shown in Table 1.

**Table 1.** Paradigm of noun *guoibmi* “partner” without possessive suffixes (NOM = Nominative, GEN = Genitive, ILL = Illative, ACC = Accusative, LOC = Locative, COM = Comitative, ESS = Essive, SG = Singular, PL = Plural)

NOM.SG	<i>guoibmi</i>
GEN.SG=ACC.SG	<i>guoimmi</i>
ILL.SG	<i>guoibmá-i</i>
LOC.SG	<i>guoimmi-s</i>
COM.SG=LOC.PL	<i>guimmi-in</i>
NOM.PL	<i>guoimmi-t</i>
GEN.PL=ACC.PL	<i>guimmi-id</i>
ILL.PL	<i>guimmi-ide</i>
COM.PL	<i>guimmi-iguin</i>
ESS	<i>guoibmi-n</i>

If we include the possessive suffixes, which also interact in complex ways with the morphophonemics of both the noun stem and the case endings, we add 81 more unique forms, as in Table 2, and the total number of slots in the paradigm rises to 130.



**Table 2.** 81 additional unique forms for noun *guoibmi* ‘partner’ with possessive suffixes (DU = Dual, 1 = First Person, 2 = Second Person, 3 = Third Person)

NOM.SG:	GEN.SG=ACC.SG:	ILL.SG:
1SG <i>guoibmá-n</i>	1SG <i>guoibmá-n</i>	1SG <i>guoibmá-s-an</i>
2SG <i>guoibmá-t</i>	2SG <i>guoimmá-t</i>	2SG <i>guoibmá-s-at</i>
3SG <i>guoibmi-s</i>	3SG <i>guoimmi-s</i>	3SG <i>guoibmá-s-is</i>
1DU <i>guoibmá-me</i>	1DU <i>guoibmá-me</i>	1DU <i>guoibmá-s-eame</i>
2DU <i>guoibmá-de</i>	2DU <i>guoimmá-de</i>	2DU <i>guoibmá-s-eatte</i>
3DU <i>guoibmi-ska</i>	3DU <i>guoimmi-ska</i>	3DU <i>guoibmá-s-easkka</i>
1PL <i>guoibmá-met</i>	1PL <i>guoibmá-met</i>	1PL <i>guoibmá-s-eamet</i>
2PL <i>guoibmá-det</i>	2PL <i>guoimmá-det</i>	2PL <i>guoibmá-s-eattet</i>
3PL <i>guoibmi-set</i>	3PL <i>guoimmi-set</i>	3PL <i>guoibmá-s-easet</i>
LOC.SG:	COM.SG=LOC.PL:	GEN.PL=ACC.PL(=NOM.PL 1SG/DU/PL):
1SG <i>guoimmi-st-an</i>	1SG <i>guimmi-in-an</i>	1SG <i>guimmi-id-an</i>
2SG <i>guoimmi-st-at</i>	2SG <i>guimmi-in-at</i>	2SG <i>guimmi-id-at</i>
3SG <i>guoimmi-st-is</i>	3SG <i>guimmi-in-is</i>	3SG <i>guimmi-id-is</i>
1DU <i>guoimmi-st-eame</i>	1DU <i>guimmi-in-eame</i>	1DU <i>guimmi-id-eame</i>
2DU <i>guoimmi-st-eatte</i>	2DU <i>guimmi-in-eatte</i>	2DU <i>guimmi-id-eatte</i>
3DU <i>guoimmi-st-easkka</i>	3DU <i>guimmi-in-easkka</i>	3DU <i>guimmi-id-easkka</i>
1PL <i>guoimmi-st-eamet</i>	1PL <i>guimmi-in-eamet</i>	1PL <i>guimmi-id-eamet</i>
2PL <i>guoimmi-st-eattet</i>	2PL <i>guimmi-in-eattet</i>	2PL <i>guimmi-id-eattet</i>
3PL <i>guoimmi-st-easet</i>	3PL <i>guimmi-in-easet</i>	3PL <i>guimmi-id-easet</i>
ILL.PL:	COM.PL:	ESS:
1SG <i>guimmi-idas-an</i>	1SG <i>guimmi-id-an-guin</i>	1SG <i>guoibmi-n-an</i>
2SG <i>guimmi-idas-at</i>	2SG <i>guimmi-id-at-guin</i>	2SG <i>guoibmi-n-at</i>
3SG <i>guimmi-idas-as</i>	3SG <i>guimmi-id-is-guin</i>	3SG <i>guoibmi-n-is</i>
1DU <i>guimmi-idas-ame</i>	1DU <i>guimmi-id-eame-guin</i>	1DU <i>guoibmi-n-eame</i>
2DU <i>guimmi-idas-ade</i>	2DU <i>guimmi-id-eatte-guin</i>	2DU <i>guoibmi-n-eatte</i>
3DU <i>guimmi-idas-aska</i>	3DU <i>guimmi-id-easkka-guin</i>	3DU <i>guoibmi-n-easkka</i>
1PL <i>guimmi-idas-amet</i>	1PL <i>guimmi-id-eamet-guin</i>	1PL <i>guoibmi-n-eamet</i>
2PL <i>guimmi-idas-adet</i>	2PL <i>guimmi-id-eattet-guin</i>	2PL <i>guoibmi-n-eattet</i>
3PL <i>guimmi-idas-aset</i>	2PL <i>guimmi-id-easet-guin</i>	3PL <i>guoibmi-n-easet</i>

Under normal conditions, such morphological complexity is neither problematic nor unusual (McWhorter 2007, 2011). However, morphological simplification is expected under conditions of contact pressure, especially when a significant portion of the population is made up of adult learners (Dahl 2004; Bentz & Winter 2013). North Saami is an endangered minority language spoken by survivors of decades of discriminatory language policies with heterogeneous connections to their linguistic heritage. Virtually all speakers are fluent in at least one of the contact languages: Finnish, Norwegian, and Swedish, and many of these speakers have reclaimed or even learned the language as adults. Janda & Antonsen (2016) document an ongoing change in North Saami in which possessive suffixes are being replaced

by an analytic possessive construction consisting of a reflexive Genitive pronoun (inflected for Person and Number) plus the noun (without the possessive suffix, as in Table 1). They show that the timing of this language change coincides with the history of contact pressure and repression of the language. With the exception of a few fixed expressions, the forms in Table 2 are not being propagated by the younger generations of North Saami speakers.

However, there is one use of the North Saami possessive suffix that survives, even in the youngest generation of speakers, namely the use of the First Person Singular possessive suffix on Nominative Singular nouns that are either proper names or can be used as forms of address, as highlighted in the shaded box in Table 2 and illustrated in Example (2):

- (2) *Gula, máná-ž-an.*  
 listen.IMP.2SG child-DIM.NOM.SG-1SG.POSS  
 ‘Listen, my little child.’  
 (IMP = Imperative, DIM = diminutive, POSS = possessive)

Unlike the more typical traditional anaphoric use of the possessive suffix, in Example (2), we see an exophoric use depending entirely on the pragmatic relationship of the speaker addressing the hearer. As is common for a Vocative, this use of the possessive suffix co-occurs with both a diminutive suffix (-š which becomes voiced -ž intervocally) and an Imperative verb form. Such exophoric Vocatives in North Saami “are restricted to kinship terms, names, metaphorical names for people, and names or words for animals that are addressed as if they were people” (Janda & Antonsen 2016:357). Janda & Antonsen (2016) argue that the interpretation of *-(-ž)-an* [-(DIM).NOM.SG-1SG.POSS] as an emerging Vocative case marker in North Saami is in line with the interpretation of other productive forces in the language, such as *-ráigge* [-‘hole’] as a “prolative” case marker in examples like *uksa-ráigge* [door.GEN-hole] ‘through the door’ and *bálgges-ráigge* [path.GEN-hole] ‘along the path’ (Ylikoski 2014). The reinterpretation of the remaining possessive suffix as a Vocative case is part of the overall loss of the complex portion of the noun paradigm represented in Table 2, with the remaining form being “recycled” into a new role as a case marker (cf. similar examples of “recycling” of linguistic forms over time in Lass 1990 and Janda 1996).

## 5. Conclusions

Andersen (2012) has provided us with a meticulous inventory of the atypical behaviors of the Russian “new Vocative”. While this list is certainly impressive and there is clearly no other case in Russian that displays so many unusual features, none of

the peculiarities of the “new Vocative” are entirely without precedent in Russian and Slavic case systems. This means that we can interpret the divergence of the “new Vocative” from other case forms as a matter of degree rather than principle. Floricic (2011) argues that the clearest characteristic of Vocatives is their marginal status in the case system, and that it is natural for a case system to have both central and peripheral members. Janda & Antonsen (2016) have detailed how the emergence of a Vocative can be understood as part of the life cycle of the case system of a language, even one that is under extreme contact pressure.

There are some clear advantages to keeping the Russian “new Vocative” in the family of case forms. On the theoretical level, this preserves the relationship between the Vocative form and the noun that anchors the paradigm. Recognizing the Russian “new Vocative” as a case form makes it possible to avoid proliferation of categories among parts of speech, which are problematic in practical tasks, such as Natural Language Processing. For example, when confronted with a form like *мам*, our task is easier if we have only to distinguish between a Vocative and a Genitive Plural, without the possibility of also making an error at the level of the part of speech. This interpretation is also in line with that of the majority of scholars as well as the authors of the Russian National Corpus.

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# Changes of tense and modality in Late Mediaeval Slovene

## Transference, extension or both?

Jadranka Gvozdanović

The paper analyses the typology of change processes proposed by Andersen (2001, 2006) by minutely investigating semantic and pragmatic properties of temporal categories in the earliest Slovene texts, which emerged under German cultural influence, but preserved primacy of system-motivated developments.

**Keywords:** system-internal extension, modification, Slovene tenses, aspect, *Freising Fragments*, Trubar's *Catechismus*

### 1. Introduction<sup>1</sup>

In his seminal paper on actualization, Andersen (2001) discusses the following types of changes:

- Coinage is a pragmatically motivated innovation, coining a new linguistic unit or a morphosyntactic combination to achieve a communicative goal and actualize this innovation in speech;
- Remedial change is also pragmatically motivated: one or more individual speakers draw on their (meta)grammatical competence to circumvent an awkward or dysfunctional expression;
- Borrowing is pragmatically motivated as well: speakers draw on another oral or written tradition to satisfy a communicative need;
- Extension has no particular pragmatic motivation: one or more individual speakers extend the referential potential of a received lexeme or construction, extend contextual applicability of a construction, or the applicability of a morphophonemic rule;

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1. I am grateful to Iván Igartua for his insightful comments on the paper.

- Transference and interference are also not pragmatically motivated; like borrowing, transference and interference are contact changes, but they primarily concern rules (i.e. lexical, syntactic, morphosyntactic rules) that are being transferred from another language to the speaker's first language (transference), or from the speaker's first language to another language spoken by him (interference).

Each of these changes can be analyzed in subchanges of adoption, reanalysis and actualization. This becomes especially interesting when speakers of a single community end up having different underlying analyses. For such instances Andersen assumes that the different actualized outcomes are corrected in correspondence with the usage rules, which accompany any structural analysis.

The interesting question that remains open in this analysis is: when does a new actualized outcome that differs from the preceding one become accepted and when is it rejected. Andersen (2001) elaborates on markedness conditions, but the core of this question seems more essential and complex.

This paper discusses tense and aspect developments in the late Middle Ages in a prototypical contact area: mediaeval Slovene in contact with sociolinguistically dominant German. The aim is twofold: to shed light on details of ongoing processes in the main realms of temporality and modality, and to evaluate them against the background of the proposed change typology.

I view tense in line with Reichenbach (1947) and Comrie (1975) as placement of the event situation relative to (1) the time period of the deictic centre (i.e. the primary origo) and (2) the narrative reference period (i.e., the secondary origo). Tense is a property on the level of the predication. Aspect, on the other hand, is a property of predicates. Lexical aspect specifies the predicate spatially and temporally concerning boundedness and possibly quantification; it is a property of the verb with its valencies. Grammatical aspect imposes a temporal framing on the predicate by specifying the relation between its Event time and the Topic time (i.e. the time frame for which the assertion of the verb event holds) in the sense of Klein (1994).<sup>2</sup> In other words, tense is basically a matter of temporal sequencing and grammatical aspect of temporal framing.

In a contrastive Slavic context (in line with Dickey 2000 etc.), Slovene belongs to the western type. The grammatical aspectual opposition between the perfective and the imperfective aspect in the western group of Slavic languages has been defined by Gvozdanović (2012) as follows:

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2. Referred to as 'narrated event' by Jakobson (1956) and e.g. Barentsen (1998).

- In the perfective aspect, the Event time is a subset of the Topic time (i.e.  $TSit \leq TT$ )<sup>3</sup>
- In the imperfective aspect, the Topic time is a proper subset of the Event time (i.e.  $TT < TSit$ ), cf. Gvozdanović (2012:795)

There is an essential similarity between tense and aspect because both involve the temporal dimension, yet on a different level. Language developments testify to this similarity by interconnected and sometimes ambiguous developments. For example, Proto-Indo-European may be assumed to have had temporal categories in which tense and aspect coalesced (by most authors referred to as aspect): so-called retrospective (i.e. Perfect), prospective (i.e. Future), absolute (i.e. Present, sometimes called ‘actual’), Aorist (i.e. past temporally delimited) and Imperfect (i.e. past ongoing). In various older Indo-European languages (cf. e.g. the development from the earliest Vedic to Sanskrit) we can trace the development from aspect to tense by a complex series of semantic shifts (e.g. Kiparsky 1998). The merger of Aorist and Perfect (e.g. in Latin) proceeded along similar lines.

For the passage from Proto-Indo-European (PIE) to prehistoric (and finally early historical) Slavic, Andersen (2013: 2–3) assumed the following three phases:

1. The first phase, in which the aspect system inherited from PIE is stepwise reduced: the PIE Perfect (called by Andersen ‘stative’ aspect) is degemmatized, the Future (‘prospective’) lost, and the Aorist merges with the Imperfect into a general Preterite. Analytic telic aspect becomes grammatized and adverbial telicity markers develop from words to clitics to prefixes (in accordance with Ivanov 1964; Pinault 1995).
2. In the second phase, grammatical aspect pairs are formed (as Andersen puts it, from telic action verbs). Perfective (telic) procedurals (in which a temporal phase of the verb event is focused, e.g. in *po-* derivatives in Slavic, denoting a stretch of time) and (atelic) imperfectiva tantum (in accordance with Maslov 1948) remain outside of the system of grammatical aspect oppositions.
3. In the third phase, “the other aspects known from Old Slavic texts are grammatized, Imperfect/Aorist, determinate/indeterminate, retrospective/absolute, prospective/actual” (Andersen 2013:3).

The inner logic of aspectual oppositions being lost during an intermediate period of Late Common Slavic and then reintroduced along comparable lines seems

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3. A proper subset is always smaller, whereas a subset allows the possibility of coalescing boundaries. In the western type of Slavic aspect, the Event time is a subset of the Topic time, and in the eastern type, it is a proper subset by the differences discussed by Dickey in various writings since (2000) and the analysis proposed in Gvozdanović (2012).



somewhat mysterious. Or to put it in other words: in view of Andersen's (2006) classification of change types as grammation (change of any content to grammatical content), regrammation (reanalysis of a grammatical content to a different grammatical content), or degrammation (loss of grammatical content), should we assume that the PIE Aorist becomes a general Preterite in Slavic by regrammation, and then an Aorist again alongside the newly introduced Imperfect? Was it an instance of grammation or regrammation? And how about retrospective and prospective: were they grammated as aspects or as tenses? Andersen (2006: 235) calls retrospective/absolute and prospective/actual 'aspects' that characterize the tenses: Present, Aorist, Imperfect, Future (i.e. 'absolute tenses') and Perfect, Pluperfect (I and II), and Future Perfect (i.e. 'retrospective tenses'). The citation from Andersen (2013) given above points to a slightly different conceptualization and motivates further investigation.

Eckhoff and Janda (2013) analysed the Aorist, Imperfect and Retrospective (i.e. Perfect) in the earliest preserved Old Church Slavic texts from the beginning of the second millennium AD as "inflectional aspects", distinguished from "derivational aspects" formed by means of prefixation (i.e. lexical aspects).<sup>4</sup> Based on corpus analysis, they showed that lexical aspect and in a nutshell grammatical aspect already existed in Old Church Slavic, but was less developed than e.g. in modern Russian.

This still does not answer the question whether the so-called inflectional aspects (particularly the Aorist and Imperfect) were aspects or tenses in the earliest Slavic texts.

The present contribution aims to answer this question by investigating the relation between so-called derivational and inflectional aspects in mediaeval Slovene. The main hypothesis is that the development of so-called derivational aspect by means of affixation triggers the (re)introduction and reanalysis of the Aorist and Imperfect as tenses (in line with developments in other Indo-European languages, cf. Gvozdanović 2016).

The analysis presented here starts from the Freising fragments, a text based on an 8th century original from the transitional phase between Late Common Slavic and Slovene, preserved in a copy from around the year 1000 ascribable to the earliest stage of Slovene in western Pannonia. This religious text belongs to the earliest heritage of Slavic; it represents an early religious heritage that remains preserved in Slovenia until Trubar's days in the 16th century. This enables a good comparison of the investigated linguistic signs.

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4. The Present, Aorist and the Imperfect were synthetic formations, whereas the Perfect, Pluperfect and Future were analytic (i.e. composite) formations of an active participle for the past and a participle or infinitive for the future combined with an auxiliary.

## 2. Slovene between the Freising fragments and the Rateče manuscript

Since the earliest Slavic inhabitation of western Pannonia and the Alpine regions, neighboring to Germanic, by the Alpine onomastic evidence Venetic, and to a lesser extent Romance areas, there was a potential for *Sprachbund* phenomena. However, transference phenomena in the realm of grammar were mainly accompanied by some kind of extension, as can be illustrated by developments of tense and aspect.

### 2.1 The past tenses in the Freising fragments

The Freising fragments are the earliest written document from a Slovene territory, presumably composed in the 8th century (cf. Ramovš and Kos 1937); they consist of three parts, written by different hands. The first part contains accent marks and was presumably meant to be read during sacral services. Depending on the interpretation of the notational conventions (particularly the accent marks, cf. Gvozdanović 1989), the preserved copy may represent the earliest stage of the specifically Slovene phonological and prosodic development.<sup>5</sup> The morphosyntactic properties can be classified as Late Common Slavic.

Concerning the inventory, the texts contain Present, Aorist, Imperfect, Perfect, simple Future (i.e. perfective Present), Conditional and numerous passive forms. In all the three parts, the Perfect and the Aorist occur, the Imperfect occurs only in the second Freising fragment. The Perfect occurs five times with *stvoriti*, a perfective verb in the meaning 'do, perform' (whereas it occurs in the Aorist in the meaning 'create'), two times with *povedati* 'tell', once with *ukazati* 'rule', once with *ne spasati* 'not obey', once with *xoteti* 'will' and once with *račiti* 'count on, wish'. The first three verbs are perfective, whereas the latter three are biaspectual. This restricted combinability of grammatical aspect with the Perfect tense contrasts with a much more balanced combinability of both aspects with the Aorist and the Imperfect. Example (1) contains Aorists of imperfective verbs (whereas Aorists of perfective verbs in later texts by far outnumber imperfective Aorists) and Imperfects of perfective verbs (which become a rarity afterwards). The Aorist denotes a past temporally delimited event, and the Imperfect, past ongoingness.

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5. This was disputed by Kortlandt (1975) based on the analysis of the yers and nasal vowels; he assumed that unaccented \*ŷ was rendered as <u> and accented as <o>, but could not explain several examples of accented final \*ŷ rendered as <u>. In contrast, Holzer (1986) provided a much simpler explanation independently of accent; this was essentially endorsed by Woodhouse (2008). Schaecken (1987) offered a different analysis, discussing the accent marks as diacritics, not as marks of accentuation.

The semantic distinction between the Aorist and the Imperfect may be illustrated by the following lines (44–58) from the second Freising fragment.<sup>6</sup> (In the superscripts, A denotes the Aorist and I the Imperfect, both in the original text and the translation). The examples are given in the original notation.

(1) Freising fragment II: 44–58

- Tîge se mosem i mui estebuiti, eccę tage dela  
 nasnem delati, iase o  
 ni delase<sup>A</sup>. Onibo las  
 na natrovuechu<sup>I</sup> seg  
 na naboiachu<sup>I</sup> bozza  
 obuiachu<sup>I</sup> naga ode  
 achu<sup>I</sup> malo mogoncka  
 uime bosie bozzekacho<sup>I</sup>  
 mrzna zigreahu<sup>I</sup> stran  
 na bodcrovvi zuoge  
 uvedechu<sup>I</sup> Utim  
 nizah iuzeleznih  
 vvosich Uclepenih  
 bozcekachu<sup>I</sup> Iuime  
 bosie te utessahu<sup>I</sup>  
 temi temitize deli  
 bogu briplisaze<sup>A</sup> taco  
 ,We can still be like them,  
 if we perform the same deeds  
 as they performed<sup>A</sup> For they  
 fed<sup>I</sup> the hungry, gave<sup>I</sup>  
 45 the thirsty to drink,  
 shod<sup>I</sup> the  
 barefooted, clothed<sup>I</sup> the  
 naked, visited<sup>I</sup> the infirm  
 in the name of God,  
 50 warmed<sup>I</sup> the cold,  
 brought<sup>I</sup> in the stranger under  
 their rooves, visited<sup>I</sup> people  
 in dungeons and fettered  
 in iron chains,  
 55 and in the name  
 of God comforted them.

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6. I refrain from grammatical glossing of this textual part for reasons of its length. The text is given in the original writing, because the phonetic reading is partly disputed.

With these, with these deeds  
They drew<sup>A</sup> near to God.<sup>6</sup>

(Translation by Gerald Stone, *Brižinski spomeniki* 1993: 124)

This textual fragment about past events begins with an Aorist of the imperfective verb ‚do, perform‘, reporting about deeds of former people believing in God. Their deeds were ongoing, but the time-frame was delimited by their lifetime. This textual fragment also ends with an Aorist of an imperfective verb (‘drew’). Whereas the verb tells us that the former believers drew near to God, the Aorist adds the meaning of temporal delimitation, suggesting by implicature that these people are now in God’s vicinity.

These Aorists were formed from imperfective verbs, but other examples contain Aorists of perfective verbs, as in Example (2) from the first Freising fragment (lines 27/28).

- (2) Bose      ti      pride<sup>A</sup>      zenebeze. v’se      zeda<sup>A</sup>  
 God-VOC thou come-PERF AOR.2.SG from Heaven already  
 vmoku.                      za vui’z                      na’rod.  
 give-REFL.PERF.AOR.2.SG into torment for all mankind  
 ‘Oh God, thou camest from Heaven and already gavest thyself into torment  
 for all mankind.’

The Imperfect was used with imperfective verbs to denote past ongoingness, as in (3) from the second Freising fragment (lines 97–99), and with perfective verbs to denote past repetition (as shown by the perfective Imperfects in lines 5–11, 14 and 15 in Example (1)).<sup>7</sup>

- (3) preise                      nassi zesztoco  
 predecessor-PL              our-PL cruelly  
 stradacho                      nebo ie  
 suffer-IMPERF.IMP.3.PL for they-ACC.PL  
 tepechu                      metlami  
 beat-IMPERF.IMP.3.PL birches-INSTR.PL  
 ‘Our predecessors suffered cruelly for they beat them with birches.’

We can see that the Aorist and the Imperfect were autonomous and combinable with both aspects, perfective and imperfective. Derivation of secondary imperfective verbs (used to derive aspectual pairs) was not yet fully developed. In the Freising fragments, the Imperfect had a semantic effect comparable to secondary

7. The full system of aspectual pairs of that period is not known to us. In the Imperfect in this text, by our knowledge we find nine perfective and seven imperfective verbs.

imperfectivization. Crucially, however, both the Aorist and the Imperfect denoted past events, and this core meaning justifies their classification as tenses.

Concerning the distinction between the Aorist and the Perfect, compare the following lines from the third Freising fragment (lines 9/10 and 30/31).

(4) Aorist:

gozpod zuueti. ise zuori nebo. (9/10)

Father Holy who/that create-AOR.3.SG Heaven

'The Holy Father who created Heaven'

Perfect:

Ese iezem uuede ztuoril. ili neuuede. Nudmi ili

That have-1.SG knowingly done or not knowingly forced or

lubmi zpe ili bdê.

willingly sleeping or awake

'That I have knowingly done or not knowingly, forced or willingly, in sleep or wakefulness'

These examples show that the Aorist conceptualizes a specific past event, whereas the Perfect conceptualizes a specific effect or an unspecific past event. The Aorist places the referential focus on the past event, and the Perfect on its effect. Even though this contrast may be called absolute/retrospective, its semantics rests on a different placement of the secondary origo and can therefore be classified as tense.

## 2.2 The Rateče manuscript

The Rateče manuscript from the 14th century (written presumably around 1380 in the Upper Carniolan area) contains three texts: the Lord's Prayer (Holy Father), Apostel's Creed and the Hail Mary. The Lord's Prayer pertains to a similar Pannonian religious tradition as the Freising fragments. The language is slightly different, though, to be clearly seen in the tense system. There is no Imperfect and the Aorist has very limited occurrence, restricted to verbs of determinate movement (i.e. movement in one direction, with the implicature of reaching the goal) and perfective verbs. Here are the relevant lines from the Rateče manuscript (In the superscripts, A denotes the Aorist, D determinate movement, PERF perfective aspect, I imperfective aspect, PRES the present tense).

- (5) Yaft veruyo wu boga othfcho wfemogotfchiga ftwar-  
nika nebefš yno femlee. Yno wu ihefuffa cristuffa  
nega fynu edyniga naffiga gofpodi kyr ye poczett  
od fwetiga ducha royen ys diwittcze marie martran pod  
poncio pylatuffem na kriz raffpett martaw yno wu

grab polofen dolu yide<sup>D,A</sup> kch paklu na trettyi dan gori  
 wf̄taa<sup>PERF,A</sup> od martwech. Gory yiede<sup>D,A</sup> w nebeffa feydi<sup>I.PRES</sup> kch deff-  
 nuttczy boga of̄tche wf̄mogotf̄chiga od tody kch iyma<sup>I.PRES</sup>  
 priti foditi fywe yno mortwe.

‘I believe in God the Allmighty Father, the Creator  
 of Heaven and Earth. And in Jesus Christ,  
 his only Son our Lord, who was conceived  
 by the Holy Spirit, born by Virgin Mary, tortured under  
 Pontius Pilatus, crucified on a cross, died and  
 layed down into the grave, went down to Hell, on the third day  
 stood up from the dead. He travelled up to Heaven, is sitting to  
 the right of God, the Allmighty Father, from where he is to/ will  
 come to judge the living and the dead.’

This fragment contains the only Aorist forms in this manuscript ; they occur with perfective verbs and with determinate verbs of movement, a restriction that reminds us of the grammatical aspect combinable with the Perfect in its early stages in the Freising fragments. On the other hand, the Perfect has now (by the 14th century) broadened its cominability to include verbs of both aspects. This is a reversal of the markedness relation observed in the Freising Fragments, where the Perfect was heavily restricted.

The Rateče manuscript already exhibits signs of replacement of the Aorist by the Perfect, attested as a widespread process across Slavic except in the south-east. It is usually assumed that the Perfect is extended to narrative contexts where it assumes the non-retrospective functions of the Aorist (cf. Ivanov 1982: 97–107; Andersen 2006: 241), but what we see here is a narrowing of the spectrum of the Aorist and its replacement either by historical Present or the Perfect.

### 3. Trubar’s Catechismus 1550: How much did Luther’s Catechismus influence Trubar’s Slovene

The lines highlighted by our analysis of the Lord’s Prayer in the Rateče manuscript from the late 14th century can be almost literally found in Luther’s “Der kleine Catechismus” (1529), given in (6), and in Trubar’s Catechismus (1550), given in (7). Given the fact that the Rateče manuscript is assumed to go back to a 9th century Pannonian tradition (cf. Grafenauer 1958), this sheds new light onto the origins of Luther’s “Der kleine Catechismus” as well.<sup>8</sup>

8. In the notation, AUX denotes auxiliary, PERF perfective, D determinate movement verb, I imperfective.

- (6) Und an Iesum Christum, seinen eingebohrnen Sohn unsern Herrn, der empfangen ist von dem heiligen Geist, gebohren von der Jungfrauen Maria, gelitten unter Pontio Pilato, gekreuziget, gestorben und begraben, niedergefahren zur Höllen, am dritten Tage wieder auferstanden von den Todten, aufgefahren gen Himmel, sitzend zur Rechten Gottes der heiligen Vaters, von dannen er kommen wird zu richten die Lebendigen und die Todten.

(Luther 1529, Der kleine Catechismus, Chapter 15)

‘And in Jesus Christ, his only Son our Lord, who was conceived by the Holy Spirit, born by Virgin Mary, suffered under Pontius Pilatus, was crucified, died and was buried, travelled down to Hell, on the third day was resurrected from the dead, ascended to Heaven, is sitting to the right of God the Holy Father, from where he will come to judge the living and the dead.’

- (7) Inu iest Verio na Iesusa Cristusa synu nega diniga Gospudi nashiga. Kir ie<sup>AUX</sup> pozhet od suetiga Duha, Roien is Marie te diuice, Terpil<sup>PERFECT</sup> pod Ponciom Pilatushom. Cryshan, vmerl<sup>PERFECT</sup>, inu pocopan. Doli shal<sup>PERFECT</sup> htim pek-lom. Na treti dan gori vstane<sup>PERF.PRESENT</sup> od smerti. Gori gre<sup>D.PRESENT</sup> vta nebessa. Sidi<sup>L.PRESENT</sup> na destnici Boshy tiga Ozheta Vsigamogozhiga. Od tot on pride<sup>PERF.PRESENT</sup> soditi te shiue inu te mertue.

(Trubar 1550, Catechismus, Chapter 15)

‘And in Jesus Christ, his only Son our Lord, who was conceived by the Holy Spirit, born by Virgin Mary, has suffered under Pontius Pilate. He was crucified, died and was buried. Down he went to Hell. On the third day he stood up from the dead. Up he went to Heaven. He is sitting to the right of God the Almighty father. From there he will come to judge the living and the dead.’

Luther’s German text is very instructive. It is entirely based on a series of participles, active and passive not distinguished in form, up to the final Future tense. The Slovene text exhibits strong German influence in the usage of the demonstrative pronoun, in congruence patterns (*verio na* ‘believe on’ instead of ‘believe in’, cf. German *glauben an*) and borrowings (e.g. *martran* ‘tortured’), but not in the realm of tense: the active and passive participles remain distinct, the Perfect exhibits a broadened usage for past events, except for temporally specific past events, for which the historical Present is used. This temporal specificity, once a feature of the Aorist, remains a last vestige not accessible to the Perfect (but rather expressed by the historical present).

The strengthened usage of participles in the German language of the late Middle Ages may have been a catalyst for the strengthening of the Slovene Perfect (composed of the active past participle and the auxiliary ‘be’), but its development was clearly rooted in the system-internal development of the category of grammatical aspect (cf. also Merše 1995; Krviná 2015 concerning the development of the aspect system in the 16th century Slovene) with the potential to functionally compensate for the contrast between the Aorist and the Imperfect.

In German, the Perfect was an Old High German formation (probably from the 8th century). For its formation by means of an auxiliary and a participle (active and passive participles coalesced) it was Latin that may have provided a model, because Latin had passive perfects whose meaning was neither past (or anterior) alone, nor passive alone (as analysed by Drinka 2017: 114).<sup>9</sup>

Later expansion of the Perfect at the expense of the German Preterite (a past tense comparable to Slavic Aorist and Imperfect) was attested since the Middle High German period. Solms (1984) undertook a systematic investigation of texts between 1350 and 1700 and found (cf. 1984: 311) a predominant percentage of Preterites (i.e. 61%) in the narrative texts of the first period (1350–1400), but their slow decay ending at only 25% in the narrative texts of the last investigated period (1650–1700).<sup>10</sup> At the same time, the participle-II forms became significantly more frequent, from 39% in the first period to 75% in the last period.<sup>11</sup>

Dentler (1997) showed that the German Perfect increasingly acquired Preterite readings. In the 11th century, the Perfect had 98.8% Perfect readings (of a temporally indeterminate past event with actual effects) and 1.2% Preterite readings (of a specific past event). In the 16th century (the period of interest to us), the German Perfect had 77.6% Perfect readings and 20.9% Preterite readings. Apparently, this was a slow process (Fischer 2016 pointed to additional factors such as increased use of temporal adverbs, and on other hand formal opaqueness conditioning the Preterite loss) and this process lasted in German significantly longer than in Slovene.

The Slovene process of the Perfect taking over Aorist and Imperfect (i.e. Preterite) readings was significantly accelerated by the presence of grammatical aspect. By the 16th century, grammatical aspect was sufficiently developed to enable functional replacement of the Aorist and Imperfect by the Perfect or the historical Present.

In the realm of Future, Slovene also exhibits developments only in part parallel to the German ones. This concerns particularly the division between future temporality and modality. The German modal verb *sollen* 'should' is in Luther's Catechism used for deontic and (secondarily) epistemic modality. The Slovene late mediaeval translation of *sollen*, *imati* 'should, have to' remains basically modal, although future temporal transposition may be a secondary reading. In 16th century Slovene, future reference was a contextually conditioned reading of the perfective Present, and the Future proper was formed by means of the perfective 'be' auxiliary combined with an active past participle.

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9. In addition, French influence on the German territories until the fourteenth century may have played an important role (cf. Drinka 2017: 259).

10. Solms (1984) distinguished four periods: 1350–1400, 1450–1500, 1550–1600 and 1650–1700.

11. The texts were of course not fully comparable, but the percentages exhibit a clear and steady movement.



- (8) Es bedeutet, dass der alte Adam in uns durch tägliche Reue und Busse soll ersäuffet werden, und sterben mit allen Sünden und bösen Lüsten, und wiederum täglich heraus kommen, und auferstehen ein neuer Mensch, der in Gerechtigkeit und Reinigkeit, für Gott ewig lebe.

(Luther, Der kleine Catechismus, Chapter 6)

‘It means that the old Adam in us should be drowned by daily contrition and repentance, and die with all sins and evil desires, and again daily shall come out and stand up a new Man, who in justice and purity may live forever for God.’

- (9) On pomeni, de ta stari Adam, kir notri unas prebiua, *ima*<sup>M</sup> vsag dan potopen biti skusi to greuingo inu procuro, Inu de *ima*<sup>M</sup> vmreti so vseimi grehi tar hudimi shelami. Inu *ima*<sup>M</sup> spet vsag den se isprossiti inu gori vstati en Nouzhlouik, de ta isti vshe naprei vti prauici inu zhistosti pres vsiga greha, vselei bode<sup>PERF.PRES</sup> shiu pred Bugom.

(Trubar, Catechismus, Chapter 6)

‘It means that the old Adam, who persists within us, should be drowned each day through contrition and repentance, and die with all sins and evil desires, and again each day a new Man shall come out and stand up, that will forever in justice and purity without any sin be alive in front of God.’

We can consequently identify uses of *ima* ‘he/she/it shall, should, has to’ for deontic and epistemic modality (probably epistemic as an extension from deontic modality), and of *bode* ‘will’ for the Future tense and subjective modality (probably an extension from epistemic modality). Slovene *imati* corresponds to German *sollen* in deontic and epistemic readings, but Slovene perfective ‘be’ (*bode*) has multiple German correspondences: with *werden* (*wird* ‘will’) in Future or epistemic uses, but with the Subjunctive in subjective modality. The development of tense (and the associated modality) was in Slovene firmly rooted within the existing system.

#### 4. Conclusions

The conclusions of this survey are twofold: concerning the specific Slovene changes in the context of persisting German influences, and concerning their classification.

The presented analysis shows that the Aorist and the Imperfect were reintroduced in early Slavic as tenses. Specifically, the Aorist – the only surviving past tense – was shown to have undergone the development from aspect to tense, i.e. it was regrammatized. The new Imperfect has also been introduced as a tense, i.e. grammatized. The periphrastic expressions for retrospective (i.e. Perfect and Pluperfect) developed only gradually during the late Middle Ages, but the Freising fragments exhibit grammation of the Perfect denoting current relevance of a past event (in line with Comrie’s 1975 analysis of the Perfect as tense). The prospective,

i.e. Future, appears as a temporal variant of epistemic and subjective modality, in a way only partly reminiscent of German models in Luther's texts. Here these two languages had idiosyncratic grammation processes.

For the specific Slovene changes in the context of German influences, similarities in modal domains, but differences in tense developments could be established.

By the criterion of relative chronology, the Slovene loss of the Aorist and the Imperfect began earlier than in German and proceeded faster than in German. By the distributional criterion (the loss of the German Preterite started in the south, in the areas neighboring to Slavic), it could have been a *Sprachbund* areal development, but the spread throughout Slavic independently of German contradicts this assumption. Moreover, German was culturally dominant, but it did not lead in this change in a time perspective.

By the system-internal criterion, the loss of the Aorist and Imperfect in Slavic hinged on the developed system of grammatical aspect and relatively free employability of the historical Present tense; in southern German, supplementary means (such as adverbs) were required to compensate for the Preterite loss. In this sense, both processes involved extension in a different way.

We have seen that contact of language and culture, in itself always pragmatic in nature, was a stimulus for internal developments of extension (of the Perfect) and transference (presumably of modality) in accordance with the existing system. However, these changes also included a pragmatic (i.e., information-driven) element, albeit not central to the speakers' (decision making) behavior, but to their construal of parts of the language system.

Concerning change typology, the discussed developments give support to Andersen's (2001, 2006) typologies of change processes, but they show at the same time that system-internal extension and modification are the basic processes also in contact situations. System-internal implementability seems to be an important criterion for communicative acceptance of change.

## Abbreviations

A, AOR	aorist	P	person
ACC	accusative	PERF	perfective aspect
AUX	auxiliary	PL	plural
I, IMP	imperfect	REFL	reflexive
IMPERF	imperfective aspect	SG	singular
INSTR	instrumental		

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This volume centers on three important theoretical concepts for the study of language change and the ways in which language structure emerges and turns into new structure: reanalysis, actualization, and indexicality. Reanalysis is a part of ongoing everyday language use, a process through which language is reproduced and changed. Actualization refers to the processes through which a reanalyzed structure spreads throughout single communities and society. Indexicality covers the way in which parts of a linguistic system can point to other parts of the system, both syntagmatically and paradigmatically. The inclusion of indexicality leads to fine-grained analysis in morphology, word order, and constructional syntax.

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