Blending, from English to Arabic

Ekhlas Ali Mohsin

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To
My Great Family

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Preface

This book aims to address the gap in the field of studying Arabic blends. It examines their structure in the light of the blend-formation tendencies that have been identified based on examining some prosodic features of blends in English.

Blends in Classical Arabic are generally formed by joining the first two root consonants of each source word and imposing the prosodic pattern *CaCCaC* on them. Typical examples of Classical Arabic blends are /ʕab.dar(ij)/ "someone from the family of Abdul Dār" < /ʕabd/ "slave" and /da:r/ "house", and /ʕab.qas(ij)/ "someone from the family of Abdul Qays" < /ʕabd/ "slave" and /qajs/ "a male name"—names for Arab tribes in the 6th Century AD. However, such Classical blends are a few. However, the numerous blends that have been formed in Arabic in recent times do not appear to follow this root-and-pattern template. Examples are /faw.sˤawt(ij)/ "supersonic" < /fawq/ "above" and /sˤawt(ij)/ "sound", and /qab.ħarb/ "pre-war" < /qabl/ "before" and /ħarb/ "war".

The literature on Arabic linguistics does not show an in-depth investigation of the structure of modern Arabic blends; hence, this book aims to uncover the regularities that are found in these modern formations and in that way contributes to understanding the structure of Arabic words in general and blends in particular. The book also explains to what extent the blend-formation tendencies identified in English apply to blend formation in Arabic.

The main blend material used in this book consists of established blends found in the literature on Arabic word-formation and novel blends created by native speakers in tasks specifically set up to address the assumption made in this book. The established Standard Arabic blends were examined to identify any tendencies in their formation that seem to be specific to Arabic and to, afterwards, determine if such tendencies are also found in the novel blends.

Quantitative analysis of the established and novel Arabic blends demonstrates that there is a high degree of resemblance between modern Arabic blends and English blends as far as their prosodic features are concerned.

This book is the revised version of my PhD Thesis in Linguistics and English Language at Newcastle University. I would like to dedicate this

book to my Great Family (Parents, Husband, Sister, and two Sons). Many thanks go to Dr William van der Wurff and Dr Adam Mearns who were my supervisors for the PhD. I would like also to thank my examiners Dr Elisa Mattiello and Dr Carol Fehringer for their invaluable comments and encouragement to publish my thesis as a book. Thanks and gratitude go to Dr Bashaer Al-Otaebi and Dr Maha Jasim for their comments and support.

1. Introduction

1.1. Preliminaries

It is noticed in our daily life as well as on several TV shows or series that speakers of Arabic use a technique by which they join two words in one word to jointly convey the meanings of the base words. One word was /laj.su:n/, which the person using it explained as a soft drink made from /laj.mu:n/ "lemon" and /ja:.na.su:n/ "anise". Another word was /ja.ta.ɣa:.ðˤam/; the person using it said it was formed from /ja.ta.ɣa:.dˤa:/ "ignore" and /ja.ta.ʕa:.ðˤam/ "increase". My household also made a good source for forming blend words for me. My eldest son (born in Baghdad in 2004, living in the UK ever since 2013) when he was 10 years old, formed the blend *fewseum* referring to a "museum" visited by "few" people, without being aware of the word *Newseum* (in Washington DC), which has a similar pattern: *new* + *museum*. Another word which was *Monsday* formed by my youngest son (born in Baghdad in 2011, living in the UK ever since 2013) explained to me that it referred to a trip that extended from *Monday* to *Wednesday*. My husband and I were not an exception for we also had our own blends in Arabic, English or French. My husband formed the blend /tˤan.tˤa.wi:l/ in Iraqi dialect with the meaning "extremely, hugely tall" from <tˤan.tˤal> "a mythical creature that is huge, tall and scary" and <tˤa.wi:l> "tall". One of my blends in Arabic was /ɣa.ʃa:ʔ/ "dinner" from /ɣa.da:ʔ/ "lunch" and /ʕa.ʃa:ʔ/ "supper", in English was *Hollangium* referring to Baarle-Hertog, a village divided at the borders between *Holland* and *Belgium*, which I also Arabised into /ho.lan.dʒi.ka:/ < /ho.lan.da:/ and /bal.dʒi:.ka:/, and in French was *jouge* "red cheek" from *joue* "cheek" and *rouge* "red".

These attempts at forming novel blends were the initial reason for starting this book. The knowledge I have about English blends and Arabic blends made me think of comparing the methods used in this process in these two languages.

The linguistic phenomenon of blending, which is one of the means of adding neologisms to the lexicon, is widely recognised in English. Blending in English is a productive process of word formation whereby a new word is formed by joining parts of at least two other words as, for instance, the blend *brunch* which is formed by joining parts of the words *breakfast* and *lunch*, *motel* from *motor* and *hotel*, and *smog* from *smoke* and *fog* (Bauer, Lieber and Plag 2013, 462). Blends in English are formed in such a way that at least one of the two words is shortened (Algeo 1991, 10). For instance, the blend *brunch* is formed by joining the segments *br*- and -*unch* from the words *breakfast* and *lunch* respectively, with both words therefore shortened. Other cases of English blends involve a kind of overlap where both words have the same graphemes/phonemes at the joining point (Algeo 1977, 49). An example of this type is the blend *slanguage*, which is formed by joining the two words *slang* and *language*, where the string -*lang*- is found in both source words and therefore constitutes an overlap. There are also cases where one word or part of one word is inserted inside the other word, with or without truncation (Algeo 1977, 49). An example of this type of blends is *chortle*, formed from *chuckle* and *snort*, with the segment -*ort* from the second word *snort* being inserted inside the first word *chuckle*, replacing the segment -*uck*-.

The form of English blends was previously thought to be unpredictable and irregular ((Bauer 1983, 225); (Marchand 1969)), but recent research (e.g. (Lehrer 2003); (Gries 2004a); (Gries 2004b); (Bat-El and Cohen 2012); (Bauer 2012)) has shown that their formation, in fact, shows a considerable amount of regularity and predictability. These recent works have focused on the question of how and why English blends are formed the way they are rather than another way, and what the general tendencies for their formation and structure are.

For the purpose of this book, three blend-formation features that have been identified in the literature on English blending are used as a basis for an examination of Arabic blends to assess the extent to which they also apply in Arabic.

These features are: (1) the cut-off points in the source words; (2) the proportional contributions from the source words to the blend; and (3) the stress pattern of the resulting blend. These features are the most investigated ones in English and the tendencies that have been identified based on them were supported by evidence from large amounts of data.

The success achieved in identifying tendencies and regularities in English blend formation raised the question of to what extent the same kinds of patterns exist in blending in other languages. There has indeed been some comparative work on blending, as in Renner, Maniez and Arnaud (2012) on English and Serbian, Kubozono (1990) on Japanese and English, and Renner (2019) on English and French. There has also been scholarly research on blending in other languages, as in Berman (1989), Bat-El (1996), and Pham (2011) on Hebrew, Fradin (2000) on French, Piñeros (2004) on Spanish, Thornton (1993) and (2000) on Italian, Ronneberger-Sibold (2006) and (2010) on German, Ralli and Xydopoulos (2012) on Greek, Konieczna (2012) on Polish, and Borgwaldt, Kulish and Bose (2012) on Ukrainian. However, the majority of studies have focused entirely on English, as in Algeo (1977), Cannon (1986), Cutler and Young (1994), Kelly (1998), Bertinetto (2001), Kemmer (2003), López Rúa(2004), Hong (2005), Bat-El (2006) (2006), Lehrer (2007), Brdar-Szabó and Brdar (2008), Cook and Stevenson (2010), Tomaszewicz (2012), Bat-El and Cohen (2012), Beliaeva (2014a) and (2014b).

Since detailed analysis is necessary to uncover the relevant patterns (as shown by the fact that they were not recognised even in English until rather recently), progress at this stage is most likely to come from comparisons of the patterns found in English with those in other languages. In this book, the other language chosen for comparative purposes is Arabic. This language also has words that are formed by joining parts of other words, as in the blend /rak.madʒ/ "to surf" formed from /ra.kab/ "ride" and /mawdʒ/ "waves", and the blend /ħaj.na.ba:t/ "a creature that is an animal and a plant" formed from /ħa.ja.wa:n/ "animal" and /na.ba:t/ "plant". Nevertheless, blend formation in Arabic has received very little linguistic attention so far.

It is fair to say that there is a big gap in the literature on Arabic blends. In traditional grammars of Arabic, blends in Standard Arabic are described and classified based on other word-formation processes. However, these studies do not present a systematic account of blends analysed in terms of modern linguistic work on blending. Additionally, research on blends in Modern Standard Arabic is scarce, even though there has been a recent increase in the use of novel blends, especially in the domains of science, where blends are formed to refer to particular inventions, and in the media, where blends are used in comic shows, often to express sarcasm. To the best of my knowledge, there is no systematic linguistic analysis of the process of new-blend formation in Modern Arabic. The lack of such an analysis of this phenomenon in Arabic constitutes the major motivation for investigating blend formation in Arabic in this book.

Because systematic linguistic research on Arabic blends is almost non-existent, this book takes as its basis the results achieved in research on English blends and uses these as a guide to explore the so-far untrodden path of Arabic blending. Hence, this book aims to investigate the extent to which the features and tendencies identified as related to English blend formation can also be identified in blend formation in Arabic. The book is concerned with examining (novel) blends formed by Arabic speakers in the light of the already identified English blend-formation features and tendencies to assess the applicability of these tendencies in the context of blend formation in Arabic.

Arabic, a Semitic language, is very different from English. No previous research has jointly investigated blend formation in these two languages. However, when comparing two different languages like English and Arabic, and based on Kaunisto's (2013, 6) statement that "[It] might be interesting to examine the structural aspects of blend words in different languages in a contrastive or comparative fashion", I propose that analysing Arabic blends in terms of English blend-formation tendencies would be beneficial. This is because it helps explore the extent to which linguistic resemblances or similarities can be identified.

The investigation of the structure of blends in Arabic aims to provide insight into the nature of blending as a word-formation process in this language. It also leads to identifying the prevailing blend-formation tendencies in Arabic. The study also helps explore if there are any regularities in blend formation in Arabic that can contribute to the study of the morphological structure of the Arabic word. This book shows empirical results since it not only analyses existing blends but also investigates the formation of novel blends elicited from Arabic speaking informants.

The two main questions at the heart of this book are as follows:

1) Are there any Arabic-specific tendencies that can be identified in the blends investigated?
2) To what extent do blend-formation tendencies identified based on the three main features of English blends also apply to blend formation in Arabic?

It is essential at this point of the book to start with giving a brief overview of both blending in English (section 1.1.1) and blending in Arabic (section 1.1.2) since they are the two major languages under investigation in this field.

1.1.1. Overview of Blending in English

This section presents an overview of the process of blending in English focusing on the analysis of features of blends proposed by Renner (2006).

Blending in English is generally recognised as "a very productive source of words in modern English" whereby a new word, namely a blend (word), is formed by joining parts from two or more words which are commonly referred to as source words (SWs) (Bauer 1983, 236-7). Examples are the blends *brunch* < ***br****eakfast* and *l****unch****, motel* < ***mot****or* and *h*__*otel*__, and *smog* < ***sm***_oke_ and ***fog***, where the parts in bold type form the blend and the bold parts that are underlined are points of overlap.

The words involved in the process of blending are most often referred to as "source words", but other terms are sometimes used such as "parent-words" (Bergström 1906), "constituent words" (Kelly 1998), "etymons" (Cannon 2000), "source lexemes" (Borgwaldt and Benczes 2011), or "base words" (Bat-El and Cohen 2012). The segments that constitute a blend are usually called "splinters" ((Marchand 1969); (Lehrer 1996); (López Rúa 2012); (Ronneberger-Sibold 2012); (Beliaeva 2014a); (Beliaeva 2014b)), "sub-morphemic splinters" or "fracto-lexemes" (Renner 2014). These splinters are commonly joined to each other concatenatively; however, there are cases of blends in which part of one word is inserted within another, as is the case with the blend *chortle* < ***ch***_uck_***le*** and _sn_***ort***, in which cases the blend may involve more than one segment from the source words. Such cases of blends have been referred to as "sandwich blends" ((Algeo 1977); (Renner 2014)), "interposed blends" (Cannon 1986), "discontinuous blends" (Lehrer 1996), "infixed blends" (Danks 2003), "intercalative blends" ((Kemmer 2003); (Borgwaldt, Kulish and Bose 2012); (Konieczna 2012)), "embedded blends" (Shaw 2013), or "central replacement" blends ((Beliaeva 2014a); (Beliaeva 2014b)).

Another important term that is encountered in studying blends is the joining point. This is the boundary point between the fracto-lexemes of a blend. It is also referred to as the "breakpoint" (Kelly 1998), "switching point" (Bertinetto 2001), "crossover point" ((Bauer 2012); (Borgwaldt, Kulish and Bose 2012)), "splice" (DiGirolamo 2012), or "split point" ((Gries 2012); (Renner 2014)).

This book, to maintain consistency, uses the term "source words" to refer to the words from which a blend is formed, "fracto-lexemes" to refer to the segments of the source words that form the blend, "sandwich blend" to refer to a blend formed by the non-continuous joining of fracto-lexemes, and "split point" to refer to the border point between fracto-lexemes. One further important term is "cut-off point", which is used to refer to the point inside the source word where it is cut or shortened to give the fracto-lexeme.

Traditional accounts of the process of blending generally focus on one or a combination of the following points: (1) describing blending in terms of graphemes, or sometimes phonemes; (2) determining whether the fracto-lexemes are originally in the initial or final positions within their source words; and (3) the number of source words involved in the process, which is minimally two source words but occasionally three (e.g. *compushity* below, and *turducken* < *turkey* + *duck* + *chicken*) and only rarely more than three.

Algeo (1977, 48) defined blending as the process of combining two, or more, word forms where at least one of them is shortened. This definition, therefore, involves one of the points specified above, which is the minimum number of source words required to form a blend. Additionally, it indicates that the process of blending involves shortening in at least one source word. Later, Kaunisto (2000, 49) offered a definition based on the type of word-parts that are joined and stated that, in the process of blending, orthographic, or phonemic, items from the source words are joined together to form a blend.

Gries (2004a, 416), on the other hand, presented a more detailed definition, which involved specifications of the type and location of the parts of the source words that are joined, in addition to the minimum number of source words required in the process. Gries (2004a, 416) defined blending as the process of "fusing parts of at least two source words" where usually the fore part from the first source word combines with the hind part from the second source word with "some phonemic or graphemic overlap of the source words". Gries' (2004a, 416) definition applies to blends like *motel* but not like *brunch*. The former is formed by joining the fore part *mot-* from *motor* and the hind part *-otel* from *hotel* with the segment /-əʊt-/ as the overlap point; whereas the latter is formed by joining the fore part *br-* from *breakfast* and the hind part *-unch* from *lunch* without any point of overlap, making it partially adhere to Gries' (2004a, 416) definition.

Research on English blends has shown that there are several tendencies governing blend formation in English, which have been identified and further investigated. This book focuses particularly on the tendencies that have been considered most frequently in the literature.

These tendencies can be identified by examining specific definitional criteria that have been presented in the literature as characteristics that distinguish blends from other types of neologism. For example, Renner (2006) compared various, and sometimes conflicting, definitions attempting to identify the prototypical characteristics of English blends. Accordingly, Renner (2006, 139) specified three major types of "restrictions" that can be used to identify blends. These restrictions are morphological, semantic and morpho-phonological. Renner (2006) tested the validity of these restrictions on English blends and classified blends into three groups ranging from the most typical, where all three of his restrictions apply, to the least typical, where only one of the restrictions applies. What follows gives an outline of Renner's restrictions on English blend-formation.

The first restriction that Renner (2006) discusses is the morphological restriction whereby the truncation pattern of the source words corresponds to “an apocope” of the first source word and/or “an apheresis” of the second source word. Renner (2006, 139) gives three examples to explain this restriction, where three truncation patterns are identified. The first is the blend *brunch*, with the first source word ***br***_eakfast_ undergoing apocope and the second source word _l_***unch*** apheresis. The second example is the blend *morphosyntax*, with the first source word ***morpho***_logy_ undergoing apocope and the second source word ***syntax*** being present in its entirety. Finally, the third example is the blend *claymation*, with the first source word ***clay*** being present in its entirety and the second source word _ani_***mation*** undergoing apheresis.

Renner’s (2006) truncation patterns correspond to the pattern of analysis proposed by Plag (2003) where the first source word is represented as AB and the second source word as CD, and accordingly, the types of blends given above can be represented as follows:

AB+CD= AD (apocope and apheresis)
AB+CD= ACD (only apocope)
AB+CD= ABD (only apheresis)

Renner (2006, 140) states that there are cases that are not accounted for by these three patterns and are not referred to as blends but as “clipped compounds” because they do not fit into any of these three patterns. Renner (2006, 140) mentions that this term is adopted by Bauer and Huddleston (2002, 1635), Bauer (2003, 47), and Gries (2004b, 645-647). Examples include *modem* < ***mod***_ulator_ and ***de***_modulator_, and *sitcom* < ***sit***_uation_ and ***com***_edy_. These are both instances of biapocope, which, according to the patterns given above, correspond to AB+CD=AC, where both source words undergo apocope.

The second restriction that Renner (2006, 140) specifies is semantic, whereby a blend should reflect the meanings of its source words. For example, *smog* is formed from the source words ***sm***_oke_ and ***fog***, and semantically refers to a combination of smoke and fog. This restriction does not apply to *motel* since the semantics of the source words is not reflected in the blend word, in that it is not both a motor and a hotel, or a combination of a motor and a hotel, but rather an abbreviated compound where the first source word modifies the second, as stated by Plag (2003, 122).

In terms of semantics, English blends can be divided into two groups: coordinate and determinative (Bauer 2012, 12). The former shows a paradigmatic relation between the source words, as in the blend *smog* < *smoke* and *fog*, and the latter a syntagmatic relation, as in the blend *motel*

< *motor hotel* (Dressler 2000, 5).

For Renner (2006), the coordinate blends exhibit four semantic relationships. These are hybrid blends, like *tigon* < *tiger* and *lion*, addition blends, like *semantax* < *semantics* and *syntax*, polyvalence blends, like *spork* < *spoon* and *fork*, and tautologous blends, like *rucus* < *ruction* and *rumpus*. These semantic relations range from the most prototypical category of blends to the least, where hybrids are the most prototypical and tautologous the least. On the other hand, Bauer (2012, 19) states that the determinative blends have “a semantic structure more similar to endocentric compounds”.

Most English blends, both attributive and coordinative, have the semantic characteristics of non-argumental compounds. An attributive blend is a hyponym of the second base word, and at the same time, the first base word has a “contextually plausible relationship to the second”, e.g. *daycation* < *day vacation* is a one-day vacation (Bauer, Lieber and Plag 2013, 483).

When it comes to the coordinative compounds, there are two types: appositive and compromise blends. The first type denotes “the intersection of two types of entity or action”, e.g. *fictomercial* < *fiction commercial* is a work of fiction and a commercial at the same time. The second type denotes a hybrid entity or a concept, e.g. *broccoflower* < *broccoli* and *cauliflower* is a kind of vegetable that is somewhere between broccoli and cauliflower.

Blends with argumental-compound semantics are affixal, and can be either object-referencing, e.g. *agrimation* < *agriculture automation* “automation of agriculture”, or subject-referencing, e.g. *kidfluence* < *kid influence* an “influence by kids” (Bauer, Lieber and Plag 2013, 483-4).

There is a further miscellaneous group of so-called blends that cannot be so easily interpreted. These are the opaque cases of blends, such as *Boyzilian* < *boy* and *Brazilian*, “the name for a bikini wax for men”, and idiosyncratic-word-play blends, such as *Internot* < *internet* and *not*, “a person who refuses to use the internet” (Bauer, Lieber and Plag 2013, 485).

Other than these last two types, blends are interpreted in the same way as compounds (Bauer, Lieber and Plag 2013, 485). In consideration of the features and categories of coordinative blends, this book is focusing on a particular type of blends, where there is a paradigmatic relation between the source words.

The third restriction is morpho-phonological, whereby a blend is characterised by “interpénétration” (French for *entanglement*, *nesting*, *telescoping*). This characteristic applies in English to cases of blends with overlapping fracto-lexemes where at least one element of these fracto-lexemes is common to both source words (Renner 2006, 141). For example, in *motel*, the part <ot> /əʊt/ is shared by both *motor* and *hotel*, at both levels: orthography (*m**ot**el* < ***mot**or* and *h**otel***) and phonology (/m**əʊt**ɛl/ < /**məʊt**ə/ and /h**əʊtɛl**/).

However, there are cases of blends where this kind of entanglement is incomplete because they can be interpreted either on the orthographic level or on the phonological level, but not, simultaneously, on both (Renner 2006, 141). For instance, from an orthographic perspective, the <o> in the blend *smog* is considered to be common to both source words, *smoke* and *fog*, but phonologically, it is not, since the grapheme <o> represents /əʊ/ in *smoke* and /o/ in *fog*. On the other hand, the blend *skyjack* contains the diphthong /aɪ/, which is part of the phonology of both source words, *sky* and *hijack*, but is represented by different graphemes (<y> versus <i>).

Cases of blends that have shared elements (whether on both, the orthographic and phonemic, levels or on either level) exhibit a kind of entanglement referred to as ambimorphemic (Renner 2006, 141). Other examples of ambimorphemic entanglement are the blends *acu**p**ressure* < ***acup**uncture* and ***p**ressure*, *pla**net**esimal* < ***planet*** and *infi**nitesimal***,[1] and *bo**t**ox* < ***bot**ulin* and ***t**oxin*. Nevertheless, Renner (2006, 141) mentions that the literature on English blending does not identify this restriction as a definitional criterion for blends, possibly because it would exclude cases of blends like *brunch*, where no element can be found in both source words.

Renner's (2006) restrictions form a specific scheme for examining the structure of English blends, where several features are considered at different linguistic levels: morphological, semantic and morpho-phonological. The most commonly investigated features of the structure of English blends are those that are relevant to the morphological and morpho-phonological restrictions, which are subject to investigation in this book. As a result of research into the structure of English blends in terms of these features, many blend-formation tendencies have been identified in the literature and presented in section 3.5.

1.1.2. Overview of Blending in Arabic

In the traditional literature on blending in Arabic (e.g. (Ibn Manẓūr 1883); Ibn Fāris (1979), (1997), and (2001); (Al-Farāhīdi 1988); (Al-Rāzi 1999); (Al-Zubaydi 2003)), the word-formation process of blending is referred to as *al-naḥt*. Al-Farāhīdi[2] (1988, 60) was the first Arab linguist to discuss this linguistic phenomenon and to refer to it by this term, which literally means "carving, cutting, trimming, shortening, reducing, adjusting, constructing". To avoid confusion and to maintain consistency when referring to Arabic neologisms that correspond, by definition, to those formed by the process of blending in English, the term "blending" is used instead, and hence an Arabic neologism formed by this process is referred to as "a blend".

Blending in Arabic is generally defined as the formation of a word by joining letters taken from two consecutive words or taken from a sentence, in such a way that the new word conveys the same meaning as that of the original words ((Al-Maghribi 1908, 21); (Al-Farāhīdi 1988, 60)). Moreover, it is generally said that, when forming an Arabic blend, a formal relationship is established between the blend and the source words so that the letters of the blend all come from the source words (Al-Mūsā 1966, 65-7).[3]

Examples of Arabic blends mentioned in the literature about this process are shown in (a)-(d) below.

a) عَبْشَمِي /ʕab.ʃam(ij)/ "someone belonging to the family of /ʕab.di ʃams/ "the slave of the sun",[4] from عَبْد/ʕabd/ "slave" andشَمْس /ʃams/ "sun", which was a name for an Arab tribe in the 6th century AD.
b) جَعْفَدَ /dʒaʕ.fad(a)/ meaning someone is saying may Allah make me redemption for you",[5]جَعَلَ /dʒa.ʕal(a)/ "made" and فِدآء /fi.da:ʔ/ "redemption".
c) عَبْدَرِي /ʕab.dar(ij)/ "someone belonging to the family of /ʕab.did.da:r/",[6] from عَبْد/ʕabd/ "slave" andدآر /da:r/ "house", which was a name for an Arab tribe in the 6th century AD.
d) دَمْعَزَ /dam.ʕaz(a)/ meaning someone is saying may Allāh perpetuate greatness for you, from دآم /da:m/ "perpetuate" and عِزّ /ʕizz/ "greatness".

To understand how words, in general, are formed in Arabic, it is important to have an idea about the structure of the word as well as the process of derivation in Arabic.

Words in Arabic are characterised by a non-concatenative morphology ((McCarthy 1981); (Watson 2002, 200); (Ouhalla 2012, 41)) whose basic units consist of a root and a derivational or inflectional pattern ((Cavalli-Sforza, Soudi and Mitamura 2000, 86); (Saiegh-Haddad and Henkin-Roitfarb 2014, 9)). In this process, the consonantal root forms the base that is mapped into a pattern consisting of a prosodic template, which is also referred to as the "derivational vocalic morpheme" (Ouhalla 2012, 41-2).

Because they cannot be realised in isolation from each other, the root and the pattern are unpronounceable bound morphemes.

The root consists of a sequence of consonants that conveys the essential meaning (Bentin and Frost 1995, 273). They are mostly triliteral sequences such as /ktb/ "write", /drs/ "study", and /rsm/ "draw". Quadriliteral sequences are also possible, though less common, such as /trdʒm/ "translate", while biliteral sequences such as /ħdʒ/ "pilgrim" are rare.

The patterns mostly take the form of vocalic/prosodic patterns that are spread over a consonantal base (Ouhalla 2012, 41). That is, patterns have "slots for the root consonants" to fill when forming the words (Saiegh-Haddad and Henkin-Roitfarb 2014, 9). This indicates that the vocalisation of Arabic words does not take place at the level of the root but rather at the level of the word pattern where phonemic and morphosyntactic diacritics represent the vowels of the prosodic pattern ((Ouhalla 2012, 41); (Saiegh-Haddad and Henkin-Roitfarb 2014, 18)).[7]

A well-known example that shows how the root consonants are combined with a prosodic pattern is that of the root /ktb/ "write" combined with the two patterns *CaCaC* and *CaaCiC* (Ouhalla 2012, 41). The consonant slots in the prosodic patterns are filled by the root consonants (Saiegh-Haddad and Henkin-Roitfarb 2014, 9). The first prosodic pattern gives the word /ka.tab/ "he wrote" and the second prosodic pattern gives the word /ka:.tib/ "(male) writer".

Even though few blends have been identified in Classical Standard Arabic, an increasing number of novel examples can be found in Modern Standard Arabic. Neologisms formed by blending in Arabic enjoy growing popularity, especially in the media (Abdul-ʻAzīz 2002, 52-3) and in scientific fields such as chemistry and biology (Takeda 2011, 13). As has been pointed out, blending in Arabic, just like in English, is used to facilitate expression by means of reduction and brevity ((Al-'Ālūsi 1988, 18-21); (Takeda 2011, 13)), by forming one word from two or more words while preserving the meaning of the original words ((Al-Shihābi 1959) ; (Al-Khaṭīb 2003, 439)).

Ibn Fāris (1979, 271), a traditional linguist, defined blending simply as the process of forming one lexeme from two or more lexemes. However, this definition does not provide specific details about how the process operates. Some further detail on the outcome of blending is given by Al-Farāhīdi (1988, 60), who described it as the process of "joining two consecutive lexemes to form a new lexeme from which a verb is derived", showing an awareness that the blend has the potential of acting as the base for verb creation.

Modern and contemporary linguists define blending as a process of forming “one unique lexeme” by joining “letters taken from two lexemes or from a sentence” where the meanings of the original lexemes are conveyed by the new lexeme (Al-Maghribi 1947, 13). This definition goes further to refer to the selection of two or three words from a sentence to form a blend following the identified pattern for forming blends from any word pair. Although forming blends from words taken of sentences is not identified in English, the new Arabic word still conforms to the pattern of forming blends in Arabic. In this case, and this book, in particular, these blends are analysed as being formed from these source words, not from the sentence, since not all words in the sentence contribute to forming the blend.

1.2. The Motivation of the Book

This book is based on the assumption that there is, to some extent, a resemblance between the blend-formation tendencies of Arabic and those of English. To identify the nature and degree of any resemblance between the blends of these two languages, blends from Arabic were examined in the light of English blend-formation tendencies.

In recent years, different types of blends have also appeared in Arabic. These types look more like the result of concatenating word parts, the way it is done in blends in English and other languages. Although this process seems to be relatively new in Arabic (and is condemned by some traditional Arab grammarians), there are already substantial numbers of words of this type and new ones that can regularly be encountered in the media. The study of such new blends and the principles governing their formation still needs to commence. This book aims to contribute to such a start.

Moreover, the lack of a systematic, quantitative analysis of this phenomenon in Arabic constitutes the major motivation for investigating blend formation in Arabic in this book, which has led to posing the main assumption in this book, which is: Blend-formation features and tendencies that are identified for blend formation in English can, to some extent, be applicable to blend formation in Arabic.

1.3. Structure of the Work

The remainder of this book consists of five chapters. Chapter 2 outlines the methodology, describing the datasets (section 2.1), the methods of data collection (section 2.2), and the initial results and processing of the data (section 2.3). Chapter 3 presents an overview of the literature on blend formation in English focusing mainly on blend-formation features and tendencies (section 3.5) that have been identified in studies on English blends. Chapter 4 is an overview of blending in Arabic with a focus on the classification of Arabic blends (section 4.2) and the tendencies in Classical Arabic blend formation (section 4.3). Chapter 5 presents the analysis of the data, with both the established Arabic blends (section 5.2) as well as the novel ones produced by the informants (section 5.3), examined based on the major English blend-formation features and tendencies identified in chapter 3; chapter 5 concludes by presenting some further observations from the novel invented blends (section 5.4). Finally, chapter 6 starts with preliminaries about the motivation for commencing this book (section 6.1) and summarises the findings of this book within a set of conclusions (section 6.2).

2. DATA AND METHODOLOGY

2.1. Datasets

The corpora examined for this book consist of two datasets—one of the established blends and one of the novel invented blends. These blends were analysed to find answers to the questions posed in section 1.1.

The first dataset was analysed based on the two methods identified in the literature on Arabic blends that are outlined in section 4.3. These methods are: (1) the root-and-pattern method, and (2) the concatenation method.

The second dataset was analysed as related to the tendencies identified for the three major features of English blend formation that are outlined in section 3.5. These features are: (1) the cut-off points in the source words, (2) the proportional contributions from source words to blends, and (3) the stress patterns of the blends.

2.1.1. The Established Arabic Blends

The first dataset consists of two subsets of established Arabic blends: blends found in Classical Arabic and blends found in Modern Arabic. Both sets were compiled from articles, sources and websites. The full sets of the blends, their source words and glosses of their meaning are given in Appendices II and III. Table 2.1 below displays sample data from Classical Arabic (1-6) and Modern Arabic (7-12). Established blends and their source words in this table and all tables that follow are given in their stem-form unless it is necessary to give them in their full word form.

Table 2.1: Sample blends of Classical and Modern Arabic

No.	Blends
1	/baʕ.θar/ بَعْثَر "scatter" < /ba.ʕath/ بَعَث "grub" and /ʔa.θa:r/أثَار "arouse"
2	/dˤab.xan/ ضَبْخَن "smog" < /dˤa.ba:b/ ضَبَاب "fog" and /dux.xa:n/ دُخَان "smoke"
3	/kar.bal/كَرْبَل "laxity in legs" < /ka.bal/ كَبَل "shackle" and /ra.bal/رَبَل "fleshy"
4	/qaʕ.faz/ قَعْفَز "sitting unassured" < /qa.ʕad/ قَعَد "sit" and /fazz/ فَزّ "bounce"
5	/sˤah.sˤa.liq/ صَهْصَلِق "vociferous" < /sˤa.hal/ صَهَل "to neigh" and /sˤa.laq/ صَلَق "to wail".
6	/θuf.ruq/ ثُفْرُق "the skin on the stone of date" < /θafr/ ثَفْر "opening" and /farq/ فَرْق "split"
7	/ba.nasˤr/بَنَصر < /bank/ بَنك "bank" /masˤr/ مَصر "Egypt"
8	/dar.ʕam/دَرْعَم "a graduate from the House of Sciences in Egypt" < /da:r/ دَار "house" and /ʕu.lu:m/علوم "sciences"
9	/ʕasˤ.dʒa.na:ħ/عَصْجَنَاح "neuropteran" < /ʕa.sˤab/ عَصَب "nerve" and /dʒa.na:ħ/ جَنَاح "wing"
10	/dʒað.ridʒl/ جَذرِجْل "rhisopoda" < /dʒaðr/ جَذر "root" and /ridʒl/رِجْل "leg"
11	/rak.madʒ/رَكْمَج "surfing" < /ra.kab/ رَكَب "ride" and /mawdʒ/ مَوْج "waves"
12	/haw.mal/هَومَل "airborne" < /ħa.mal/ حَمَل "carry" and /ha.wa:ʔ/ هَوَاء "air" (reversed blend)

All of the blends examined in this book are formed from two source words; nevertheless, it is not unusual to find a blend formed from three source words; an example is the blend /sˤal.ʕam(a)/ meaning someone is saying "May Allah pray on and greet him"; "him" refers to Prophet Muhammed (peace be upon him) < /sˤal.la:/ "prayed", /ʕa.la:/ "upon", and /sal.lam(a)/ "greeted".

It is also important to note that the order of the source words is maintained in most of the blends. Two exceptions are the blends /haw.mal(a)/ هَومَل "airborne" < /ħa.mal(a)/ and /ha.wa:ʔ/ حَمَل هَوَاء "air" and "carry", and /dʒaw.qal(a)/ جَوقَل "airborne" < /na.qal(a)/ and /dʒaw/ نَقَلَ جَو "air" and "transport". The blend /dʒaw.qal/ is formed from the source words /na.qal/ and /dʒaw/, which appear in the original context as "S. /na.qa.la/ O. /dʒaw.wan/" (S.V.O.Adv.), and the blend /haw.mal/ is formed from the source words /ħa.mal/ and /ha.wa:ʔ/, which also appear in the original context as S. /ħa.ma.la/ O. /bil ha.wa:ʔ/ (S.V.O.PP.). This indicates that it is not unusual to find blends that could be formed by joining the source words in a reversed order.

2.1.2. The Novel Invented Arabic Blends

Two methods of data collection were used to collect the novel invented blends examined in this book. The data were invented blends elicited from native speakers of Arabic. To collect sufficient amounts of data, two structured anonymous methods of data collection were administered: one took the form of an online survey and the other a face-to-face experiment. A pilot test conducted with one respondent to the survey and one participant in the experiment whose responses were also analysed was conducted to make sure that the timing, the instructions, the given word pairs and their order of presentation were suitable for the investigation. The pilot test did not result in the identification of any problems related to the methodology.

Steps were taken to make sure that anyone who took part in the experiment had not previously participated in the online survey since the survey had been posted online two months before the experiment started. This step was important to guarantee that the participants were producing spontaneous, genuine blends that they had not produced before.

The instructions, the questions asked, and the stimuli used in the data collection were all written in Modern Standard Arabic. This variety is the one used in all school textbooks and the one that all literate native speakers of any Arabic dialect can read, write and understand.

Demographic questions at the beginning of the survey asked the respondents about their mother language and their country of birth, to make sure that they were native speakers of Arabic who were born to Arab parents and grew up in an Arab country.

The instructions given for both the survey and the experiment began with some examples of blends in Arabic, including established as well as novel blends, to clearly illustrate what the participants were going to be asked to do.

Each method of data collection consisted of a task that required the informant to form possible blends from the stimuli given. The stimuli took the form of pairs of words. In both the survey and the experiment, informants were asked to provide only one response per stimulus (see Appendix D for the stimuli used in both methods of data collection).

2.2. Methods of Data Collection

This section outlines the methods of data collection: the survey (section 2.2.1) and the experiment (section 2.2.2). The selection and type of stimuli used in both methods of data collection are discussed in section 2.2.3. Section 2.2.4 is a description of the informants who participated in both methods of data collection. The debriefing that followed the experiment is discussed in section 2.2.5.

2.2.1. The Survey

The survey was conducted online. A link to the survey was posted on several social media websites and mailing lists. The instructions for the survey were given in Modern Standard Arabic. They included detailed explanations about the procedures that should be followed in responding to the survey questions. The respondents were asked to respond orthographically, writing their answers in Standard Arabic. The word pairs used as stimuli in the survey appeared as soon as the respondents clicked "next" on the screen. The survey instructions asked the respondents to diacritise their responses; and for this purpose, they were provided with a link to an Arabic keyboard where they could type the letters and diacritics they needed and then copy and paste them into the survey response slot.

2.2.2. The Experiment

The material for the experiment was shown to the participants in the same format as in the survey, with one difference: in the experiment, the word-pair stimuli were displayed to participants by the researcher using PowerPoint slides. As with the survey, the experiment was promoted on several social media websites and mailing lists. The instructions for the experiment were also given in Modern Standard Arabic. They also included detailed explanations about the procedures that should be followed while participating in the experiment. The participants were given written information and consent forms in English and Arabic to sign before participation.

Unlike in the survey, the participants in the experiment were asked to respond orally to the stimuli. The word-pair stimuli appeared as soon as the researcher clicked on "next", which was done immediately after the participant had given his/her response to the previous stimulus. All responses in the experiment were audio-recorded.

2.2.3. The Stimuli

The responses that formed the dataset to be analysed were potential Arabic blends formed by joining parts of at least two words. It has been suggested that it is an essential requirement for an Arabic blend that it is formed by joining at least two source words (Al-Qāsimi 2005, 85). This is similar to the basic requirement stated for blend formation in English, described by Renner (2006, 139) as the minimal definitional criterion (see section 1.1.1). Most of the blends, whether established or invented, that have been examined in previous studies of English were indeed formed from two source words; accordingly, this criterion was also used in collecting the data examined in this book, where all the stimuli in the survey and the experiment were word pairs, namely coordinates. See Appendix D for the full list of stimuli given in Arabic with their phonemic transcription and glossing.

The stimuli used in the online survey were also used in the face-to-face experiment. The stimuli were word pairs that were presented to the informant as source words from which they were asked to form a blend. The words in each pair had a paradigmatic relationship to each other ((Dressler 2000); (Plag 2003); (Beliaeva 2014a, 43))—in other words, they were purposely selected based on belonging to the same semantic category, such as food, metals or currency, as well as to the same syntactic category, namely nouns. This choice was motivated by considering that when informants were faced with a word pair like *bread* and *cheese* or *gold* and *diamond* (same part of speech, same semantic field) they might find it relatively natural to form a blend because it would have predictable semantics (“a bit of X and a bit of Y” or “X and Y combined”).

Many existing English blends are also of this type; that is, combining source words that have a semantic relationship. These blends have combinations of the properties of their source words, as is the case with the blends *chofa* < *chair* and *sofa*, and *blizzaster* < *blizzard* and *disaster* (Beliaeva 2014a, 43).

Beliaeva (2014a, 44) extracted blends for her study from the Corpus of Contemporary American English (COCA) and found that 108 blends reflected this type of semantic relationship between the source words. The situation might be different if informants were given word pairs without a paradigmatic relationship, such as with a syntagmatic relationship since this might result in confusion about what kind of meaning the blend could have. However, blends of this type do exist. Examples include *mansplain* <*man* and *explain* (formed from a noun and a verb), and *fake-ation* <*fake* and *vacation* or *briet* <*bridal* and *diet*, both formed from an adjective and a noun, in which the source words show a subordinative combination

(Beliaeva 2014a, 44).

Since the informants in the survey and the experiment were asked to create a novel blend on the spot, it was felt that the *bread* and *cheese* type of word pairs was best. There were indeed no signs that participants experienced at any point any uncertainty about the basic meaning of the blends they were asked to create. Some of the stimuli were selected in a way to have a certain amount of graphemic or phonemic similarity at some point in some of the words, which allowed the creation of potentially overlapping blends to be examined as well.

The survey and experiment used the same stimuli, consisting of two lists, each containing nine word-pairs. The same nine word-pairs appeared in each list, in the same sequence. The only difference between the two lists was that, for each word-pair, the second list reversed the order of the words—that is, for each word-pair, the order Word I + Word II of the first list became Word II + Word I in the second list. In all cases, the words were established Modern Standard Arabic words that can be read and understood by any speaker of Arabic, and they were displayed in Arabic script. The complete set of stimuli (in Arabic with English translations given) is displayed in Table 2.2 below.

Table 2.2: Stimuli used in the survey and experiment

No.	1st ordering of word pairs	2nd ordering of word pairs
1	جُبْن /dʒubn/ "cheese" and خُبْز /xubz/ "bread"	خُبْز /xubz/ "bread" and جُبْن /dʒubn/ "cheese"
2	جُبْن /dʒubn/ "cheese" and لَبَن /la.ban/ "yoghurt"	لَبَن /la.ban/ "yoghurt" and جُبْن /dʒubn/ "cheese"
3	زَيْت /zajt/ "oil" and زَعْتَر /zaʕ.tar/ "thyme"	زَعْتَر /zaʕ.tar/ "thyme" and زَيْت /zajt/ "oil"
4	دَوآء /da.wa:ʔ/ "medication" and مآء /ma:ʔ/ "water"	مآء /ma:ʔ/ "water" and دَوآء /da.wa:ʔ/ "medication"
5	دُولآر /du:.la:r/ "dollar" and دِينآر /di:.na:r/ "dinar"	دِينآر /di:.na:r/ "dinar" and دُولآر /du:.la:r/ "dollar"
6	تَمْر /tamr/ "dates" (fruit) and لَبَن /la.ban/ "yoghurt"	لَبَن /la.ban/ "yoghurt" and تَمْر /tamr/ "dates"
7	خِيآر /xi.ja:r/ "cucumber" and طَمآطِم /tˤa.ma:.tˤim/ (n-Arb.W) "tomato"	طَمآطِم /tˤa.ma:.tˤim/ "tomato" and خِيآر /xi.ja:r/ "cucumber"
8	شآي /ʃa:j/ "tea" and حَلِيب /ħa.li:b/ "milk"	حَلِيب /ħa.li:b/ "milk" and شآي /ʃa:j/ "tea"
9	ذَهَب /ða.hab/ "gold" and مآس /ma:s/ "diamond"	مآس /ma:s/ "diamond" and ذَهَب /ða.hab/ "gold"

2.2.4. The Informants

The total number of respondents to the survey was 63, and 32 people participated in the experiment. In both cases, participation was limited to native speakers of Arabic, regardless of their dialect or their citizenship. Before beginning the survey or experiment, the informants were asked to confirm that they had been born in an Arab country to Arab-speaking parents and that their basic education had been in Modern Standard Arabic. Beyond this, no further, identifying demographic information was collected. Of the participants in the experiment, 20 were studying or living in Newcastle, while 12 were recruited in Baghdad.

2.2.5. Debriefing

At the end of the experiment, the informants were asked about the technique they followed when forming blends from word pairs that have common elements like جُبْن /dʒubn/ "cheese" and خُبْز /xubz/ "bread". They were asked how they chose the fracto-lexemes from these source words. There was a consensus on the point where they cut the words.

The feedback showed that the informants preferred to cut what they called "orthographic units" and use these as fracto-lexemes. These units for the informants include:

- a grapheme-consonant with its diacritic from the first source word and the final consonant cluster from the second source word, as in the blend جُبْز /dʒubz/ < جُبْن /dʒubn/ "cheese" and خُبْز /xubz/ "bread", where for this response all informants stated that they cut جُبْن this way جُ|بْن /dʒu|bn/ and خُبْز this way خُ|بْز /xu|bz/; or
- a sequence of graphemes where all the graphemes they use as fracto-lexemes are connected in the source words, as in the blend مآهَب /ma:.hab/ < مآس /ma:s/ "diamond" and ذَهَب /ða.hab/ "gold", where for this response all informants stated that they cut مآس this way مآ|س /ma:|s/ and ذَهَب this way ذَ|هَب /ða.|hab/.

This feedback is implemented in the analysis of the responses, especially for the feature of cut-off points (section 5.3.1) and that of proportional contributions (section 5.3.2).

Although the technique followed by the informants does not allow for having potential cases of blends with overlap when the source words have common elements, the analysis still considers these blends, where possible, as having shared elements. For instance, the blend جُبْز /dʒubz/

given above as showing no overlap can also be analysed as having overlap where the segment /ub/ is common to both source words due to having the source word جُبْن /dʒubn/ cut inside the coda جُبْ|ن /**dʒ*ub***|n/ and the second source word خُبْز /xubz/ cut between the onset and the nucleus خ|ُبْز /x|***ub*z**/.

Moreover, although the discussion in this book adheres to the idea that the formation of blends can involve the overlapping of elements shared by both source words, the analysis of responses based on the proportional contribution from the source words to the blends still deals with both modes of analyses—without overlap, referred to in this book as the first mode of analysis (henceforth in tables, MoA1) and with overlap, referred to as the second mode of analysis (henceforth in tables, MoA2).

2.3. Results and Processing of the Data

This section is a description of the data compiled for examination. Section 2.3.1 discusses the established Arabic blends and how they were compiled and section 2.3.2 discusses the novel blends that were invented by the native speakers of Arabic who participated in the Survey and Experiment.

2.3.1. The Established Arabic Blends

The overall dataset of established blends consists of 99 blends—61 blends from Classical Arabic and 38 blends from Modern Arabic. All of these blends are phonemically transcribed, following the list of IPA mapping for Arabic given in Appendix A. The roots and patterns of these blends were checked in some websites and dictionaries, such as *The Dictionary of Meanings* (قآموس المعاني) (2010) accessed via https://www.almaany.com/, *The Lexicon* (المعجم) (2016) accessed via https://www.almougem.com/, *The International Corpus of Arabic* (2013) accessed via http://www.bibalex.org/ica/en/About.aspx, and *The Aratools Arabic-English Dictionary* (2015) accessed via http://aratools.com/.

The dataset includes blends that are formed from source words of non-Arabic origin; these are loans into Arabic that have been nativised in some way and used as source words for Arabic blends. Arabised words of this type are treated the same way Arabic words are when it comes to identifying their roots. Although borrowed words are not recorded in any of the online Arabic dictionaries or corpora that were consulted, yet their roots were extracted by taking out their skeletal consonant letters after excluding any affixes they have acquired due to Arabisation. Whenever a word of non-Arabic origin is cited in this book, it is marked as such by the code "n-Arb.W" next to it. Examples of Arabised words are /du:la:r/

"dollar", which is used in one of the word pairs in the survey and experiment, /tal.fa.za/ "to televise" and /tal.fa.na/ "to telephone". Considering the root structure of the source words throughout the analysis, whether for Arabic or Arabised words, makes it easier to relate their structure with that of the resulting blend.

2.3.2. The Novel Invented Arabic Blends

The raw number of responses collected overall in the Survey and Experiment was 1710, with 1134 written responses from the survey stimuli (63 respondents x 18 word-pairs), and 576 spoken responses from the experiment stimuli (32 participants x 18 word-pairs).

The first step in processing the data was to phonemically transcribe the word pairs and the responses. As part of this transcription, syllable boundaries were also indicated in the word pairs and in the fully diacritised and fully vowelised responses (more details of diacritisation and vowelisation of the responses are given in section 2.3.3 below). The second step in processing the data was to filter out all irrelevant and unsuitable responses in line with a set of systematic criteria outlined in section 2.3.4 below.

To get a sense of the kinds of responses that were given and the way the initial processing was conducted, it is useful to consider Table 2.3 and Table 2.4 below which record the most frequent responses given for each word pair in the survey and experiment respectively. Note that some of the responses given in Table 2.3 lack vowels due to the respondents' frequent failure to supply diacritics in the survey. All the responses, including those that were undiacritised, partially diacritised and fully diacritised, were phonemically transcribed in order to maintain consistency in the representation of the responses in the dataset.

In Table 2.3 and Table 2.4 below, and all subsequent examples from the dataset, any element in a source word that is carried over into the blend is marked in bold. Elements of the blend that are found in both source words (henceforth referred to as overlapping segments) are additionally marked in italics in the transcriptions of the source words. Syllable boundaries are shown using a dot in the source words and the blends. Stress will be indicated in the source words and the blends only when the discussion turns to the consideration of the stress pattern of the responses.

Table 2.3: Most frequent responses to each word pair in the survey

Source Word I	Source Word II	Novel blends
/**dʒ**u***b***n/ “cheese”	/xu***b*z**/ “bread”	/dʒbz/
/**x**u***b***z/ “bread”	/dʒu***b*n**/ “cheese”	/xbn/
/**dʒ**ubn/ “cheese”	/**l**a.**b**a**n**/ “yoghurt”	/dʒlbn/
/**l**a.ban/ “yoghurt”	/**dʒ**u**bn**/ “cheese”	/ldʒbn/
/**z**a**j*t***/ “oil”	/zaʕ.***t*ar**/ “thyme”	/zjtr/
/**zaʕ**.tar / “thyme”	/za**jt**/ “oil”	/zʕjt/
/**d**a.**w**a:ʔ/ “medication”	/**ma:ʔ**/ “water”	/dwma:ʔ/
/**ma:**ʔ/ “water”	/da.**wa:ʔ**/ “medication”	/ma:.wa:ʔ/
/**du:**.la:r/ “dollar”	/di:.**na:r**/ “Dinar”	/du:.na:r/
/**di:**.na:r/ “dinar”	/du:.**la:r**/ “Dollar”	/di:.la:r/
/**t**a**m**r/ “dates”	/la.**b**a**n**/ “yoghurt”	/tmbn/
/**l**a.ban/ “yoghurt”	/ta**mr**/ “dates”	/lmr/
/**xi**.***ja:***r/ “cucumbers”	/tˤa.m***a:*.tˤ**i**m**/ “tomatoes”	/xja:tˤm/
/**tˤ**a.**m**a:.tˤim/ “tomatoes”	/xi.**ja:r**/ “cucumbers”	/tˤmja:r/
/**ʃ**a:j/ “tea”	/ħa.**li:b**/ “milk”	/ʃli:b/
/**ħ**a.**li:**b/ “milk”	/**ʃa:j**/ “tea”	/ħli:ʃa:j/
/**ð**a.**h**ab/ “gold”	/**ma:s**/ “diamond”	/ðhma:s/
/**ma:**s/ “diamond”	/ða.**hab**/ “gold”	/ma:hb/

Table 2.4: Most frequent responses to each word pair in the experiment

Source Word I	Source Word II	Novel blends
/**dʒ*ub***n/ “cheese”	/x***ubz***/ “bread”	/dʒubz/
/**x*ub***z/ “bread”	/dʒ***ubn***/ “cheese”	/xubn/
/**dʒ*ub***n/ “cheese”	/la.***b*an**/ “yoghurt”	/dʒu.ban/
/**la.*b***an/ “yoghurt”	/dʒu**bn**/ “cheese”	/labn/
/**zaj*t***/ “oil”	/zaʕ.***t*ar**/ “thyme”	/zaj.tar/
/**zaʕ**.tar / “thyme”	/z**ajt**/ “oil”	/za.ʕajt/
/**da**.wa:ʔ/ “medication”	/**ma:ʔ**/ “water”	/da.ma:ʔ/
/**m**a:ʔ/ “water”	/d**a.wa:ʔ**/ “medication”	/ma.wa:ʔ/
/**du:**.la:r/ “dollar”	/di:.**na:r**/ “dinar”	/du:.na:r/
/**d**i:.na:r/ “dinar”	/du:.l**a:r**/ “dollar”	/da:r/
/**tam**r/ “dates”	/la.**ban**/ “yoghurt”	/tam.ban/
/***la***.ban/ “yoghurt”	/t***a*mr**/ “dates”	/lamr/
/**xi.j*a:***r/ “cucumbers”	/tˤa.m***a:*.tˤim**/ “tomatoes”	/xi.ja:.tˤim/
/**tˤa.ma:**.tˤim/ “tomatoes”	/xi.**ja:r**/ “cucumbers”	/tˤa.ma:.ja:r/
/**ʃ**a:j/ “tea”	/ħ**a.li:b**/ “milk”	/ʃa.li:b/
/**ħa.l**i:b/ “milk”	/ʃ**a:j**/ “tea”	/ħa.la:j/
/**ða.h**ab/ “gold”	/m**a:s**/ “diamond”	/ða.ha:s/
/**ma:**s/ “diamond”	/ða.**hab**/ “gold”	/ma:.hab/

It is noted that several items in these two lists, which are representative of similar responses in the whole dataset, contain segments that are found in both source words. Nevertheless, these segments are not shown in bold italics as being overlapping segments as noted earlier. For instance, the segments /d/ and /a:r/ in the blend /du:.na:r/, given as a response to the word pair /**du:**.la:r/ “dollar” and /di:.**na:r**/ “dinar” (and appearing in both tables above), are interpreted as coming from word I /**d**u:.la:r/ and from word II /di:.n**a:r**/, respectively and not from both source words. However, the segment /ub/ in the blend /dʒubz/ is interpreted as coming from both source words /**dʒ*ub***n/ “cheese” and /x***ub*z**/ “bread**”**.

The reason for making this distinction is that responses of the former type have segmental overlaps that are not sequential across the source words. Another reason for not considering them as cases of overlap is that, if the blends were examined in terms of cut-off points, there would be multiple such points in the source words, leading to complications in the interpretation of the results. A specimen analysis of the multiple-overlap English blend *fantabulous* < *fantastic* and *fabulous* is given by Gries (2004b, 655-6), who examined the sequential contribution and non-sequential contribution separately. The second method indeed causes great difficulties in the comparison of blends. Hence, only the first procedure of analysis is adopted in the analysis of the data compiled.

There are also a few cases of central replacement (Beliaeva 2014a, 35), where one segment from one source word replaces a segment in the other source word as, for example, in the English blend *parahawking* < ***para****glid****ing*** and ***hawk.*** An example from the dataset is the blend /zaj.tar/ given as a response to the word pair /**za**ʕ.**tar**/ “thyme” and /za**j**t/ “oil”. Although such cases have more than one switch point in either or both of the source words, they are briefly discussed in Chapter 5 referred to as “sandwich blends”.

2.3.3. Variation in the Diacritisation and Vowelisation of the Responses

It is noteworthy that, despite the explicit instructions asking the respondents to the survey for full diacritisation of their responses, most of the written responses were not diacritised at all. Some responses were only partially diacritised. This meant that the nature of the short vowels in the blends (where they should be used) was either not or only partially indicated. Examples of undiacritised responses are the blend جبز /dʒbz/ given as a response to the word pair جُبْن /dʒubn/ “cheese” and خُبْز /xubz/ “bread”, and the blend جلبن /dʒlbn/ given as a response to the word pair جُبْن

/dʒubn/ “cheese” and لَبَن /la.ban/ “yoghurt”. Examples of partially diacritised responses are the blend لَمر /lamr/ given as a response to the word pair لَبَن /la.ban/ “yoghurt” and تَمْر /tamr/ “dates”, and the blend زَعيت /zaʕjt/ given as a response to the word pair زَعْتَر /zaʕ.tar/ “thyme” and زَيْت /zajt/ “oil”.

This lack of full diacritisation in the data is not entirely surprising since it is not unusual to find Arabic texts in which words are written without some or all of the diacritics that could be used. Although full diacritisation is always used in headwords in Arabic dictionaries and in literary, and especially poetic, texts, diacritics are often left out in casual, non-formal writing in Arabic.

To make clear what is at stake, it may be helpful at this point to give a little more detail about the role that diacritics play, in general, in the way that Arabic words can be written. There are four major diacritics in Arabic, which are written over or below consonant or semi-consonant graphemes. Three of them represent the three short vowels of Arabic, namely <◌َ> /a/, <◌ُ> /u/, and <◌ِ> /i/. The fourth diacritic, which is called *sukūn* “silence”, and is written as a small circle over the grapheme <◌ْ> indicates that the consonant-grapheme over which it is placed is not followed by a short vowel. Examples of the use of these four diacritics in combination with, for instance, the consonant-grapheme <ت> (representing /t/) are as follows: <تَ> /ta/, <تُ> /tu/, <تِ> /ti/, and <تْ> /t/. The corresponding romanised spellings would be <ta, tu, ti, t>. Unlike the short vowels, the three corresponding long vowels of Arabic —<آ> /a:/, <و> /u:/ and <ي> /i:/— are represented orthographically by separate vowel-graphemes rather than diacritics. Examples of words containing such long vowels are مآء /ma:ʔ/ “water”, دوُد /du:d/ “worms”, and ريف /ri:f/ “countryside”.

In addition to the four short-vowel diacritics, some other marks are also referred to as diacritics. These are used over or below graphemes to indicate one of three possible cases. One indicates the presence of a final post-nasalised short vowel, phonemically represented as /an/, /un/, and /in/, which can appear in words only when used in context. Another indicates the so-called elongated final vowel mark <آ> /a:/ which is transcribed exactly as the long vowel <ا> /a:/, and which is, in fact, a mark that in a way merely repeats information already given by the vowel letter itself. A third indicates consonant gemination, which is represented by the mark <◌ّ> over the relevant consonant grapheme. None of the stimulus word-pairs contained these marks (except for the mark of the elongated final vowel <آ> /a:/). This means that the use of the marks that indicate the final post-nasalised short vowel and the consonant gemination by informants in any of the responses would effectively introduce a new consonant into the blend, which would then make it unsuitable for analysis based on criterion (ii) as discussed in section 2.3.4. The mark of the elongated final vowel <آ> /a:/ was used non-finally in a number of the source words, also representing the same phoneme /a:/, as in the source words مآء /ma:ʔ/ “water” and دينآر /di:.na:r/ “dinar”. In such cases, the presence or absence of this diacritic makes no difference to the pronunciation of the word; in both cases, whether <آ>, or <ا>, it represents the same phonemic segment, which is /a:/.

It was noticeable that a few of the responses from the survey included the zero-vowel diacritic *sukūn* over the final consonant grapheme. When word forms appear out of context (for example as isolated words in a dictionary), the presence or absence of the zero-vowel diacritic in the final position does not signify anything about the pronunciation of the word. Hence, when a word form is written with full diacritisation having the final consonant grapheme with a zero-vowel diacritic, the pronunciation that this word represents is the same as when this diacritic is not used. For instance, the Arabic word form meaning “books” in English can be written in Arabic in two ways: one as كُتُبْ, with a final zero-vowel diacritic, and another as كُتُب, with no final zero-vowel diacritic. Both orthographic forms represent the same phonological form /ku.tub/, which is the default word-form when it is used in isolation, which can be found in the main headword entry in any Arabic dictionary. Since the presence or absence of the *sukūn* diacritic on a final grapheme reflects no difference in pronunciation, responses that had all of their graphemes diacritised except for the final one, were counted as fully diacritised.

Given that the three main diacritics mentioned above represent short vowels, they are necessary for indicating the word pattern (or template). For the purpose of this work, we need to know the roots and the word templates of the responses, as both are bound morphemes essential for derivation in Arabic. The root is the consonant skeleton of the word and the word template is “a fixed prosodic template with slots for the root consonants” (Saiegh-Haddad and Henkin-Roitfarb 2014, 9). For instance, the root of the word /xubz/ “bread” is *CCC* and the word template is *CuCC*. It is not unusual for different words to have the same word template; for instance, the two words /xubz/ “bread” and /dʒubn/ “cheese” (used as stimuli in the data collection) have the same word template *CuCC*. Another example is both words /mak.tab/ “office, desk”, and /max.zan/ “store”, which have the same word pattern *CaCCaC*. The word pattern cannot be determined unless full internal diacritisation or vowelisation is provided. The absence of the three diacritics obviously means that no information is given about the presence and nature of the possible vowels; this also means that, in some cases, it is impossible to be certain about the intended number and nature of the syllables in the blend. For instance, the written novel blend /dʒbz/ given as a response to the word pair /dʒubn/ "cheese" and /xubz/ "bread" does not give any information about the vowels to be used in this word, nor about the number of syllables, which makes it impossible even to specify the word template of the response.

One last point about diacritics relates to word-final short-vowel diacritics. Such diacritics are always case-markers in Arabic, which do not form part of the basic word or vocalic template of a word form (whether spoken or written) when given in isolation. The informants were asked to give their responses without any context; hence, they were neither required nor expected to use case markers. Indeed, none of the responses from the survey was case-marked, although in the experiment there was one response with what appeared to be a case marker; this was لُبْجُ /lub.dʒu/ given as a response to the word pair /la.ban/ "yoghurt" and /dʒubn/ "cheese",[8] where the final /u/ suggests that this is a nominative case.

In general, whenever respondents wrote diacritics, these diacritics mostly represented short vowels that were found in the source words. However, there were also a few cases of responses with diacritics indicating short vowels not found in the source words or even indicating a combination of new short vowels together with short vowels found in the source words. An example from the survey dataset of a response containing only short vowels coming from either one or both source words is the blend /tamr.ban/ given as a response to the word pair /**tamr**/ "dates" and /la.**ban**/ "yoghurt". A similar example from the experiment dataset is the blend /ħa.la:j/ given as a response to the word pair /**ħa.l**i:b/ "milk" and /ʃ**a:j**/ "tea". There were no responses from the survey involving only new short vowels in the novel blend, but an example from the experiment dataset of this type of response is the blend /ti.bin/ formed from the word pair /**t**amr/ "dates" and /la.**b**a**n**/ "yoghurt", with neither short vowel coming from the source words. An example from the survey dataset of responses containing a combination of short vowels coming from the source words and new vowels is the blend /da.wa.ma:ʔ/ given as a response to the word pair /**da.w**a:ʔ/ "medication" and /**ma:ʔ**/ "water", with the first /a/ coming from SW1 and the second /a/ a new one. An example of this type of response in the experiment dataset is the blend /xa.dʒubn/ given as a response to the word pair /**x**ubz/ "bread" and /**dʒubn**/ "cheese", with a new short vowel /a/, and with /u/ coming from SW2.

The significance of cases with new short vowels used in the novel blends relates to the question of whether informants formed blends using the vocalic templates of the source words, or only part of it, or an entirely new pattern. This issue is discussed in Chapter 5.

It is necessary at this point to describe how the data were refined. Both the survey and experiment included several irrelevant or unsuitable responses that had the potential to create problems in the analysis. For example, some responses did not comply with the instructions given to the informants, especially in the online survey where guidance could not be offered and instructions were not guaranteed to be followed. Besides, several of the responses from the survey contained typographical errors or included indirect comments or more than one answer. In the experiment, the types of responses that were irrelevant or unsuitable for analysis included, for instance, words that violated the phonotactics of Arabic or that contained consonants or long vowels not found in either of the source words.

Accordingly, to overcome the potential problems that such cases might cause, responses to both survey and experiment were filtered according to several criteria that were established by reviewing all of the collected data; these filtering criteria are discussed next.

2.3.4. Filtering of Datasets

After assessing the whole dataset, the following criteria were applied in determining which responses were to be excluded.

i. Fully diacritised or vowelised responses that were identical to either of the source words (SWs) and which could be seen to be homophonous with either one of the source words were excluded from the data.

ii. Some responses in the survey contained grapheme-consonants that were not found in the source words. No cases of new grapheme-vowels were found in the survey data. There were also responses in the experiment that contained consonants as well as long vowels that were not found in the source words. There were also cases of responses from the experiment that contained vowels that are not attested or used in Standard Arabic. All such responses were excluded from the data. Examples from the responses to the survey containing new grapheme-consonants are ملبن /mlbn/ and جبنت /dʒbnt/ given as responses to the word pair /dʒubn/ “cheese” and /la.ban/ “yoghurt”, where the grapheme-consonant <م> /m/ in the response /mlbn/ and the grapheme-consonant <ت> /t/ in the response /dʒbnt/ are not present in either of the source words. There was also an example from the survey where the respondent added a new grapheme-consonant forming a variant form that differed from the form of the word pairs given as stimuli, which were in Standard Arabic. This example is خَمَآطَه /xa.ma:.tˤah/, given as a response to the word pair /xi.ja:r/ “cucumber” and /tˤa.ma:.tˤim/ “tomato”, where the final sequence /im/ was replaced by the sequence /ah/ in a case that reflects an Iraqi dialect variant of the word /tˤa.ma:.tˤim/ “tomato”. The use of this new consonant as well as the uncertainty caused by giving such a form, where it is not clear what base form the participant was using to create the blend, means that it is impossible to consider such a response in the analysis. The following examples from the experiment include new grapheme-consonants in the responses. Firstly, دِيآر /di.ja:r/ was given as a response to the word pair /**d**i:.na:r/ “dinar” and /du:.l**a:r**/ “dollar”, where the grapheme-consonant /j/ is not found in either source word. Also دَوْنآر /daw.na:r/ was given as a response to the word pair /**d**u:.la:r/ “dollar” and /di:.**na:r**/ “dinar”, where the grapheme-consonant <و>, representing the semi-consonant /w/, is not found in either source word. Furthermore, مْآد /ma:d/ was given as a response to the word pair /ma:s/ “diamond” and /ða.hab/ “gold”, where the grapheme-consonant <د> /d/ is not found in either source word. Finally, زَلَعْتَر /za.laʕ.tar/ was given as a response to the word pair /**za**jt/ “oil” and /z**aʕ.tar**/ “thyme”, where the grapheme-consonant <ـل> /l/ is not found in either source word. Two examples from the responses to the experiment contained new long vowels. One response to the word pair /**zaʕ**.tar/ “thyme” and /zaj**t**/ “oil” was زَعيت /za.ʕi:t/, where the long vowel /i:/ that is graphemically represented as <ي> is not present in either source word. Again, مآدو/ma:.du:/ was given as a response to the word pair /**ma:ʔ**/ “water” and /**d**a.wa:ʔ/ “medication”, but the long vowel /u:/ that is graphemically represented as <و> is not present in either source word. An example of an experiment response that contained vowels not found in Arabic is where دُونأر /do.na:r/ was given as a response to the word pair /**d**u:.la:r/ “dollar” and /di:.**na:r**/ “dinar”, where the vowel /o/ that is graphemically represented as <و> is not used in Standard Arabic.

iii. Responses that violated rules of spelling (in the survey) or phonotactics (in the experiment) were also excluded from the data. Some responses from the survey included obvious spelling mistakes. This category included responses that were written with a diacritic where it should not be placed, or which were written as a disconnected form where the contributed parts were written with a space between them, which is a way of writing that does not comply with the spelling rules of Arabic. An example of the former type of error was the response زَعْتَريتْ /zaʕtrjt/ to the word pair /zaʕ.tar/ "thyme" and /zajt/ "oil", in which a diacritic is placed over the consonant grapheme <ت> /t/ where it does not normally appear (see section 2.3.3 for details of diacritic placement in Arabic). An example of the latter type of error is the response دينآر دولآ /di:.na:r du:.la:/ to the word pair /di:.na:r/ "dinar" and /du:.la:r/ "dollar", which was written with a space between the full word /di:.na:r/ "dinar" and the part /du:.la:/ from the word /du:.la:r/ "dollar". A few cases of responses from the experiment did not conform to the ordinary phonotactics of Arabic. This category included responses that were produced with an initial consonantal cluster. An example of this case was the response خيآطِم /xja:tˤim/ to the word pair /**xi**.**j*a:***r/ "cucumber" and /tˤa.m***a:***.**tˤim**/ "tomato", where the response begins with an initial consonantal cluster /xj/, which is not existing, nor pronounceable in Arabic. Similarly, words pronounced as disconnected segments were excluded on the basis that they seemed to be produced as two-word phrases rather than as a single word. The only example of this case in the data was هَب آس /hab a:s/ given as a response to the word pair /ða.hab/ "gold" and /ma:s/ "diamond", where the contributed elements from the source words were produced with a pause in between. All such responses would have introduced a degree of uncertainty into the interpretation of the results; hence, they were excluded from the data to be analysed.

iv. Responses that included the whole of both source words (whether undiacritised, partially diacritised or fully diacritised), thus in effect creating a compound instead of a blend, were excluded from the data. Examples from the survey were زَيت زَعْتَر /zajt zaʕ.tar/ as a response to the word pair /zajt/ "oil" and /zaʕ.tar/ "thyme", and ذَهَب-مآس /ða.hab-ma:s/ as a response to the word pair /ða.hab/ "gold" and /ma:s/ "diamond". Similar examples from the experiment were شآي حَليب /ʃa:j ħa.li:b/ as a response to the word pair /ʃa:j/ "tea" and /ħa.li:b/ "milk", and خِيآرطَمآطِم /xi.ja:r.tˤa.ma:.tˤim/ as a response to the word pair /xi.ja:r/ "cucumber" and /tˤa.ma:.tˤim/ "tomato".

v. Responses that included both source words linked by a coordinator or preposition were also excluded. Examples from the survey included /tamr wa la.ban/ “dates and yoghurt” as a response to the word pair /tamr/ “dates” and /la.ban/ “yoghurt”, where /wa/ “and” is used as a coordinator, and /xubz bi dʒubn/ “bread with cheese” as a response to the word pair /xubz/ “bread” and /dʒubn/ “cheese”, where the preposition /bi/ “with” has been added.[9] No responses of this type were found in the data from the experiment.

vi. All indirect or tangential responses and comments in the Survey and Experiment were excluded. These included responses other than a potential answer such as words like *yes* or *no* given in Arabic or English or full sentences like *I do not know* also in Arabic or English, or a sequence of letters such as <aaaaa> or <ttttt> in Arabic, or symbols such as a question mark or an X mark.

vii. Although the informants were asked to give only one answer to each word pair, the data included several responses where the informants gave two invented blends for a given word pair. For any response in either method of data collection that included two answers, only the first was considered for analysis.

viii. As pointed out above, one case-marked response was found in the whole dataset. That was لُبْجُ /lub.dʒu/ given in the experiment as a response to the word pair /la.ban/ “yoghurt” and /dʒubn/ “cheese”. This response contains the short vowel /u/ word-finally, which could be taken to indicate that the form is in the nominative case, although without any surrounding context. There is no way of determining if this is what the participant intended, particularly when we consider that the /dʒu-/ part of /dʒubn/ also has this vowel. However, this was the only response of this kind in the whole dataset, and therefore cannot be used as a basis for the analysis of case-marked responses.

As a result of applying this set of filtering criteria, 154 (13.58%) responses from the survey were excluded, leaving a total of 980 (86.42%) responses in the dataset used for analysis, and 73 (12.67%) responses from the experiment were excluded, leaving a total of 503 (87.33%) responses in the dataset used for analysis. Table 2.5 and Table 2.6 below summarise the types and numbers of responses excluded from the survey and the experiment, respectively, according to the various filtering criteria listed above. The Roman numerals given after the response types in the left-hand column refer to the filtering criteria. In both tables, the total number of unsuitable responses in the various categories is given first. Two numbers in parentheses follow this number. These two numbers indicate the number of unsuitable responses given in answer to the first list of word pairs and the number of unsuitable responses given in answer to the subsequent list of the same word pairs with reversed ordering. All these numbers are followed by percentages indicating the proportion of these responses out of the total number of excluded responses.

Table 2.5: Overview of responses excluded from the survey dataset

Types of unsuitable responses	Total number of responses
Spelling errors (typos, unexpected spaces, symbols) (iii)	42 (16, 26) = 27% out of 154
Compounds (iv)	35 (15, 20) = 23% out of 154
Identical to either one of the source words (i)	26 (14, 12) = 17% out of 154
Indirect responses (vi)	25 (13, 12) = 16% out of 154
New consonant(s) added (ii)	16 (11, 5) = 10% out of 154
Phrases (v)	10 (4, 6) = 6% out of 154
Total number of excluded responses	**154 (73, 81), 14% out of 1134**

Table 2.6: Overview of responses excluded from the experiment dataset

Types of unsuitable responses	Total number of responses (1^{st} ordering, 2^{nd} ordering)
New consonant(s) added (ii)	34 (12,22), 47%
Identical to either one of the source words (i)	11 (7,4), 16%
Non-Arabic vowel(s) added (ii)	10 (9,1), 14%
New long vowel(s) added (ii)	10 (0,10), 14%
Phonotactics violation (iii)	3 (2,1), 4%
Compounds (iv)	2 (2,0), 3%
Indirect responses (vi)	2 (1,1), 3%
Case-marked (viii)	1 (0,1), 2%
Total number of excluded responses	**73 (33,40), 13% out of 576**

The responses from the survey (980 responses) that passed the filtering criteria showed some variability in the way in which the respondents typed their answers. Only 59 responses (6%) were fully diacritised, with 69 (7%) being partially diacritised, and 852 (87%) undiacritised.

Full details of the number of fully, partially and undiacritised responses from the survey are presented in Table 2.7 below. For each category of responses, the total number is given first. Two numbers in parentheses follow this number. These two numbers indicate the number of responses given in answer to the first list of word pairs and then the number of responses given in answer to the subsequent list of the same word pairs with reversed ordering. All these numbers are followed by percentages indicating the proportion of these responses out of the total number of responses.

Table 2.7: Overview of the refined dataset of the survey as related to diacritisation

The manner of diacritisation/vowelisation	Total number of responses from the survey (written responses)
Fully diacritised responses	59 (36,23), 6%
Partially diacritised responses	69 (36,33), 7%
Undiacritised responses	852 (423,429), 87%
Total number of responses	**980**

Concerning the experiment, it was perhaps surprising that even though this involved spoken responses, there were responses that included cases of illicit consonant clusters. In these cases, the respondents appeared to intentionally, albeit with some difficulty, be not producing some vowels where they should. The two cases of such responses were: طْيآر /tˤja:r/ given to the word pair /tˤa.ma:.tˤim/ "tomato" and /xi.ja:r/ "cucumber", and خْيآطِم /xja:tˤim/ given to the word pair /xi.ja:r/ "cucumber" and /tˤa.ma:.tˤim/ "tomato". Both were excluded from the analysis because they violated the phonotactic rules of Arabic (filtering criterion (iii)). This leaves 503 responses that constitute the data to be analysed from the experiment.

3. Blending in English

3.1. Introduction

This chapter discusses blending and blends in English. Section 3.2 presents a brief background on blending within two main theoretical frameworks: Generative Grammar (GG) and Optimality Theory (OT). Section 3.3 is a discussion of major issues related to the definition, classification and form of blends. Section 3.4 considers whether and in what sense blending can be considered a productive process for forming new words. Section 3.5 presents some linguistic studies on English blends and discusses several tendencies identified based on the most investigated features of blends. Section 3.6 is a summary of blend-formation tendencies in English that constitute the focus of this book.

3.2. Theoretical Background on Blending in English

This section presents a brief discussion of blending within two main theoretical frameworks, namely Generative Grammar (GG) and Optimality Theory (OT), with a focus on their accounts of English word-formation. The discussion also sheds the light on the justifications for classifying blending as an extragrammatical phenomenon rather than as a grammatical process.

Aronoff (1976, 46-86) "developed the notion of a Word Formation Rule as an operation on a base, accompanied by various conditions on the base". Although Aronoff (1976, 46-86) discusses these word-formation rules (WFRs) in terms of the syntax, semantics, morphology and phonology of words produced by such rules, there is no reference to blending as a word-formation process within the Generative framework that he adopts. This could be a consequence of his view of WFRs "as an operation on a base" or because blending is not considered a grammatical morphological process, but rather as an extragrammatical morphological process. The WFRs that Aronoff (1976) refers to cannot describe the formation of blends probably because he (1976, 21) states that, although blends are derived from other words, they are not transparent, i.e. there is a lack of semantic transparency in the parts of the blend, referred to in this book by the term “fracto-lexemes”. Similarly, Cannon (1986, 748) states that the diverse and numerous patterns that English blends exhibit cannot be generated within the traditional framework of generative rules.

Mattiello (2013, 21) confirms this view stating that blends, being extragrammatical formations, “are mainly based on analogical patterns” that “do not generally change the denotative meaning of the input, but only express a certain attitude on the part of the speaker”, hence they are “irrelevant within the generative approach to word-formation”.

Accordingly, WFRs cannot generate blends in the same way a paradigm is generated by adding affixes to a base, where the affixes are semantically transparent, as well as the base. Hence, the creation of new blends is not a matter of formation rules, but rather of tendencies, patterns, and/or constraints. This is the view adopted and argued for in this book.

Another broadly similar account is that of McCarthy and Prince (1996) who discuss word-formation rules in the context of prosodic morphology and the framework of an Optimality Theory approach. Although the notions of prosodic morphology and OT constraints can be applied to English blend structures (see the discussion of Bat-EL and Cohen (2012) in section 3.5.3). McCarthy and Prince (1996) do not discuss blends, focusing instead on affixation and compounding as examples of word-formation processes.

While blending is not described as a word-formation process within these two frameworks of Generative Grammar and Optimality Theory, this word-formation phenomenon has been investigated thoroughly, whether as a constraint-governed and hence predictable process or as a matter of “unusual coinages” and “oddities” (Aronoff 1976, 20). Aronoff’s (Aronoff 1976, 18-19); (1983, 165)) framework states that a word-formation rule is “a directional device which forms potential words from actual words”. These potential words are formed using complex morphological patterns, which Aronoff (1983, 165) calls word-formation patterns, and these patterns are subcategories of the output of a word-formation rule. What is interesting about the distinction between these patterns and the rules is that productivity is a property of the former, and not the latter (Aronoff 1983, 165).

Although unpredictability is a feature of blending in the sense that “there is no transparent analysis into morphs”, the word-formation rules of a given language allow for an amount of predictability as to which forms can be candidate blends (Bauer 1983, 234). Referring to a number of these rules, Bauer (1983, 234-5) explains why, for instance, *dawk* < *dove* + *hawk* wins over several other potential blend formations. These rules would preclude some formations from candidacy because of lexical blocking, like /dʌk/ and /hʌk/, or because of the unusual pattern of fracto-lexemes, like /dɔv/ and /hʌk/, where neither is of the usual pattern AD < AB + CD, or because the orthographic representation of the blend would introduce a pronunciation that does not refer to the original sounds, like /hʌv/ which could be spelt as *hove*, hence be re-pronounced as /həuv/.

Recently, Bauer (2012) has reconsidered the analysis of blends. He argues (2012, 14-19) that there are regularities and constraints involved in blending, and he makes a distinction between the core and the periphery, where the core refers to prototypical categories of blends and the periphery to less prototypical categories. Bauer (2012, 11) suggests that rather than being "cut-and-dried categories", blends should be conceived in terms of more or less "prototypical or canonical categories". Accordingly, no criteria can say that a word is a blend or not, but there are "defeasible constraints" on blend formation, "which may or may not be met in individual cases", meaning that these constraints may have counter-examples (Bauer 2012, 11-12, 14).

Bauer (2012, 14-17) lists nine of these blend-formation constraints:

1) "the longest base word sets up a maximum length for the blend",
2) the contributed parts in a polysyllabic blend should be each at least one syllable long,
3) the stressed syllable from at least one of the two bases (or maybe both) is retained in the blend, with a preference for the stress pattern of the second base to be retained,
4) both base words must undergo deletion,
5) when the first part of the blend ends with a consonant and the second begins with a consonant, the second consonant is less sonorant than the first,
6) a blend "must meet all relevant phonotactic requirements",
7) a monosyllabic blend is formed from a syllable onset from the first base and a syllable rhyme from the second,
8) any common phoneme(s)/letter(s) between the two base words result in an overlap "that defines the crossover point", and
9) the breakpoint in a blend occurs "at a syllable break or, failing that, at an onset/rhyme break".

More recently, Bauer, Lieber and Plag (2013, 462) have argued that "blends are a productive word-formation process in English which, despite the considerable variability, conforms to some general principles and tendencies that highly restrict the structure of possible formations".

On the same track, Plag (2003, 13, 17, 129) classifies blending as a "non-concatenative", "non-affixational derivational" process of word formation in which, "in spite of the initial impression of irregularity, a whole range of systematic structural restrictions can be determined". Nevertheless, although blends have been described as predictable and regular ((Lehrer 2003); (Gries 2004a); (Gries 2004b); (Bat-El and Cohen 2012); (Bauer 2012)), it is apparent that they "are not completely predictable", hence showing "different degrees of opacity" (Mattiello 2013, 33).

The change in the position of some scholars, concerning their view of the nature of blending as a linguistic phenomenon, can be related to the classification of the process as an "extra-grammatical" mechanism ((Dressler 2000); (Ronneberger-Sibold 2006); (Mattiello 2013)) of "word creation" (Ronneberger-Sibold 2010), as opposed to considering it a regular and productive phenomenon of word formation ((Arndt-Lappe and Plag 2013); (Bauer, Lieber and Plag 2013)).

The structure of words is governed either by a set of constraints and patterns or by a set of rules (Dressler 2000). The former set falls within a module of morphology called "extragrammatical morphology", also referred to by Zwicky and Pullum (1987) as "expressive morphology", while the latter falls within a module called "morphological grammar" (Dressler 2000, 1). Since blending is a process that has no fixed rules, but rather constraints, patterns and/or tendencies, it is better classified as an extragrammatical morphological operation (EMO) (Dressler 2000, 2).

Two reasons are taken into consideration for excluding blending from grammatical morphology: one relates to the morphotactics of the blends and the other to their semantics ((Dressler 2000); (Mattiello 2013)).

Morphological rules produce "unconscious" and "potential words" and require "meaning change" (Dressler 2000, 4). Most blends "do not occur in unconscious, productive new formations", and, therefore, "cannot be defined as potential words" (Dressler 2000, 4-5). It is also the case that most blends do not have a meaning that is different from the meanings of their source words (Mattiello 2013, 21). Consequently, blends are not morphologically rule-governed.

Additionally, "morphotactic devices for forming blends" are "much less regular" than, for instance, those of "grammatical compound formations" (Dressler 2000, 5). This indicates that the blends' "final segmental make-up is often unpredictable", which leads to having merely preferences and not rules (Dressler 2000, 5). This feature made some morphologists (such as Bauer (1983, 234-237) and Rainer (1993, 87-90)) "exclude blending from morphological grammar" ((Dressler 2000, 5); (Mattiello 2013, 33)).

Moreover, some fracto-lexemes that are repeatedly used in blending are not reinterpreted, but simply undergo abbreviation, which "should be kept distinct from "secretion", involving reinterpretation of linguistic units" (Mattiello 2013, 34). This process of "abbreviation confines blends to extra-grammaticality, typically characterised by the difficulty to predict the output given an input" (Mattiello 2013, 34).

Blending qualifies as extragrammatical because "it includes properties which do not match the grammar of the language in question, or […] lacks properties regularly associated with processes of similar type" and "it may include processes which are not present elsewhere in the morphology of the language in question"; moreover, blends being "conscious creations" is a fact that "has been given as an additional argument in favour of considering them extragrammatical" (Ronneberger-Sibold 2010, 390-1).

Nevertheless, Arndt-Lappe and Plag (2013) found that there is a set of constraints that determine the structure of blends, therefore making them predictable, and hence regular. This takes us back to the hypothesis, presented in Arndt-Lappe and Plag's (2013) study, that the final structure of the blend is determined, or predicted, by phonological rules that relate to the stress properties of the two bases in the blend and determine "the length of the blend, the location of the switchpoint, and the stress of the blend" (Arndt-Lappe and Plag 2013, 537). Whatever position is taken in this debate on the nature of blending—whether it is seen as predictable or unpredictable, regular or irregular—it is always the case that there are counterexamples. Blending has been thought to be irregular and unpredictable ((Bauer 1983, 225); (Marchand 1969)), although with the acceptance that there is a degree of regularity and predictability in some blends. On the other hand, blending has been recently viewed as regular and predictable (Bauer, Lieber and Plag 2013, 460), although there are clear cases of blends that do not follow regular patterns of formation.

This book agrees with the hypothesis that prosodic morphology explains the process of blending. This means that blending is manipulated by prosodic constituents rather than by the agglutination of morphemes and, therefore, that the phonological form of the output relies on the prosodic categories. This approach has been successful in accounting for the phonological properties of blends.[10] Additionally, statistical and computational approaches have supported and added to results arrived at by the constraint-based approaches of prosodic morphology, with the properties of blends successfully modelled, quantitatively and computationally (Bauer, Lieber and Plag 2013, 460) (Statistical and computational studies include, but are not limited to, Cook and Stevenson (2010), and Gries (2012).

3.3. Definition and Form-Related Issues

Two issues that relate to the variation in the structural patterns of blends are discussed in this section: the definition (broad or narrow) of the blends based on their structure, and, based on the definition of blends, the criterion for differentiating blends from clipped compounds.

The general, broad definition of blending tends to include word forms that can belong to other processes of word formation: two words are joined in a way where at least one undergoes truncation. Bauer (1983, 236) states that since there are various types of blends whose analysis can be perceived differently by the hearers, blending tends to shade off into many processes of word formation, particularly that of compounding; this process, in particular, shares many features with blending and consequently causes confusion as to whether a given word form is to be labelled a blend or a clipped compound.

Of course, in contrast, a narrow definition of blends would restrict the membership of this process to specific word forms that are formed according to a more restrictive set of criteria. Bat-El (2006, 66) adopts a formal criterion according to which she restricts blends to certain formations. Forms in which the right edges of the source words are truncated (hence having the structural pattern AC), such as *sitcom* < *situation* and *comedy*, *modem* < *modulator* and *demodulator*, and *fortran* < *formula* and *translation*, are classified as clipped compounds, rather than blends. Additionally, blends in which only the first word undergoes truncation (hence having the structural pattern AW) would also be considered a clipped compound, e.g. *mocamp* < *motor* and *camp*, especially when each word contributes only one syllable to the surface form, which is a characteristic of clipped compounds (Bat-El 2006).

In addition to these structural considerations, Bat-El (2006, 67) also distinguishes blends from clipped compounds based on lexical categories and semantic characteristics: blends allow any possible combination of lexical categories, including some that do not appear in compounds, e.g. verb-verb, as in *baffound* < *baffle* and *confound*; moreover, blends do not show a preference for endocentric or exocentric relation, whereas compounds are mostly endocentric.

For Bat-El (2006, 67) , the formation of a blend involves two competing goals. On the one hand, it must have the structure of a single word, unlike compounds, in which the two base words are accessible. Consequently, the blend often adopts the number of syllables in one of its base words, thus truncating some segmental material (Bat-El 2006, 67) . On the other hand, in apparent competition with this, a blend must preserve as much of the structure from its base words as possible (Bat-El 2006, 67).

On the same track, Gries (2006) and Bauer, Lieber and Plag (2013) differentiate between the AC and AD formations, stating that they follow different structural requirements. On this basis, AC formations are often treated as a pattern distinct from blending and referred to as “clipped compounds” (Bauer, Lieber and Plag 2013) or “complex clippings” (Gries 2006). Clipped compounds (AC formations) systematically preserve much less material than AD formations and overlaps of segmental material are less common in clipped compounds (Arndt-Lappe and Plag 2013, 540-1). Although Arndt-Lappe and Plag (2013, 541) consider AD formations as including both blends and clipped compounds together, they state that there are differences regarding their base words: while the bases of AD blends tend to be orthographically and phonologically highly similar to each other, clipped compound bases are significantly less similar to each other (Arndt-Lappe and Plag 2013, 541).

For Bauer, Lieber and Plag (2013, 458) a blend is originally a compound. They define a blend as a compound that has undergone a phonological loss in at least one of the constituents and behaves semantically as any compound, though it adopts the stress pattern of a single word, normally that of one of the constituents. Yet a certain amount of uncertainty about the nature of blending is reflected in the fact that Bauer, Lieber and Plag (2013, 458) nevertheless acknowledge that this phenomenon is not yet clearly defined. There has been no specific determination in Bauer, Lieber and Plag’s (2013) discussion of the boundaries of what is referred to as a blend.

One problem is the formal features of what to be called a blend. Bauer, Lieber and Plag (2013, 458) distinguish between words where medial segmental material is lost, e.g. *brunch*, and others where both bases lose their final material, e.g. *modem*. While referring to the first of these examples as a blend and the second as a clipped compound, this distinction can be a counter-example for Bauer, Lieber and Plag’s (2013, 458) definition cited in the previous paragraph. Since they refer to the blend as a compound, there is no reason why they cannot still classify both words as blends.

Despite this potential confusion in the use of the terms, Bauer, Lieber and Plag (2013, 458) do propose a formula for the structure of each subtype. A blend follows the formula AB+CD $\rightarrow$ AD, whereas a clipped compound follows the formula AB+CD $\rightarrow$ AC. Based on the distinction between these two subtypes, Bauer, Lieber and Plag (2013, 458) justify classifying them as two distinct processes. Clipped compounds are different from blends in the following features:

- the former preserve much less material than the latter and they do this in a systematic pattern;
- the former show underrepresentation regarding the overlap of segmental material;
- base words of the former are less similar to each other than those of the latter, which show high orthographic and phonological similarity; and
- the former is a less productive process than the latter.

Mattiello (2013, 60) suggests that blending, being “an extra-grammatical subtractive operation”, “may delete larger and not necessarily non-salient parts” of the base words, as in, for instance, *sitcom* < *situation comedy*, *modem* < *modulator* + *demodulator*, *ginormous* < *gigantic* + *enormous*, and *ambisextrous* < *ambidextrous* + *sex*. Furthermore, what makes blends different from clipped compounds, such as *hi-fi* < *high fidelity* and *adman* < *advertising man*, is that the bases of the latter have a composite rather than independent meaning (Mattiello 2013, 70).

To sum up, blending, as a rich source of new words, may share with other sources of words some formal and semantic features, depending on how blending is defined. The broader the definition of blending is, the more inclusive it will be of word forms formed by other processes simply because they have similar features, as is the case with the definition by Bauer, Lieber and Plag (2013). Similarly, the narrower the definition is, the less inclusive it will be, as is the case with the definition by Bat-El (2006).

3.4. A View on the Productivity of Blending

This section addresses the question of whether or not blending is a productive process.

Blending is mostly defined as “a productive process” whereby new words are formed by joining parts from other words ((Bauer 1983, 236); (López Rúa 2012, 23); (Ralli and Xydopoulos 2012, 47)), and it has been described as an extra-grammatical process (Mattiello 2013, 4) which has no rules (Gries 2012, 146) but rather constraints (Bauer 2012, 11), or patterns and tendencies (section 3.5).

The concept of productivity has been viewed differently by scholars as to the scope it covers. Some scholars describe productivity as a property of processes ((Uhlenbeck 1978, 4); (Anderson 1982, 585); (Bauer 2001, 13)), while others describe it as a property of rules ((Aronoff 1976, 36); (Zwanenburg 1980, 248)). Moreover, the general definition of productivity has been only applied to derivational processes like affixation ((Bauer 1983); (Bauer 2001); (Plag, Dalton-Puffer and Baayen 1999)).

Moreover, Bauer (1983, 97) states that "productivity is not so much an either/or phenomenon as a cline" and that "[S]ome processes are more productive than others". This statement has been confirmed by Plag, Dalton-Puffer and Baayen (1999, 11-12) who states that "productivity is a gradual phenomenon, which means that morphological processes are either more or less productive than others", and by Dressler (2000, 463) who states that there is "gradualness in the degrees of productivity in morphology". In practice, the notion of productivity is usually applied to affixes only, partly because of the great influence of Baayen's (1991) work on measuring productivity, which is based on a methodology that is very well suited to affixation, but not to other methods of making new words, such as compounding, clipping, and blending.

Baayen (1991, 124) developed "two complementary techniques for evaluating the global productivity of word formation processes" both were obtained by focusing "on the growth curve of the vocabulary". To evaluate the productivity of a word-formation process, namely derivation/affixation, Baayen (1991, 124-5) considered jointly the degree of productivity and the extent of use of vocabulary based on 1) frequency by counting "the number of tokens, the number of types and the number of the hapaxes in the item sample", and 2) on pragmatic potentiality by obtaining "a single explicit ranking by means of the index of pragmatic potentiality". Accordingly, the extent to which a morphological category, for instance, affixation, is productive may also be evaluated by considering the extent to which the number of potential types exceeds the number of observed types. However, this perspective of productivity does not apply to the process of blending (Baayen 1991, 124-5).

For Bauer (2001, 13), it is best to view productivity as a property of processes, not of words or word parts. For instance, in a word like *sayable*, what is productive is the process of adding -able to a verb to form an adjective. However, Dressler (2008, 457) argues that "[P]roductive morphological patterns are […] considered to be those that freely apply to new words…". In this case, it can also be argued that blending patterns and tendencies can also be applied to new blends, which could make them productive.

Although the productivity of blending as a process would be hard to measure using Baayen's (2009) methods, there are two signs that blending is a relatively productive process (in English as it has been shown in scholarly statistical research on blending, and in Arabic as the preliminary results of this book show in section 5.3): (1) the sheer number of blends that exist, and (2) the relative ease with which speakers can make a blend out of two words when asked to do so.

Since "it is unclear how the fact that a blend is lexicalised affects the question of how well its structure reflects productive mechanisms", it is assumed with any research on productivity that "productive mechanisms are best investigated in rare formations rather than in frequent formations" ((Baayen 1992); (Baayen 1993); (Plag 1999)). This hypothesis can be confirmed by the results that are arrived at in this book, where the rare formations found in the data analysed show that some patterns of blends can be productive since the blenders can form novel blends following these patterns (section 5.3.1.1.iii).

However, Bauer (2001, 22) states that "[M]ost linguists also wish to exclude some general patterns of word-making from the domain of productivity" as well as "words which are intentionally coined, leaving only such words as are automatically coined without speakers or hearers necessarily being aware of them", which would, in particular, exclude blends.

Nevertheless, Mattiello (2013) has another viewpoint on the productivity of blending. She (2013, 19, 22, 30) states that blending, an extra-grammatical, non-rule-governed, phenomenon, is an analogical process and that blends are formations that "are based on creativity and analogy rather than on productivity rules". She (2013, 20) also states that "[A]lthough there are some principles and regularities in the production of blends […], these regularities are not productive rules, in the sense that […] they do not allow full prediction of a regular output". Moreover, "[T]he analogical principle governing their formation is indeed more permissive than rules […]" (Mattiello 2013, 20, 251). Accordingly, extra-grammatical processes are expected to be unproductive (Mattiello 2013, 38).

In Mattiello's (2013) approach, the process of making a blend with a specific fracto-lexeme is, by definition, not productive. What can be productive is the process of making blends in general. Nevertheless, considering any specific fracto-lexeme productive is problematic because that would imply there is a productive process of using it to make blends, whereas they are frequently used and on the way to becoming morphemised, hence cannot be considered fracto-lexemes but rather "splinters" (Mattiello 2013, 34).

Mattiello (2013, 34) argues that a form like -*holic* (as in *foodaholic*, *workoholic*) has undergone a "secretion process", hence become a "secreted combining form", which makes it lose "its connection with the source word *alcoholic* and can be considered as a morpheme in its own right". These secreted combining forms "attach to other bases to obtain new words; however […] they discard certain semantic elements from their source words: for instance, a *sugarholic* is "a person *addicted to sugar*", but has nothing to do with "alcohol" (Mattiello 2013, 35-6).

Mattiello (2013) distinguishes between productivity and creativity. She (2013, 48) defines "productivity as that property of language which allows a native speaker to create new words in a rule-governed way", whereas she defines creativity as "the native speaker's ability to extend the language system in a motivated, but unpredictable (non-rule-governed) way".

Moreover, Mattiello (2013, 48) agrees with the statement that productivity "is a gradual phenomenon ranging from unproductive to fully productive"; whereas she (2013, 48) describes creativity as being "an absolute phenomenon, with no intermediate degrees"; which is "either a morphological formation is obtained creatively or it is not". While "productivity coins new words by exploiting word-formation rules, creativity coins new words by considering both rules and analogical patterns" (Mattiello 2013, 48).

Consequently, "words coined by using word-formation rules are entirely predictable, while words exploiting analogical patterns are only partially so" (Mattiello 2013, 49). According to Mattiello (2013, 49), "those new words which are formed regularly […] become established as part of the norm […] whereas those which are formed creatively may fail to become part of the norm", which makes it "clear that productivity is irrelevant as a criterion for predicting neologisms, which can also be obtained through creativity (Mattiello 2013, 49). Hence, "extra-grammatical formations offer the language user the potential to produce new words, but this potential is a matter of availability rather than of actual profitability" (Mattiello 2013, 49).

Mattiello confirms that "[E]xtra-grammatical processes must be necessarily included in the realm of creativity" because "they are only to some extent predictable by means of analogy" and not "controlled by productive generative-like rules". Accordingly, the underlying mechanisms" of "extra-grammatical morphological formations" are "not productive word formation rules, but analogical patterns obtained from morphological structures already in use elsewhere" (Mattiello 2013, 53).

Mattiello (2013, 117) claims that secreted forms are "regular and therefore grammatical, although marginal in morphology" and that they have "acquired morpheme status, and cannot be viewed as part of a blend". Moreover, it can be said that these forms are moderately productive, which is why they cannot be considered as bound morphemes; however, if they become more productive, they can become free, in which case, they cannot be considered as representatives of bases in blends (Bauer, Lieber and Plag 2013, 525).

To sum up, from a general perspective, blending is described as a productive word-formation process since new blends are frequently formed and could be lexicalised, and from a specific perspective, blending is described as creative since it makes use of analogical patterns but at the same time, the newly formed blends might not be lexicalised.

The following section outlines the blend-formation features and tendencies for which there is good supporting evidence in the literature on blending in English.

3.5. English Blend-Formation Features and Tendencies

The structural characteristics of blends can be affected by several features. These play a role in determining the final shape of a blend and help explain why it has this particular form and not another.

A major focus of recent research has been on the prosodic structure of blends and how it is determined by the prosodic structure of the source words. Studying the prosodic structure of the blend includes identifying the degree of shortening that source words undergo and their contribution to the blend. These investigations, which focus on both established and novel blends, have identified several blend-formation tendencies or patterns; hence making it possible to determine the structure of a blend based on the structure of the corresponding source words.

Among the observations that Bergström (1906, 46) first made on blending, which were later elaborated upon by many scholars, he mentioned two factors as having a role in the formation of "word-blendings": stress and syllabic-boundary limits. Although Bergström (1906, 46) stated that his observations were "not very instructive", he thought "that in the blending the stress is generally kept on a vowel stressed in one of the parent-words […], [and] that the limit between syllables […] generally marks the limit in the blendings". It appears that stress patterns and cut-off points in source words, as well as, in recent investigations, the amount or the proportional contribution of source words to the blend, play central roles in determining the structure of English blends.

This section focuses on these three major prosodic features that were first referred to by Bergström (1906) and which have been further investigated since then. These are: (1) the cut-off points in the source words; (2) the proportional contributions from source words to blends; and (3) the stress patterns of the blend.

3.5.1. Cut-off Points in Source Words

The following chronological overview of the literature focuses on previous studies that have identified the cut-off point as one of the dominant factors in shaping the final structure of the blend.

Cannon (1986, 742) analysed a set of blends to find out where the cut-off points occur in the source words. His corpus included 132 written English blends: 118 nouns, 11 adjectives, and 3 verbs, compiled from The Barnhart Dictionary of New English since 1963 (1973), The Second Barnhart Dictionary of New English (1980), and Merriam's 9,000 Words (1983).

In his analysis of this corpus, Cannon (1986, 726) found that in 90 blends the "fusing points" came at:

> (a) a syllabic boundary, as in *ausform* (*austenitic* + *deform*), (b) a morphemic one, as in *alphametic* (*alphabet* + *arithmetic*), which almost invariably comes at a syllabic boundary; and (c) a nonboundary, as in *cystathionine* (*cysteine* + *methionine*), where a linking /a/ replaces a vowel in order to create a new syllable, or in *splanch* (*split-level* + *ranch*), where a new monosyllable is created.[11]

The first type of example has the cut-off point occur at a syllable boundary (*ausform* < ***aus****tenitic* and *de****form***), and the second type has the cut-off point occur between two morphemes (*alphametic* < ***alpha****bet* and *arith****metic***). It seems that Cannon (1986, 742) is interested only in the distinction "at a syllable boundary" versus "not at a syllable boundary", as is the case in the third type of cut-off point, where he (1986, 742) just calls it "a nonboundary" fusing point without indicating specifically where it occurs. This type should be further analysed in terms of where within the syllable the cut-off point occurs. So, in *cystathionine* < ***cyst***|*eine* and *me*|***thionine***, the cut-off point in the first source word occurs between the onset and the nucleus of the second syllable, while in *splanch* < ***spl***|*it-level* and *r*|***anch***, the cut-off points occur between the onset and nucleus in both source words.

In the second type, in (b) above, although the example that is given shows that the cut-off point occurs at morphemic boundaries, Cannon (1986, 742) still mentions that it "almost invariably comes at a syllabic boundary", and it is, therefore, unclear why he does not simply group this along with the first type of blend that he describes in (a).

Although Cannon (1986) states that cut-off points occur at syllabic boundaries, without referring to where the cut-off points occur within syllables, the types of cut-off points he identified reflect a tendency for cut-off points to occur at, in addition to syllable boundaries, within-syllable breaks, especially between the onset and nucleus.

There is some variation in the ways that fracto-lexemes can be joined at the split point in a blend. Cannon (1986) analysed in detail what happens at and/or around the split point of his 132 blends. There are two basic modes of fusion: one with and the other without overlapping sounds or letters.

In cases with overlapping sounds or letters, Cannon (1986, 742) identified four patterns. The first involves the truncation of both source words while retaining one shared letter whose pronunciation is taken from one of the source words, as in the blend *Dixican* < ***Dixi***|*e* /ˈdɪksi/ and *Republ*|***ican*** /rɪˈpʌblɨk(ə)n/ where the letter <*i*> is found in both source words but takes its pronunciation (/i/) from the <*ie*> of the first source word.[12] There are also cases of blends where the letter retained in the blend has the same pronunciation in both source words, as in *fantabulous* < ***fanta***|*stic* and *f*|***abulous***, where the letter <*a*> has the same pronunciation in both source words (Cannon 1986, 742).

The second pattern involves the blend retaining both of the source words in full while also having one or more shared letters that are found in both source words, as in the blend *glassteel* < ***glass*** and ***steel***, where both words are retained with a shared <*s*>, and *autopia* < ***auto*** and ***utopia***, where both words are retained with three shared letters <*uto*>, although the pronunciation of the shared <*u*> comes from the <*au*> of *auto* and not from *utopia*.

The third pattern involves retaining the whole of the second source word and truncating the first source word with a shared segment of letters, as in the blend *biathlete* < ***biathl***|*on* and ***athlete***. The *Oxford English Dictionary Online* (1996) gives the etymology of this word as follows: *biathlete* < *biathl*- (in *biathlon* n.) + *ete* (in athlete n.), which means that the analysis of such cases can vary. This book adheres to Kaunisto's (2013, 4) viewpoint of considering such cases as having shared elements simply because one cannot exactly decide which source word is the contributor of such elements, especially when measuring the proportional contributions from source words to blends. Additionally, these elements facilitate the recognition of both source words and hence help to make the meaning of the blend transparent.

The fourth pattern involves retaining the whole of the first source word and truncating the second with a shared letter, as in the blend *beefalo* < ***beef*** and *buf*|***falo***.

Concerning cases of fusion without overlapping, two patterns were identified: a fusion either at a syllabic juncture or one which changes the syllabic juncture (Cannon 1986, 74). In the former, the original syllabification of the fracto-lexemes is preserved in the blend, as in *stagflation* < ***stag***|*nation* and *in*|***flation*** where the fusion occurs at a consonantal juncture, and in *parafoil* < ***para***|*chute* and *air*|***foil*** where the fusion occurs at a vowel-consonant juncture. In these cases, the syllabic structure of the fracto-lexemes is maintained (Cannon 1986, 743). Other examples of this pattern given by Cannon (1986, 743) are the blends *psytocracy* < ***psy***|*chological* and *au*|***tocracy***, *radionics* < ***radi***|*ation* and *electr*|***onics***, and *Dexedrine* < ***dex***|*tro-amphetamine* and *Benz*|***edrine***.

In the second type of fusion pattern, one or both of the fracto-lexemes undergo resyllabification, as in the blends *linar* < ***lin***|*e* and *st*|***ar***, *varactor* < ***var***|*ying* and *re*|***actor***, *ecdysone* < ***ecdys***|*is* and *horm*|***one***, and *neuristor* < ***neur***|*on* and *trans*|***istor***. A rather special example with resyllabification is the blend *etorphine* < ***et***|*her* and *m*|***orphine***, which quite unusually involves consonant-quality change. In this blend, the letter <*t*> from the first source word is retained due to the cut-off point occurring between the two graphemes <*t*> and <*h*>, which represent the sound /θ/. This changes the /θ/ of the source word into /t/ in the blend, where it becomes the initial consonant of the new syllable *tor-* (Cannon 1986, 743).

Cannon (1986) found that there is a preference in one or both source words, with or without overlapping, for the cut-off point to occur at a phonological boundary, meaning syllable, onset and rime boundaries. Cannon (1986) concluded his discussion of cut-off points in source words by stating that they mostly occur between syllables, or between syllabic constituents with the fracto-lexemes being fused at a syllabic juncture, mostly involving resyllabification. These types of fusion at the fusing point (without or with overlap) are also discussed in section 5.3.1.2.ii since they relate to the feature of the cut-off point.

Another study that provided evidence supporting the tendency for cut-off points to occur at phonological joints or boundaries is that of Kubozono (1990) that compared morphological and phonological constraints on the structure of Japanese and English blends. Kubozono (1990, 4) found evidence that Japanese blends show the same tendencies as English blends. The focus in this overview concerns only Kubozono's (1990) findings on English blends.

Kubozono (1990, 1-2) analysed a large corpus of 3661 English blends consisting of 61 spontaneous error-blends and 3600 consciously formed blends compiled from various sources, with the analysis focusing on morphological and phonological constraints. His main aim was to "uncover the phonological constraints on blending in English" (Kubozono 1990, 1). He examined the "possible switch point at which two source words are each split and consequently combined" as being a consequence of phonological constraints on blending in English (Kubozono 1990, 5). These constraints are phonotactic and phonemic. The former constraint concerns ruling out forms with a phonemic shape that is identical to either of the source words and the latter concerns the phonological length of blends. The focus of this overview is only on the "switch point" (Kubozono 1990, 5).

From his corpus of error-blends and conscious blends, Kubozono (1990) identifies three major cut-off points in source words. Following a syllable structure of "onset-peak-coda", the phonological constraint prohibited cut-off points within a syllable constituent, where the cut resulted in a split of syllable constituents; namely, a split within an onset or a coda (Kubozono 1990, 6). This constraint implies that "the blended items must switch in the same syllable position such that if one word is split in a given syllable position—between the onset and the peak, for example—the other word is split in the same position" (Kubozono 1990, 6). This indicates that the cut-off point occurs either between the onset and nucleus or between the nucleus and coda of one syllable. This tendency applies to blends formed from monosyllabic source words. Added to these two cut-off points was a third possible cut-off point with blends formed from polysyllabic source words, where the cut-off point occurred at syllable boundaries (Kubozono 1990, 7).

Moreover, Kubozono (1990, 14) found that, with polysyllabic source words, when the cut-off point occurred in one syllable of the first source word, the second source word has the cut-off point usually occurring in the corresponding syllable. For instance, the onset from the first source word was to be resyllabified with the rime (nucleus and coda) of the corresponding syllable from the second source word so that to maintain the length rule, which states that the number of syllables of a blend should be identical to that of one of the source words, in most cases the second (Kubozono 1990, 12).

To summarise this overview, Kubozono's (1990) findings also support the tendency for English blends to have their source words cut at syllable boundaries or between syllabic constituents and then mostly between the onset and nucleus, in which case the rime (nucleus and coda) from the second source word is kept intact.

In another study of cut-off points in source words, Kelly (1998) stated that "breakpoints" in blends do not fall randomly but rather cluster at major phonological joints. Kelly (1998, 584) used the term “breakpoints” to describe split points in blends and cut-off points in source words. From an examination of split points, it was found that they “fall primarily at major phonological joints, such as syllable, onset, and rime boundaries” (Kelly 1998, 585-587). Split points in different blends vary based on where the cut-off point occurs in the source words. For instance, in the blend *smog*, the cut-off point occurs after the onset of *smoke* and before the rime of *fog*, whereas in the blend *boost* it occurs after the nucleus of *boom* and before the coda of *hoist*. Nevertheless, Kelly (1998, 585-587) states that “certain breakpoints might be [favored] because they correspond with more natural phonological boundaries”, especially those between the onset and rime (consisting of nucleus and coda).

Kelly (1998) examined this tendency in his corpus of 165 intentional English blends, although, unfortunately, he did not give examples to show these cut-off points. He found that, firstly, the majority of cut-off points occur at word or syllable boundaries. However, when the cut-off point occurs within a syllable, the blends favoured preserving the rimes (nucleus and coda) over bodies (onset and nucleus), where an onset from the first source word is aligned with a rime from the second source word rather than aligning a body (onset and nucleus) from the first source word and a coda from the second source word. Moreover, the integrity of consonant clusters was maintained, with the cut-off point generally occurring after (or before) the consonant cluster rather than within it. Such cases of blends reflect one cut-off point in either or both source words, which leads to the sequential joining of the contributed fracto-lexemes without having shared parts.

A study by Bertinetto (2001) also examined cut-off points in source words. In comparing the structure of blends in English, German, French and Italian, Bertinetto (2001, 63) proposed an analysis of blends based on phonemic shape, though in his examples of blends he described the graphemic and not the phonemic shape. The focus in this overview is only on the analysis of English blends in terms of cut-off points in source words. Bertinetto’s (2001, 63) corpus consisted of 250 English blends which he collected from Bryant (1974), Algeo (1977), and Lehrer (1996).

Bertinetto (2001, 68-9) found three cut-off preferences: the first was for the cut-off point to occur at a syllable boundary, the second between the onset and rime (nucleus and coda) and the third between the body (onset and nucleus) and coda. Equally interesting in Bertinetto’s results were the types of recombination found where the fracto-lexemes combined to form the blend.

The process of recombination may either preserve or change the structure of the blend. In the former, the two syllabic components coincide with the components in the source words, whereas in the latter the juxtaposition of components changes the syllabic structure of the blend relative to the structure of one or both of the source words (Bertinetto 2001, 66). An example of the first case is the blend *al.pha.me.tic* < ***al.pha.***|*bet* and *a.rith.*|***me.tic***, where the structure of the syllables in the blend preserves their original structure in the source words, while in the blend *chat.ire* < ***chat*** and *sat.*|***ire*** the syllabic structure of the blend differs from the structure of the syllables in the first source word, though, of course, the first source word has only one syllable (Bertinetto 2001, 67).

While considering these three cut-off preferences, Bertinetto (2001, 67) identified four recombination patterns based on the nature of the split points in the blends, where the fracto-lexeme from the first source word joins with the fracto-lexeme from the second source word to form the blend. The first pattern involves cases of blends with no overlap, where the combination occurs at the only split point available in the source word, such as in *chortle* < ***ch***|*uckle* and *sn*|***ortle***.[13] The other three patterns involve cases of blends with overlapping where the combination may occur either before, after, or both before and after the overlap.[14] This is the case with the blends *blunge* < ***bl***|*end* and *pl*|***unge*** (after the overlap), *plodge* < ***plo***|***d*** and *tru*|***dge*** (before the overlap), and *californicate* < ***Californi***|*a* and ***forni***|***cate*** (before and after the overlap).

To sum up Bertinetto's (2001) analysis of cut-off points in source words of English blends, it can be stated that it is generally the case that the cut-off point occurs between syllabic constituents or at syllabic boundaries. In most cases, this maintains the syllabic structure of the blend, with or without overlapping elements of fracto-lexemes.

The findings of the research on blending in English outlined above suggest that there is a tendency for the cut-off points in source words to occur at syllabic joints, preferably between the onset and nucleus, or at a syllable boundary or word boundaries, with few cases between the nucleus and coda.

Identifying where the cut-off points are in the source words makes it easy to see which parts of the source words are contributed to the blend. Plag (2003, 123) suggests that it is generally the first part of the first source word and the last part of the second source word that are joined to form the blend, following the pattern AB+CD=AD for the analysis of blends. Other patterns of joining the parts of source words form a minority, at 4-6%, of all blends as stated by Kubozono (1990, 4).

Beliaeva (2014a, 34-5) proposed five structural types of blends based on "the parts of the source words that enter into blends", which she termed "fracto-lexemes". Her data consisted of 487 neologisms, the majority of which were blends with two constituents. The data were compiled from several online sources of neologisms and occasionalisms. They were *Word Spy*, *The Urban Dictionary*, *The Rice University Neologisms Database* created by Suzanne Kemmer, *Language Monitor*, *The McMillan Dictionary*, *The Word of the Year* collections from Merriam Webster, and newspapers and magazines (Beliaeva 2014a, 31).

Beliaeva (2014a, 34) found that the structural pattern of AB+CD=AD proposed by Plag (2003, 123) does not cover all the types of blends in her data. According to the different parts of the source words that were preserved in the blends, Beliaeva (2014a, 35) categorised the structural types of blends in her data, from the most frequent to the least frequent, as follows:

i. AD (332 blends, 68.2%) where the beginning of SW1 is joined with the end of SW2, as in *chofa* < *chair* and *sofa*, and including cases in which SW1 is fully present in the blend, and *clickmas* < *click* and *Christmas*;

ii. AW (83 blends, 17.0%) where the beginning of SW1 is joined with the entirety of SW2, as in *fabulash* < *fabulous* and *lash*;

iii. WW (29 blends, 6.0%) where SW1 is joined with SW2 with an overlap, as in *flabdomen* < *flab* and *abdomen*; *stoption* < *stop* and *option*;

iv. AC (23 blends, 4.7%) where the beginning of SW1 joins with the beginning of SW2, as in *hydrail* < *hydrogen* and *railway*, and including cases in which SW1 is fully present, and *Obamacon* < *Obama* and *conservative*; and

v. Central replacement (20 blends, 4.1%) where SW2 is inserted in the middle of SW1, as in *parahawking* < *paragliding* and *hawk.*

The results in this list show that it is generally the case that the initial fracto-lexeme from the first source word joins with the final fracto-lexeme from the second source word, which matches the general tendency identified in the literature regarding this feature.

There is a relationship between the cut-off points in the source words and the contributed amount from the source words to the blend. When the cut-off point has been determined, it should then be easy to measure the amount retained from each source word in the blend. The following section gives an overview of several studies that have focused on measuring the contributions from source words to blends.

3.5.2. Proportional Contributions from Source Words to Blends

When it comes to how much material is retained from the source words in a blend, two factors appear to interact: the semantics of the source words and their length. Kaunisto ((2000); (2013)) hypothesised that when forming a blend there is a tendency to minimise the loss of meaning by favouring the shorter source word in the resulting blend. Accordingly, the greater proportion would come from the shorter source word. In his research, Kaunisto (2013, 2) uses the term "proportional representation of source words in blends". In this book, the term "proportional contributions from source words to blends" is the one that is used and examined.

This hypothesis about the proportional contribution of the shorter source word was supported by the findings of Kaunisto (2000); (2013) after measuring the proportions taken from the source words of 102 English blends. The data were compiled from the following sources: Algeo (1977), Cannon (1987), Štekauer (1991), Kelly (1998), and the CD-ROM editions of *The Oxford English Dictionary*, 2nd edition (1992), *Collins Electronic English Dictionary and Thesaurus*, 3rd edition (1995), *The Random House Compact Unabridged Dictionary*, 2nd edition (1996), and *Merriam-Webster's Collegiate Dictionary and Thesaurus*, 10th edition (1999).

Kaunisto's (2013) detailed testing of his hypothesis is based on his previous brief outline on measuring the proportions of source words in blends (Kaunisto 2000). Kaunisto (2013) measured the graphemic contribution from the source words to the blends but he also referred to the fact that it is worth investigating the phonemic contribution, especially when the length of the source words and the form of language (written or spoken) in which blends were formed are taken into consideration. The length of the source words could be measured in terms of the number of graphemes or phonemes, depending on whether the blend originated in written language or spoken language (Kaunisto 2013, 4). Although Kaunisto (2013) mentions this point about written-spoken formation as a factor that potentially could be considered, it is not realistic to expect to be able to pinpoint the first occurrence of a blend, so in practice, this written-spoken origin is always ignored also by Kaunisto himself who counted graphemic contribution, probably because that was easiest.

Kaunisto (2013, 4) proposes an "axiom" stating that the proportion retained from the shorter source word is greater than the proportion retained from the longer source word. More precisely, for two words, *X* and *Y*, to form a blend, *Z*, where *X* is represented in *Z* by *A* and *Y* is represented in *Z* by *B* (so that the blend contains fracto-lexeme *A* from source word *X* and fracto-lexeme *B* from source word *Y*), Kaunisto (2013,

4) presents his hypothesis based on this axiom as follows:

> "if x > y, then a:x ≤ b:y, where
> x = the number of letters/phonemes in X
> y = the number of letters/phonemes in Y
> a = the number of letters/phonemes in A
> b = the number of letters/phonemes in B".

To illustrate, Kaunisto uses the blends *brunch* and *tangemon* as examples. For *brunch* the calculation in terms of letters will be "X = *breakfast*, Y = *lunch*; A = *br*, B = *unch*; x (*breakfast*) = 9, y (*lunch*) = 5, a = 2, b = 4", where 22% of *breakfast* and 80% of *lunch* are present in *brunch*, meaning that the proportion coming from *lunch*, the shorter source word, is greater than the proportion coming from *breakfast*, the longer source word. When applying the formula to *tangemon*, it also holds up, with 56% coming from *tangerine*, the longer source word, and 80% coming from *lemon*, the shorter source word (Kaunisto 2013, 4). In the case of such blends, the points where the source words were cut did not involve shared elements.

Kaunisto (2013, 4) also pointed out that there are cases of blends that have shared elements, which are mostly joined in a "discontinuous fashion" or non-sequentially. Such cases of blends were first referred to by Bergström (1906, 23) as having source words "crossing each other". These are cases where some elements in the blend are found in both source words, and these are therefore said to be jointly contributed from both source words (Kaunisto 2013, 4). The majority of these blends typically have overlapping elements, as mentioned above (Cannon 1986, 742). Examples of these blends are *stagflation* < ***stag****n****ation*** and *in****flation***, which has the final part (-*ation*) found in both source words; *fantabulous* < ***fanta****stic* and ***fabulous***, which has the first part (*fa*-) found in both source words; and *chortle* < ***ch****uck****le*** and *sn****ort***, which has the last part (-*ort*) from SW2 inserted within SW1 replacing the middle part of that word (-*uck*-).

This description of the structure of such blends may be more attractive than claiming, for instance, that *stagnation* in the blend *stagflation* is represented only and exclusively by the fracto-lexeme *stag*-. However, cases of non-sequential fusion represent a small minority among existing blend words (Bergström 1906, 46); (Cannon 1987, 154).

Regarding the question of whether to consider the number of letters or phonemes when measuring the proportional contributions from source words to blends, Kaunisto (2013, 6) states that "the results of the words examined would not look drastically different if the analysis had focused on the numbers of phonemes instead of letters". The calculation would have changed in only a few cases, especially with those that "illustrate the deliberately playful character of the words themselves". Kaunisto (2013, 6) gives the blend *blaxploitation* < *black(s)* and *exploitation* as an example of the case of blends where both words are phonemically preserved in their entirety, but this is not reflecting such cases, because the first vowel of *exploitation* is not represented in the blend. An example that better describes such cases is the blend *sexploitation* < ***sex*** and ***exploitation***, where both source words are graphemically as well as phonemically represented in full in the blend. Nevertheless, Kaunisto (2013, 6) noted that, for this case, "a strict orthographical analysis would indicate that the shorter form is represented by fewer elements in the blend", meaning that his axiom did not hold for this blend.

Finally, Kaunisto (2013, 6) also found that the ordering of the source words, in terms of which comes first and which second, did not play an important role in determining the greater proportional representation of the source words in the blend. There was no great difference as to whether it was the first source word or the second that had the greater proportional representation. Out of 102 blends, 33 had the first source word with greater proportional representation and 50 had the second (Kaunisto 2013, 6).

Following Kaunisto's (2000) hypothesis as related to the proportions contributed from source words to blends, Gries (2004b) analysed the orthographic and phonemic structure of blends in English. In his research, Gries (2004b) investigated two features of blends in English: "the amount of information contributed by the source words to the blend" and "the similarity of the source words to the blend". It is the former feature that concerns this book here. Gries (2004b, 639) found that "the amount contributed by the source words is determined by the degree of recognisability of the source words", which he later validated by comparing intentional blends with speech-error blends.

Kaunisto's (2000) method of measuring the contribution from source words to blends is also used in Gries (2004b). In his analysis, Gries (2004b) wanted to overcome some drawbacks that he identified in Kaunisto's (2000) analysis. Gries (2004b) examined cases of blends that include overlapping elements and not only cases with clear split points. He (2004b, 650) also examined cases of blends of source words that contribute different parts of themselves and not only cases where the first source word contributes its beginning and the second source word contributes its end.

Gries (2004b) thus revised Kaunisto's (2000) analysis to include cases of overlap. Gries (2004b, 651-2) added two methods of analysis for cases of overlap. One deals with cases of overlap that takes place at one split point, and another deals with cases of overlap that takes place at multiple points, as in the blend *fantabulous* < *fantastic* and *fabulous*.

Analysis 1 in Figure 3.1 illustrates a blend that is interpreted as having overlap taking place at one split point and Analysis 2 in Figure 3.2 shows a blend interpreted as having overlaps taking place at multiple split points. The blend *fantabulous* is used to represent these two cases since this blend can be analysed using either method.

Figure 3.1: Analysis 1 of the blend *fantabulous*

Source word 1: *fantastic*	s t i c	⇒ $^4/_9$ not in the blend = 44.4%
	f a n t a	⇒ $^5/_9$ in the blend = 55.6%
Source word 2: *fabulous*	**a b u l o u s**	⇒ $^7/_8$ in the blend = 87.5%
	f ↑	⇒ $^1/_8$ not in the blend =12.5%
a split point with overlap		

Figure 3.2: Analysis 2 of the blend *fantabulous*

Source word 1: *fantastic*	s t i c	⇒ $^4/_9$ not in the blend = 44.4%
	f a n t a	⇒ $^5/_9$ in the blend = 55.6%
Source word 2: *fabulous*	**f a b u l o u s**	⇒ $^8/_8$ in the blend = 100%
	↑ ↑	⇒ $^0/_8$ not in the blend = 0%
an overlap a split point with overlap		

Analysis 1 in Figure 3.1 shows that when analysing the blend *fantabulous* as having one point of overlap, the greater proportion (87.5%) comes from the graphemically shorter source word *fabulous*. Analysis 2 in Figure 3.2 shows that when analysing the blend *fantabulous* as having multiple points of overlap, again the greater proportion (100%, namely the full source word) comes from the graphemically shorter source word *fabulous*.

These two figures show that, while using either method of analysis, Kaunistos blend-graphemic-length hypothesis is borne out. When comparing the proportions of contribution from the two source words, both methods show that the greater proportional contribution comes from the graphemically shorter source word.

Nevertheless, Gries (2004b, 651) also cited cases where the two methods of analysis give different results, as shown for the blend *chunnel* in Analysis 1 in Figure 3.3 and Analysis 2 in Figure 3.4.

Figure 3.3: Analysis 1 of the blend *chunnel*

Source word 1: *channel*	a n n e l	⇒ $^{5}/_{7}$ not in the blend = 71.4%
	c h	⇒ $^{2}/_{7}$ in the blend = 28.6%
Source word 2: *tunnel*	**u n n e l**	⇒ $^{5}/_{6}$ in the blend = 83.3%
	t	⇒ $^{1}/_{6}$ not in the blend =16.7%
	split point	

Figure 3.4: Analysis 2 of the blend *chunnel*

Source word 1: *channel*	a	⇒ $^{1}/_{7}$ not in the blend = 14.3%
	c h n n e l	⇒ $^{6}/_{7}$ in the blend = 85.7%
Source word 2: *tunnel*	**u n n e l**	⇒ $^{5}/_{6}$ in the blend = 83.3%
	t	⇒ $^{1}/_{6}$ not in the blend =16.7%
	split point; four points of overlap	

Analysis 1 in Figure 3.3 supports Kaunisto's hypothesis for cases of blends with overlap, where the greater proportional contribution comes from the graphemically shorter source word; but, according to Analysis 2 in Figure 3.4, the word *chunnel* contradicts the hypothesis since the greater proportional contribution comes from the graphemically longer source word, though, of course, in this case, they are phonemically the same length.

Based on these two methods of analysis, as well as the possible drawbacks that they highlight in Kaunisto's (2000) hypothesis, Gries (2004b) proposed his approach where he analysed blends in terms of the interaction between these two factors; namely, the length of source words and the proportion of their contribution to the blend.

Gries (2004b) implemented this analysis on his data of 585 blends compiled from Adams (1973), Akmajian, Demers, Farmer, and Harnish (1995 [1984]), Algeo (1977), Bauer (1983), Bryant (1974), Cannon (1986), Irwin (1939), Kaunisto (2000), Kelly (1998), Kemmer (2003), Murray (1995), Pound (1914), Štekauer (1991), the *Oxford English Dictionary* on CD-ROM (version 1.15) (search word: blend), the

Encyclopedia Britannica 2000 (CD-version; s. v. blend), the internet pages of the course Linguistics/English 215, *Words in English: Structure, History and Use*, taught by Suzanne Kemmer at Rice University (www.owlnet.rice.edu/~ling215), and a summary on the *LinguistList* (issue 11.1378) by Suzanne Kemmer.

Gries (2004b, 653-4) found that there was a significant interaction between length and contribution and that the results strongly supported Kaunisto's (2000) hypothesis. The results reflected two preferences, which also support the general tendency for the proportional contributions from source words to blends. The first preference shows that when the first source word is longer, then the greater proportional contribution comes from the second source word; and when the second source word is longer, then the greater proportional contribution comes from the first source word. In other words, the greater contribution tends to come from the shorter source word. The second preference shows that when both source words have the same length, they strongly tend to contribute equal proportions to the blend (Gries 2004b, 654).

3.5.3. Stress Patterns of Blends

It is generally the case in blending that the stressed syllable of the blend corresponds to that of one of the source words (Bergström 1906, 46); (Bat-El and Cohen 2012, 193). Two factors appear to play a role in determining the stress patterns of the blends: the size and the position of the source words. It is usually the longer source word that "dictates" the primary stress of the blend (Cannon 1986, 746), and in most English blends, the longer source word is the second source word (Gries 2004a, 426). This indicates that the size and the position of the source words interact in assigning the stress patterns of the blends.

Bat-El and Cohen (2012) presented a comprehensive analysis of the stress system of English blends, in which they investigated the role of these two factors in assigning stress within a constraint-based Optimality Theoretic approach. The following discussion outlines their approach, analysis and findings.

Bat-El and Cohen (2012) considered two factors: the size of the source words, measured in terms of the number of syllables, and the position of the stress in the source words. They found that there was no straightforward relationship of priority between these two factors, yet Bat-El and Cohen (2012, 193) did demonstrate their interaction. They found that priority was given to the stress of the longer source word and/or the stress of the rightmost source word (Bat-El and Cohen 2012, 193). This interaction was maintained when these factors were combined in a constraint-based Optimality Theoretic approach whereby the analysis of blends resulted in an intra-word variation (Bat-El and Cohen 2012, 193).

Their analysis was based on the two minimally distinctive grammars of blend stress in English, which are:

- FAITHMETRICALSTRUCTURE (henceforth, FAITHMS) >> FAITHHEADSW2 >> FAITHHEADSW1, which relates to the size of the source words, and
- FAITHHEADSW2 >> FAITHMS >> FAITHHEADSW1, which relates to the position of the source word in the word pair.[15]

Their dataset was based on a very narrow definition of what constitutes a blend, where they excluded the following cases:

a) Blends of more than two source words, e.g. *compúshity* < *compúlsion* + *push* + *necéssity*;
b) Blends of the forms AW, WC or WW, e.g. *skinóe* < *ski* and *canóe*;
c) Blends of the form AC e.g. *sítcom* < *situátion* and *cómedy*;
d) Blends formed with degemination, e.g. *hótray* < *hot* and *tray;*
e) Blends including combining forms, e.g. *workohólic* < *work* and *(o)hólic*; and
f) Blends with a source word that is an initial, e.g. *émail* < *electrónic* and *mail* (Bat-El and Cohen 2012, 193-4).

Although no reference was made to the amount of data they included in their analysis, Bat-El and Cohen (2012, 194) mentioned the sources from which it was compiled, which were Adams (1973), Bryant (1974), Algeo (1977), Gries (2004a), and Buzzwack.com.

Bat-El and Cohen (2012, 195) found that, generally, when only one syllable is retained in the blend which originally carries stress in one of the source words, stress resides on this syllable in the blend, as in *dynétic* < *dynámic* and *magnétic*. Nevertheless, their data included cases of blends that do not follow this pattern, and they investigated such cases based on the following conditions:

1) Both stressed syllables from the source words are retained, as in *fertigátion* < *fértilizer* and *irrigátion*, which has its stress from the stressed syllable coming from the second source word;
2) Neither stressed syllable from the source words is retained, as in *símulcast* < *simultáneous* and *bróadcast* which has the same stress pattern as that of the second source word;

3) One of the source words is monosyllabic, for example, [/*bískwik/* < /*bískit/* and /*kwik/*] in which case the blend receives its stress from the retained stressed syllable of the polysyllabic source word.

In English, "stress is determined by faithfulness constraints" but when faithfulness constraints are not at work, the position of stress in a word is determined by the default stress of the language (Bat-El and Cohen 2012, 195). English blends are no exception to this general rule.

Based on the "position-based view", the stressed syllable in the blend corresponds to that of the second source word regardless of its size, as in the blends *fertigátion* < *fértilizer* and *irrigátion* (SW1=SW2), *anchorlástic* < *ánchor* and *elástic* (SW1<SW2), and *aggranóying* < *ággravating* and *annóying* (SW1>SW2) (Bat-El and Cohen 2012, 195-6). Meanwhile, based on the "size-based view", the stressed syllable in the blend corresponds to that in the longer source word regardless of its position in the blend. In such cases, the blend and the longer source word have an equal size (in terms of numbers of syllables), as in *investopédia* < *invésting* and *encyclopédia* (SW1<SW2), and *hándkerchoo* < *hándkerchief* and *kerchóo* (SW1>SW2) (Bat-El and Cohen 2012, 196).

The first view does not apply when both source words have the same size, while the second does not apply when the size of the blend is different from that of either one of the source words (Bat-El and Cohen 2012, 196). Accordingly, Bat-El and Cohen (2012, 196) adopted a combined approach including both size and position factors to analyse such cases of blends.

To examine blends in the light of this view, Bat-El and Cohen (2012, 197) distinguished three types of blends, which are:

1) Blends whose size (expressed by the number of syllables) is identical to that of both source words ($Bl^{\sigma}=SW1^{\sigma}=SW2^{\sigma}$);[16]
2) Blends whose size is identical to that of one of the source words ($Bl^{\sigma}=SW1^{\sigma}/Bl^{\sigma}=SW2^{\sigma}$); and
3) Blends whose size differs from that of both source words ($Bl^{\sigma}\neq SW1^{\sigma}$, $Bl^{\sigma}\neq SW2^{\sigma}$, and $SW1^{\sigma}\neq SW2^{\sigma}$).

From their analysis, it is apparent that, in cases of blends of source words that have identical numbers of syllables, it is not the size but rather the position of the source word that plays a role in assigning stress in the blend; whereas, in the cases of blends with source words of different sizes, it is the size of the source words that is decisive in assigning the stress in the blend.

In their analysis, Bat-El and Cohen (2012, 197) identified two relevant constraints: FAITHHEAD and FAITHMS, which require input-output identity to maintain the relationship between the properties of the blend and those of its source words. These constraints are outlined below.

Since the stressed syllable is the head of the word, the FAITHHEAD constraint for a blend must have two members: FAITHHEADSW1 and FAITHHEADSW2 (Bat-El and Cohen 2012, 198). In 9 out of 10 cases of blends that have a size identical to that of both source words, and according to the FAITHHEAD constraint, it is the position that wins. This finding is based on the constraint ranking of FATHHEADSW2 >> FAITHHEADSW1, which gives priority to the stressed syllable of the second source word. Examples are the blends *motél* < *mótor* and *hotél*, and *rockóon* < *rócket* and *ballóon* (Bat-El and Cohen 2012, 198). Only one exception out of 10 blends had the same stressed syllable as that of the first source word, which is *squádrol* < *squádcar* and *patról,* (Bat-El and Cohen 2012, 199).

In 28 out of 29 cases from their data of blends that have a size identical to that of one of the source words, and according to the FAITHMS constraint, it is the size that wins where reference is made to the stress pattern rather than to the stressed syllable. This faithfulness constraint enforces the preservation of the metrical structure of the source words in the blend where it should be identical to that of either source word (Bat-El and Cohen 2012, 199). Examples are the blends *digitéria* < *dígital* and *cafetéria*, where the size of the blend is identical to that of the source word *cafeteria* and hence has the same stress pattern; and *ballúte* < *ballóon* and *párachute*, where the blend has the same stress pattern as the source word *balloon*, both being identical in terms of the numbers of syllables (Bat-El and Cohen 2012, 199). For such cases, the ranking of the constraints is FAITHMS, FAITHHEADSW2>>FAITHHEADSW1, where the first two do not compete (Bat-El and Cohen 2012, 200). In such cases, the prosodic pattern of one source word is preserved, while the segments of the other source word are superimposed onto it.

The only exception (1 out of 29 blends) from their data was the blend *cámcorder* < *cámera* and *recórder* which has the same stress pattern as that of the first source word but not the same number of syllables (Bat-El and Cohen 2012, 200).

There are cases of blends in their data where size (FAITHMS) and position (FAITHHEADSW2) compete because size calls for the first source word, and position calls for the second source word; these are blends that have the same size as that of the first source word (Bat-El and Cohen 2012, 201).

In some cases, size (FAITHMS) wins, as in the blend *húrricoon* < *húrricane* and *ballóon*, where the stress pattern of the blend is identical to that of the source word that has the same number of syllables (namely, the first source word). In other cases, position (FAITHHEADSW2) wins, as in the blend *galvannéal* < *gálvanize* and *annéal*, where the stressed syllable of the second source word is preserved in the blend (Bat-El and Cohen 2012, 201-2).

In 31 out of 35 cases of blends where the size of the blend differs from that of both source words, and according to the relevant Optimality Theoretic faithfulness constraints of FAITHHEAD and FAITHMS, it is the position that wins, which is the default factor for blend stress assignment (in this case, FAITHHEADSW2). Examples are the blends *anchorlástic* < *ánchor* and *elástic*, and *anecdótage* < *ánecdote* and *dótage*, which both have the same stressed syllable as that of their second source word (Bat-El and Cohen 2012, 203).

Four exceptions out of 35 blends were *kíddypliance* < *kíddy* and *applíance*, *lórrytel* < *lórry* and *hotél*, *hóllywooer* < *hóllywood* and *wóoer*, and *lúbricushion* < *lúbricant* and *cúshion*, where the stressed syllable in the blend is identical to that of the first source word (Bat-El and Cohen 2012, 204).

Cases of blends with one monosyllabic source word did not behave differently from those with two polysyllabic source words. Nevertheless, Bat-El and Cohen (2012, 204) distinguished two sets of blends with one monosyllabic source word: those whose size is identical to that of the polysyllabic source word, and those whose size is different from that of the polysyllabic source word and, based on the factor of position, they distinguished between blends whose monosyllabic source word is the first source word and those whose monosyllabic source word is the second source word (Bat-El and Cohen 2012, 204).

In 126 out of 127 cases of blends whose size is identical to that of the polysyllabic source word, if the stressed syllable of this source word is retained it will be stressed in the blend, as in *magnésticks* < *magnétic* and *sticks*, and *singspirátion* < *sing* and *inspirátion* (Bat-El and Cohen 2012, 204). However, if the stressed syllable of the polysyllabic source word is truncated, the stress will fall on the monosyllabic source word retained in the blend, as in the blend *blógives* < *blog* and *árchives*, where the stressed syllable in *archives* is truncated which means that *blog* in the blend carries the stress (Bat-El and Cohen 2012, 204-5). This also shows that, in these cases, the stress pattern of the blend is the same as that of the polysyllabic source word, which means that the FAITHMS constraint is at work here (Bat-El and Cohen 2012, 205). The only exception out of 127 blends from the data is *fláretrol* < *flare* and *contról*, where the stress in the blend is on the first source word, even though the stressed syllable from the source word of identical size is not truncated (Bat-El and Cohen 2012, 205).

In cases of blends whose size differs from that of the polysyllabic source word, it is the position of the monosyllabic source word that determines the stress of the blend (Bat-El and Cohen 2012, 205). When the stressed syllable of the polysyllabic source word is retained and the monosyllabic source word is the first source word, the stress of the blend falls on that syllable, as in *densýlon* < *dense* and *nýlon*, and *momprenéur* < *mom* and *entreprenéur*; but when the stressed syllable of the polysyllabic source word is truncated and the monosyllabic source word is the first source word, stress falls on the syllable of the monosyllabic source word, as in *fánzine* < *fan* and *mágazine* (Bat-El and Cohen 2012, 206). In these cases, neither the FAITHHEAD nor FAITHMS constraints are at work due to the mismatch in the number of syllables in the blend and its source words (Bat-El and Cohen 2012, 206).

When both source words are polysyllabic, the generalisation arrived at when the blend's size differs from that of both source words is that the stress of the blend corresponds to that of the second source word (with the position factor being active). Bat-El and Cohen (2012, 207) found that this generalisation holds when one of the source words is monosyllabic and it is the first source word, as in the blend *densylon* mentioned above, rather than the second, as in the blend *cítrisun* < *cítric* and *sun*, where the stress of the blend corresponds to that of the first source word (Bat-El and Cohen 2012, 207).

In such cases, the FAITHMS constraint is violated and the FAITHHEADSW2 constraint is not satisfied since the second source word is monosyllabic (namely, with no lexical stress, and hence no head). This means that the FAITHHEADSW1 constraint operates, which is the lower-ranked FAITHHEAD constraint.

Faithfulness constraints are not at work in the stress assignment in the blend in two cases: when the stressed syllables of both source words are truncated, as in the blend *eléctret* < *electrícity* and *mágnet*, and when one of the source words is monosyllabic and the stressed syllable of the polysyllabic source word is truncated, as in the blend *cóntrail* < *condensátion* and *trail*. In these cases, the default stress of English is assigned to the blend, which is on the heavy penultimate syllable (Bat-El and Cohen 2012, 208).

Table 3.1 below summarises the results arrived at by Bat-El and Cohen (2012, 209) for stress patterns of blends of source words that are polysyllabic; again, the annotation is adjusted to match the conventions adopted in this book.

Table 3.1: Stress assignment in blends with polysyllabic source words

$SW1^{\sigma}=SW2^{\sigma}$	$Bl^{\sigma}=SW^{\sigma}$*	$Bl^{stress}=SW2^{stress}$	position & size
$SW1^{\sigma}\neq SW2^{\sigma}$	$Bl^{\sigma}=SW2^{\sigma}$	$Bl^{stress}=SW2^{stress}$	position & size
SW size not relevant	$Bl^{\sigma}\neq SW^{\sigma}$	$Bl^{stress}=SW2^{stress}$	Position
$SW1^{\sigma}=SW2^{\sigma}$	$Bl^{\sigma}=SW1^{\sigma}$	$Bl^{stress}=SW1/SW2^{stress}$	position or size

*SW^{σ}=both source words have the same number of syllables

To conclude, the formal account of the generalisations that Bat-El and Cohen (2012, 209) proposed adheres to the hierarchy of three Optimality Theoretic faithfulness constraints, which are FAITHMS, FAITHHEADSW2 >>FAITHHEADSW1, where the non-ranking of the first two accounts for the variation in stress assignment in blends.

Nevertheless, blends with monosyllabic source words may diverge from these generalisations. Regardless of the position of the monosyllabic source word, if the stressed syllable of the polysyllabic source word is retained, it serves as the stressed syllable of the blend; otherwise, the blend is assigned the default stress of the language (Bat-El and Cohen 2012, 209).

When it comes to the stress patterns, the data compiled for this book are examined in the light of these tendencies that Bat-El and Cohen (2012) have identified. Comparing their dataset to the one examined for this book, it appears that criterion (a) above, matches the basic criterion for data limitation adopted in this book, which is to include blends formed by joining only two source words. Cases of blends in the dataset of this book that are similar to criteria (b)-(d) above were not excluded from the data—the data include cases of blends formed by all fusion possibilities. As for cases of blends in (e) and (f) above, they do not apply to the dataset since the source words included neither combining forms nor initials.

3.6. Summary of Blend-Formation Tendencies in English

The tendencies for blend formation that have been identified in the literature on blending in English and based on the three main features discussed in section 3.5 are summarised below.

The tendencies associated with the cut-off point in the source words relate to their prosodic structure. It is generally the case that the cut-off point tends to occur at phonological boundaries, either between syllabic constituents or at syllabic boundaries. The preferences for cut-off points in the source words, arranged from the most to the least frequent, occur at the following points:

a. between syllabic constituents, usually between the onset and nucleus, as in *brunch* < *br|eakfast* and *l|unch*; or
b. at a syllable boundary, as in *alphametic* < *al.pha.|bet* and *a.rith.|me.tic*; or
c. at word boundaries, as in *morphosyntax* < *morphology and syntax*, where the second source word exists in its entirety in the blend; or
d. between the nucleus and coda, as in *plodge* < *plo|d* and *tru|dge*, where both source words have the cut-off point between the nucleus and coda.

The tendencies associated with the proportional contributions from source words to blends relate to the recognisability of the source words. It is generally the case that blends minimise the loss of meaning by favouring the shorter source word. Accordingly, the greater proportional contribution comes from the shorter source word. This strong preference for the proportional contribution indicates that when the first source word is longer, then the greater proportional contribution comes from the second source word, and when the second source word is longer, then the greater proportional contribution comes from the first source word. Another preference indicates that when both source words have the same length, there is a strong tendency that they will contribute equal proportions to the blend (Gries 2004b, 654).

Concerning the tendencies associated with stress assignment in blends, it is generally the case that the stressed syllable of the blend corresponds to that of one of the source words (Bergström 1906, 46), (Bat-El and Cohen 2012, 193). Two factors appear to play a role in determining the stress patterns of blends in English: the size and the position of the source words. It is usually the longer source word that “dictates” the primary stress of the blend (Cannon 1986, 746), and in most English blends, the longer source word is the second source word (Gries 2004a, 426). This indicates that the size and the position of the source words interact in assigning the stress patterns of the blends.

4. BLENDING IN ARABIC

4.1. Introduction

This chapter discusses the classification of blends in Arabic based on a review of the available literature on word formation in Arabic (section 4.2) and the tendencies for forming blends in Classical Arabic focusing on what the traditional Arab grammarians had referred to concerning this linguistic phenomenon (section 4.3). A summary of the literature on blending in Arabic is provided in section 4.4.

4.2. Classification of Arabic Blends

Previous research on Arabic blends has mainly focused on two aspects of blend formation. The first is the nature of the source words from which blends are formed (Al-Maghribi 1908, 21-23). Specific issues falling under this heading are whether the source words are coordinates, *iḍāfah* "genitive" constructs, or sentences, and the question of which of the root graphemes are preserved in the blend and what their order is in the source words (Al-Mūsā 1966, 65-7). The second aspect of blends, which has been investigated, is their parts of speech ((Al-Maghribi 1908, 21-23); (Abi Ḥātim 2006, 154)).

Arabic blends are classified, in traditional literature, into two categories based on the type of the source words from which they are formed. The first category includes blends that are formed from two source words, which are either two coordinate verbs or a genitive construction. Blends that are formed from two verbs usually have the part of speech of an adjective, as is the case for instance with the blends /dˤi.batˤr/ "the strong man" < /dˤa.batˤ/ "regulate" and /dˤa.bar/ "fasten", and /sˤah.sˤa.liq/ meaning in Arabic "an old woman with a vociferous voice" < /sˤa.hal/ "whinny" and /sˤa.laq/ "intense sound" (Al-Khaṭīb 2003, 439-440). Blends that are formed from a genitive construction are said to be usually used as nicknames, as is the case with the blend /ʕab.ʃam(ij)/ < /ʕabd/ and /ʃams/—a nickname "the slave of the sun", and /ʕab.dar/ < /ʕabd/ and /da:r/—a nickname "the slave of the house" (Al-Khaṭīb 2003, 440).

Although Al-Khaṭīb (2003, 440), being one of the traditional grammarians, describes this type of blends as having been formed by joining two letters from the first word with two letters from the second word, he does not seem to add any new aspects of the analysis of Arabic blends that have not already been mentioned in the literature.

The second category includes blends whose source words come from a sentence or an expression (Al-Khaṭīb 2003, 441). These blends are usually formed by joining letters from two or more words from a sentence or an expression to convey the overall meaning of these structures. In such cases, some words in the sentence are not represented in the blend but are pragmatically understood since they refer to someone or something contextually recognised. An example of this type is the blend /ħaj.ʕal(a)/ "came to", which is formed from only two words which are /ħaj.ja/ "come" and /ʕa.la:/ "to", conveying the meaning of the sentence /ʔan.ta ħaj.ja ʕa.la: ʔsˤ.sˤa.la:t, xajr al-ʔa.mal/ "You come to do prayers/good deed". Although many words from the sentence are not represented in the blend, they are still contextually recognised by users where they would normally /ħaj.ʕal/ "come to" prayers. Another example is the blend /ħaw.laq(a)/ meaning someone is saying /la: ħa.wla wa la: qu.wa.ta ʔil.la: bil.la:h/ "There is neither change nor power but from Allāh", where only /ħaw.la/ and /qu.wa.ta/ are represented in the blend and the other words are contextually understood.

Of these two main categories, there is no favoured category in terms of which of them reflects the most prototypical type of blend. The semantics of the blend is parallel to that of the source words joined together. The first category includes coordinative blends that are usually formed from two words of the same part of speech and in this case reflect a paradigmatic relationship. The second category includes genitive constructions or sentences which reflect syntagmatic relationships. Nevertheless, the literature on blending does not address or refer to the role of the semantics of Arabic blends. What scholars focus on is that blend formation is a matter of prosodic patterns: are they following the traditional root-and-pattern structure, or rather a novel one or a borrowed one?

There is another classification of Arabic blends found in the literature. This classification is based on the part of speech of the resulting blend. It classifies blends as verbal, adjectival, nominal or what is called genealogical (in modern terms, a proper name based on a family/ tribe/ clan). An example of verbal blends is the blend /ħaj.ʕal(a)/ meaning someone is saying "come over to do prayers" < /ħaj.ja/ "come" and /ʕa.la:/ "to" , of adjectival blends is the blend /dˤi.batˤr/ "the strong man" < /dˤa.batˤ/ "regulate" (Adj.) and /dˤa.bar/ "fastened" (Adj.), of nominal blends is the blend /nu.mruq/ "a small pillow" < /na.maq/ "embellish" and /raqq/ "soften", or of genealogical/ lineal relationship denoting a family name or reference is the blend /ʕab.dar(ij)/ < /ʕabd/ and /da:r/, a nickname with the meaning "the slave of the house" (Al-Maghribi 1908, 21-23); (Balāsi 2002, 1-3); (Abi Ḥātim 2006, 154).

4.3. Tendencies in Classical Arabic Blend-Formation

No specific tendency in blend formation is clearly identified in any of the studies mentioned above, except for one statement made by Al-Farāhīdi (1988) in which he describes how the few established blends found in Classical Standard Arabic are formed.

As Al-Farāhīdi (1988) describes classical Arabic blends as having tended to be formed by joining the first two root consonants from two different lexemes and mapping them onto one of the established prosodic patterns which are mostly four-consonantal templates, in which case if there is a root ABC and a root DEF, blending takes AB and DE, and then puts them into a template, adding the vowels. For instance, the blend /ʕab.ʃam/ is formed by taking the root graphemes /ʕb/ and /ʃm/ from the roots /ʕbd/ and /ʃms/ of the source words /ʕabd/ and /ʃams/ and put into the template *CaCCaC*, where the root graphemes replace the *C*s in the template in an orderly manner. The slots for the consonants in this template, which appear as in _a_ _a_ will be filled by the root graphemes coming from the source words, hence the resulting blend will be ʕabʃam. This means of forming blends in Arabic was identified based on cases of classical blends formed centuries ago.

The traditional process of blending in Arabic was restricted to this means for bringing new words to the lexicon, whereas the contemporary process includes various methods. A number of these methods resemble those used when forming neologisms in other languages, especially in English, as will become clear in the following chapters.

Two main features relate to the structure of Arabic blends. The first feature relates to the number and position of the graphemes contributed from the source words to the blend. However, it is noted that in cases of roots whose second grapheme is a vowel-grapheme, it is generally the case that this grapheme is skipped so that the following consonant-grapheme is contributed (Al-Farāhīdi 1988, 60).[17] The second feature relates to the prosodic pattern that the resulting blend exhibits, which is mostly *CaCCaC*,[18] whether a nominal or verbal pattern ((Al-Shihābi 1959, 546); (Al-Mūsā 1966, 65-7); (Al-Farāhīdi 1988, 60).

Henceforth, the former feature is referred to as the feature of root contribution (RC in tables) and the latter as the feature of word pattern (WP in tables).

To spell out this tendency, the blends given in section 1.1.2 above are analysed in Table 4.1 below displaying how these two features are maintained. The blends and their source words in this table are given in their stem forms.

Table 4.1: Analysis of typical Arabic blends as to RC-WP features

Blend	SWs	Roots of SWs	RC to blends	WP of blends
/ʕab.ʃam/	/ʕabd/ and /ʃam	ʕbd ʃms	ʕb ʃm	*CaCCaC* (n)
/dʒaʕ.fad/	/dʒa.ʕal/ and /fi.	dʒʕl fdy	dʒʕ fd	*CaCCaC* (v)
/ʕab.dar/	/ʕabd/ and /da:r/	ʕbd dwr	ʕb dr	*CaCCaC* (n)
/dam.ʕaz/	/da:m/ and /ʕizz	dwm ʕzz	dm ʕz	*CaCCaC* (n)

Regarding the number and position of the graphemes contributed to the blend from the source words, it is clear that for the blends /ʕab.ʃam/ عَبْشَم and /dʒaʕ.fad/ جَعْفَد, the first two consecutive root consonants are contributed from both source words to the blends. As to the feature related to word pattern, it is clearly shown that both blends conform to the word pattern *CaCCaC*.

A superficial look at the blend /ʕab.ʃam/ might suggest that it seems to have been formed by joining what could be conceived as the fracto-lexemes /ʕab-/ and /ʃam-/. Due to the similarity between the form of the blend /ʕab.ʃam/ and the combination of the constituting so-called fracto-lexemes, this derivational process might look as if it were a concatenative morphological process. But derivation in Arabic, as has been mentioned earlier, is non-concatenative. The similarity between the form of the blend /ʕab.ʃam/ (together with other blends) and that of the combination of its so-called fracto-lexemes /ʕab-/ and /ʃam-/ is a matter of coincidence, not of regularity in morphological derivation. This observation is supported by the analysis of the blend /dʒaʕ.fad/ meaning someone is saying "may Allāh make me redemption for you", /dʒa.ʕal(a)/ "made" and /fi.da:ʔ/ "redemption".

If it was assumed that the blend /dʒaʕ.fad/ was formed by concatenatively joining the so-called fracto-lexemes /dʒaʕ/- and /fid-/ from the source words /dʒa.ʕal/ and /fi.da:ʔ/ respectively, then the resulting blend would have been */dʒaʕ.fid/, and not /dʒaʕ.fad/. The correct analysis is compatible with what has been pointed out in the traditional literature on Arabic blends: /dʒaʕ.fad/ is an example of the root-and-pattern method with the word pattern *CaCCaC*.

The analysis of the blends /ʕab.dar/ and /dam.ʕaz/, and according to the feature of root contribution, shows that the first source word of the blend /ʕab.dar/ and the second source word of the blend /dam.ʕaz/ each contributes the first two consecutive root consonants to the blend; whereas the second source word of the blend /ʕab.dar/ and the first source word of the blend /dam.ʕaz/ each contributes the first and third root letters, which are consonants, skipping the second root letter, which is a vowel; that is, each contributes their first two root consonants to the blend. As to the feature word pattern, both blends assume the word pattern *CaCCaC*.

According to traditional grammarians, these four blends adhere to this tendency, supporting the claim that specific "root letters" contribute to forming the blend by inserting them into the consonant slots of the word pattern *CaCCaC* ((Ibn Fāris 1979, 271); (Al-Farāhīdi 1988, 60)). However, there are only a few blends in Classical Arabic, so the process seems to have had low productivity when being compared to the same process in English.

Nevertheless, it is found in the literature that there are newly formed blends at the present day, the majority of which are not formed according to this means ((Al-Kawākibi 1964); (Al-Ḥuṣari 1966)). These are mostly blends used in the fields of science and technology. Kifāḥ (2018, 157-8) gives several blends which he labels as contemporary Arabic blends. Examples are /ʃan.ka.bu:t(ijjah)/ network < /ʃa.ba.kah/ "net" and /ʕan.ka.bu:t(ijjah)/ "spider", /ħaj.na.ba:t/ "an animal-plant" < /ħa.ja.wa:n/ "animal" and /na.ba:t/ "plant", and /rak.madʒ(a)/ "surfed" < /ra.kab(a)/ "rode" and /mawdʒ/ "waves". The blend /rak.madʒ/ is formed according to the identified root-and-pattern method for forming blends in Classical Arabic; whereas the other two blends are not. They are instead formed by truncating either or both source words and concatenatively joining the remaining parts.

However, there has been a debate amongst Arab linguists as to whether or not to consider this tendency as one means of forming blends in Arabic. Although the details of this debate are outside the scope of this book, it is still worth mentioning that Ibn Fāris ((1979); (1997); (2001)) and Al-Kirmaly (1938) are amongst the most prominent linguists who claim that blends should be formed following the identified features of Arabic blends; whereas contemporary scientists claim that forming blends in Arabic should not be restricted to the classical means of forming blends, especially with scientific terms used in modern research to cope with the terms used in modern Western research (Adriana 2014, 31).

4.4. Summary of Blend-Formation Literature in Arabic

Overall, it can be said that there has been very little research so far on blending in Arabic, perhaps because in Classical Arabic, there are only a few words that could be examples of this word-formation pattern. Existing work on these classical blends tends to describe them as involving the selection of certain graphemes from the source words and combining these into a new word, which has new vowel graphemes inserted into it.

A more precise characterisation of the process is given by Al-Farāhīdi (1988), who points out that it is the first two consonants of each of the source words that form the input to the blend and that the result after vowel insertion is always *CaCCaC*. In modern terms, it could, therefore, be said that the literature identifies two tendencies (in fact, rules) in classical Arabic blending. Concerning root formation, the first two consonants from each source word go into the blend, which is therefore quadriliteral. Concerning the prosodic template, the word pattern adopted is always *CaCCaC*. It is interesting to see that the classical blends are formed according to the root-and-pattern derivational process of Arabic, which makes them very different from English blends. However, the number of such blends is small, suggesting comparatively low productivity of the process.

5. Results and Discussion

5.1. Introduction

The Arabic blends collected were examined based on the three major features and their related tendencies that have been identified in the literature on English blend formation, as discussed in Chapter 3.

These features are:

1) The location of the cut-off points in the source words, with English having a preference for the cut-off point to occur at a word or at a syllable boundary, or between (but not within) syllabic constituents, and also with a preference for it to occur between the onset and nucleus. An examination of this feature can be used to determine two things: which syllabic constituents are mostly preferred as contributions to the blend and the location in the source word of the contributed fracto-lexeme whether initial, medial or final.

2) The proportion of graphemic and/ or phonemic contribution from the source words to the blend, where there is an interaction between the length of the source words and the amount of their contribution to the blends, with English having a preference for the greater proportion of contribution to come from the shorter source word.

3) Stress patterns in the blends, based on which source word is privileged in determining the stress pattern of the resulting blend, with English having a preference for the blend to have the same stress pattern as that of the second source word and/ or the word that has the same size as the blend.

The discussion in this chapter unfolds as follows: Section 5.2 consists of three subsections: Section 5.2.1 is an analysis of established Arabic blends in the light of the features identified for blend formation in Arabic, section 5.2.2 discusses the features of Arabic blends, and section 5.2.3 analyses established Arabic blends in the light of English blend-formation features and tendencies. Section 5.2.3 examines the tendencies for the three features reviewed in detail in Chapter 3, which are: (1) the location of the cut-off points in source words (section 5.2.3.1), (2) the proportional contributions from source words to blends (section 5.2.3.2), and (3) the stress patterns of blends (section 5.2.3.3). Section 5.2.4 summarises the tendencies identified for forming established Arabic blends.

Section 5.3 is dedicated to the analysis of the collected novel invented blends, focussing again on the three features just mentioned (sections 5.3.1, 5.3.2, and 5.3.3). For each feature, the analysis of the blends from the survey and the experiment are presented separately, followed by a comparison of the results. Finally, section 5.4 discusses some further observations made while analysing the novel invented blends like homophonous responses (section 5.4.1), reversed blends (section 5.4.2), blends with new sort vowels (section 5.4.3), and sandwich blends (section 5.4.4).

5.2. Analysis, Discussion, and Features of Established Arabic Blends

As will be shown in section 5.2.1, the established blends in Classical Arabic appear to adhere to the blending tendencies identified in the traditional grammatical literature on Arabic. That is, they are formed according to the root-and-pattern derivational process of Arabic. The established blends in Modern Arabic are different: they are characterised by the sequential joining of fracto-lexemes, making them more similar to English blends than to classical blends.

5.2.1. Analysis and Discussion of Established Blends

The 99 established blends compiled consist of 61 classical blends and 38 modern blends. These blends were frequently mentioned in the literature on blending in Arabic, especially the resources that have been consulted for this work. These blends and their source words with their transcription and meanings are given in Appendices B and C.

In this section, the established blends of Arabic are examined in terms of the two methods for forming blends in Arabic: that of root-and-pattern, and that of concatenation. Regarding the root-and-pattern method, two features are involved: that of the root contribution and that of the prosodic pattern. The blends are examined following these two features separately. The reason for following this way for examining the blends is because the collected classical Arabic blends show partial conformity to this method. That is, some blends completely conform to the feature of root contribution but not to that of the word pattern, and vice versa.

The analysis of the classical Arabic blends shows that most of the blends exhibit the word pattern *CaCCaC*, whether they conform completely or only partially to the feature of root contribution. Table 5.1 below presents the results of an analysis of all the established classical blends collected in terms of the root-and-pattern method identified in the literature. The blends are arranged according to the frequency of the patterns of root contribution from the most to the least frequent. All source words of Arabic origin in this table are of three root graphemes (i.e. with triliteral roots). It is worth mentioning here that the sounds /w/ and /j/ within the Arabic root are considered root vowel-graphemes, not semi-vowel sounds. The root of each source word is represented by numbers in a column that specifies the position of the root graphemes in the source words in a way where 123 represents the root of SW1 and 456 represents the root of SW2 (see Appendix B for meanings of Classical blends and their source words).

Table 5.1: Analysis of blends in Classical Arabic[19]

Blends	SWs	Roots of SWs	RC feature for both SWs	Patterns of RC	WP feature
1./baʕ.θar/	/ba.ʕaθ/ and /ʔa.θa:r/	bʕθ ʔθr	bʕ θr	12 56	*CaCCaC*
2./baħ.θar/	/baħθ/ and /baθr/	bħθ bθr	bħ θr	12 56	*CaCCaC*
3./bal.ʕam/	/ba.laʕ/ and /tˤaʕm/	blʕ tˤʕm	bl ʕm	12 56	*CaCCaC*
4./bal.qaʕ/	/balq/ and /ba.qaʕ/	blq bqʕ	bl qʕ	12 56	*CaCCaC*
5./bar.qaʃ/	/ba.raq/ and /na.qaʃ/	brq nqʃ	br qʃ	12 56	*CaCCaC*
6./dˤab.xan/	/dˤa.ba:b/ and /dux.xa:n/	dˤbb dxn	dˤb xn	12 56	*CaCCaC*
7./ʕadʒ.raf/	/ʕa.dʒar/ and /dʒa.raf/	ʕdʒr dʒrf	ʕdʒ rf	12 56	*CaCCaC*
8./far.dʒal/	/fa.radʒ/ and /ridʒl/	frdʒ rdʒl	fr dʒl	12 56	*CaCCaC*
9./ħad.qal/	/ħad.daq/ and /na.qal/	ħdq nql	ħd ql	12 56	*CaCCaC*
10./dʒal.ʕad/	/dʒa.lad/ and /dʒaʕd/	dʒld dʒʕd	dʒl ʕd	12 56	*CaCCaC*
11./dʒal.mad/	/dʒald/ and /dʒumd/	dʒld dʒmd	dʒl md	12 56	*CaCCaC*
12./dʒam.har/	/dʒa.mar/ and /dʒa.har/	dʒmr dʒhr	dʒm hr	12 56	*CaCCaC*
13./sˤaʕ.lak/	/sˤaʕ.ʕar/ and /fa.lak/	sʕr flk	sʕ lk	12 56	*CaCCaC*
14./sˤal.xad/	/sˤald/ and /sˤaxd/	sˤld sˤxd	sˤl xd	12 56	*CaCCaC*
15./bur.quʕ/	/barq/ and /ra.qaʕ/	brq rqʕ	br qʕ	12 56	*CuCCuC*
16./ʕusˤ.lub/	/ʕa.sˤab/ and /sˤalb/	ʕsˤb sˤlb	ʕsˤ lb	12 56	*CuCCuC*
17./ħuθ.ful/	/ħaθθ/ and /tifl/	ħθθ tfl	ħθ fl	12 56	*CuCCuC*
18./dʒur.θum/	/dʒurm/ and /dʒuθm/	dʒrm dʒθm	dʒr θm	12 56	*CuCCuC*
19./θuf.ruq/	/θafr/ and /farq/	θfr frq	θf rq	12 56	*CuCCuC*

Blends	SWs	Roots of SWs	RC feature for both SWs	Patterns of RC	WP feature
20./ħid.biːr/	/ħa.dab/ and /ka.biːr/	ħdb kbr	ħd br	12 56	*CiCCiiC*
21./sˤil.dim/	/sˤald/ and /sˤadm/	sˤld sˤdm	sˤl dm	12 56	*CiCCiC*
22./ʕab.ʃam/	/ʕabd/ and /ʃams/	ʕbd ʃms	ʕb ʃm	12 45	*CaCCaC*
23./ħaj.ʕal/	/ħajj/ and /ʕa.la:/	ħjj ʕlj	ħj ʕl	12 45	*CaCCaC*
24./ħaj.hal/	/ħajj/ and /hal.la:/	ħjj hlj	ħj hl	12 45	*CaCCaC*
25./dʒaʕ.fad/[20]	/dʒa.ʕal/ and /fi.da:ʔ/	dʒʕl fdj	dʒʕ fd	12 45	*CaCCaC*
26./maʃ.ʔal/	/ma:.ʃa:ʔ/[21] and /ʔal.la:h/	mʃʔ ʔlh	mʃ ʔl	12 45	*CaCCaC*
27./qaʕ.faz/	/qa.ʕad/ and /fazz/	qʕd fzz	qʕ fz	12 45	*CaCCaC*
28./saħ.dʒal/	/sa.ħal/ and /dʒa.la:/	sħl dʒlj	sħ dʒl	12 45	*CaCCaC*
29./num.ruq/	/na.maq/ and /raqq/	nmq rqq	nm rq	12 45	*CuCCuC*
30./ħab.qur/	/ħabb/ and /qurr/	ħbb qrr	ħb qr	12 45	*CaCCuC*
31./bar.qal/	/barq/ and /qawl/	brq qwl	br ql	12 46	*CaCCaC*
32./ʕab.dar/	/ʕabd/ and /da:r/	ʕbd dwr	ʕb dr	12 46	*CaCCaC*
33./ʕab.qas/	/ʕabd/ and /qajs/	ʕbd qjs	ʕb qs	12 46	*CaCCaC*
34./xar.fadʒ/	/xa.radʒ/ and /fa.radʒ/	xrdʒ frdʒ	xr fdʒ	12 46	*CaCCaC*
35./maʃ.kan/	/ma:.ʃa:ʔ/and /ka:n/	mʃʔ kwn	mʃ kn	12 46	*CaCCaC*
36./ħisˤ.kaf/	/ħisˤn/ and /kajf/[22]	ħsˤn kjf	ħsˤ kf	12 46	*CiCCaC*
37./ɣaθ.mar/	/ɣa.θam/ and /ɣa.θar/	ɣθm ɣθr	ɣθm r	123 6	*CaCCaC*
38./ħar.kal/	/ħar.rak/ and /ridʒl/	ħrk rdʒl	ħrk l	123 6	*CaCCaC*
39./qaʃ.ʕam/	/qaʃʕ/ and /qa.dim/	qʃʕ qdm	qʃʕ m	123 6	*CaCCaC*
40./sab.tˤar/	/sa.batˤ/ and /sa:r/	sbtˤ sjr	sbtˤ r	123 6	*CaCCaC*
41./dʒuð.mur/	/dʒiðm/ and /dʒaðr/	dʒðm dʒðr	dʒðm r	123 6	*CuCCuC*
42./dˤi.batˤr/	/dˤa.batˤ/ and /dˤa.bar/	dˤbtˤ dˤbr	dˤbtˤ r	123 6	*CiCaCC*[23]
43./ɣas.lab/	/ɣa.sˤab/ and /sa.lab/	ɣsˤb slb	ɣ slb	1 456	*CaCCaC*
44./kar.bal/	/ka.bal/ and /ra.bal/	kbl rbl	k rbl	1 456	*CaCCaC*
45./qasˤ.lab/	/qa.wij/ and /sˤalb/	qwj sˤlb	q sˤlb	1 456	*CaCCaC*
46./ʃasˤ.lab/	/ʃa.diːd/ and /sˤalb/	ʃdd sˤlb	ʃ sˤlb	1 456	*CaCCaC*
47./buħ.tur/	/ba.tar/ and /ħa.tar/	btr ħtr	b ħtr	1 456	*CuCCuC*
48./bas.mal/	/bism/[24] and /ʔal.la:h/	bsm ʔlh	bsm l	123 5	*CaCCaC*
49./ħam.dal/	/ħa.mad/ and /ʔal.la:h/	ħmd ʔlh	ħmd l	123 5	*CaCCaC*

Blends	SWs	Roots of SWs	RC feature for both SWs	Patterns of RC	WP feature
50./ħas.bal/	/ħasb/ and /ʔal.la:h/	ħsb ʔlh	ħsb l	123 5	*CaCCaC*
51./sab.ħal/	/sab.baħ/ and /ʔal.la:h/	sbħ ʔlh	sbħ l	123 5	*CaCCaC*
52./dam.ʕaz/	/da:m/ and /ʕizz/	dwm ʕzz	dm ʕz	13 45	*CaCCaC*
53./sam.ʕal/	/sa.la:m/ and /ʕa.la:/	slm ʕlj	sm ʕl	13 45	*CaCCaC*
54./tˤal.baq/	/tˤa:l/ and /ba.qa:ʔ/	tˤwl bqj	tˤl bq	13 45	*CaCCaC*
55./saq.zan/	/su:q/ and /ma:.zin/	swq mzn	sq zn	13 56	*CaCCaC*
56./fir.nub/	/faʔr/ and /ʔar.nab/	fʔr rnb	fr nb	13 56	*CiCCuC*
57./dar.bax/	/da:r/ and /batˤ.tˤi:x/	dwr btˤx	dr bx	13 46	*CaCCaC*
58./ras.ʕan/	/raʔs/ and /ʕajn/	rʔs ʕjn	rs ʕn	13 46	*CaCCaC*
59./sˤah.sˤa.liq/	/sˤa.hal/ and /sˤa.laq/	sˤhl sˤlq	sˤh sˤlq	12 456	*CaCCaCiC*[25]
60./ʃa.qaħ.tˤab/	/ʃaqq/ and /ħa.tˤab/	ʃqq ħtˤb	ʃq ħtˤb	12 456	*CaCaCCaC*
61./ħaw.laq/[26]	/ħawl/ and /quw.wah/	ħwl qwj	ħwl q	123 4	*CaCCaC*

The table shows that these blends either completely or partially conform to the feature of root contribution and that of word pattern of the tendencies identified for forming Arabic blends. Regarding the feature of root contribution, this table shows that only 14/61 (23%) of the blends conform to the feature of root contribution, where each source word contributes its first two root consonants to the blend, as in /bar.qal/, /ʕab.dar/ and /ħisˤ.kaf/. On the other hand, there are blends for which either one of their source words conforms to the feature of root contribution, as in 26/61 (43%) blends where SW1, but not SW2, contributes its first two root consonants to the blend, as in /baʕ.θar/, /dˤab.xan/, and /sˤah.sˤa.liq/, and 4/61 (7%) blends where only SW2 contributes its first two root consonants to the blend, as in /ħaj.hal/, /ras.ʕan/ and /sam.ʕal/. Additionally, in 18/61 (30%) blends, neither source word conforms to the feature of root contribution, as in /ħas.bal/, /qaʃ.ʕam/ and /ʃasˤ.lab/.

The table also shows that the most frequent consonant pattern for classical blends is 12 56, which indicates that the blend is formed from the first two root consonant-graphemes from SW1 and the last two root consonant-graphemes from SW2, with 21/61 blends (34%). This pattern does not seem to reflect the tendency identified in the traditional literature on blend formation in Arabic, which states that blends are formed from the first two root-consonant graphemes of both source words.

The analysis also shows other tendencies for forming blends in terms of the root-and-pattern method. There are 11/61 (18%) blends where the SW1 contributes all of its root graphemes with the SW2 either contributing its first root grapheme, as in /ħaw.laq/ or the second root grapheme, as in /bas.mal/ and /ħas.bal/ or the last root grapheme, as in /ħar.kal/ and /sab.tˤar/.

As for the feature of word pattern, the analysis shows that the most frequent pattern is *CaCCaC*, which is the identified pattern in the literature, with 46/61 (75%) blends exhibiting it. The analysis also shows that the pattern *CuCCuC* is also frequent, with 8/61 (13%) blends exhibiting it. There are also other patterns, as in /ħid.biːr/ *CiCCiːC*, and /sˤil.dim/ *CiCCiC* that are less frequent with 8/61 (13%) blends.

The results of this analysis show that it is not unusual to find a classical Arabic blend with source words contributing root graphemes other than the first two consonant-graphemes or exhibiting a word pattern other than *CaCCaC*. Nevertheless, it can be said that there are two (moderately) strong tendencies in the classical data: (1) SW1 tends to contribute its first two consonants (39 blends, 63% of all examples), and (2) the blend has the word pattern *CaCCaC* (46 blends, 74% of all examples). It is also noteworthy that all of the classical blends are formed following the root-and-pattern method where the source words are joined non-concatenatively to form the blend.

The established blends of Modern Arabic are different. Table 5.2 below presents the results of an analysis of these blends in terms of the root-and-pattern method (see Appendix C for meanings of Modern blends and their source words), also arranged from the most to the least frequent pattern of root contribution. Words of non-Arab origin mostly have more than three root graphemes, like SW2 /hid.ru.dʒiːn/ of the blend /naz.dʒan/, which has five root graphemes, represented as 45678.

Table 5.2: Analysis of blends in Modern Arabic

Blends	SWs	Roots of SWs	RC feature for both SWs	Patterns of RC	WP feature
1./zam.kan/	/za.ma:n/ and /ma.ka:n/	zmn mkn	zm kn	12 56	*CaCCaC*
2./dʒaw.qal/	/dʒaw/ and /na.qal/	dʒww nql	dʒw ql	12 56	*CaCCaC*
3./haw.mal/	/ha.wa:ʔ/ and /ħa.mal/	hww ħml	hw ml	12 56	*CaCCaC*
4./ħal.qaẓ/	/ħulm/ and /ja.qiẓ/	ħlm jqẓ	ħl qẓ	12 56	*CaCCaC*
5./batˤ.dʒal/	/batˤn/ and /ridʒl/	btˤn rdʒl	btˤ dʒl	12 56	*CaCCaC*
6./ba.nasˤr/	/bank/ (n-Arb.W) and /masˤr/	bnk msˤr	bn sˤr	12 56	*CaCaCC*
7./fasˤ.ʕam/	/fa.sˤi:ħ/ and /ʕa:m/	fsˤħ ʕmm	fsˤ ʕm	12 45	*CaCCaC*
8./daw.fam/	/da:.ʔir/and /fam/	dwr fm	dw fm	12 45	*CaCCaC*
9./ʔan.fam/	/ʔanf/ and /fam/	ʔnf fm	ʔn fm	12 45	*CaCCaC*
10./sar.nam/	/sajr/ and /nawm/	sjr nwm	sr nm	13 46	*CaCCaC*
11./dar.ʕam/	/da:r/ and /ʕu.lu:m/	dwr ʕlm	dr ʕm	13 46	*CaCCaC*
12./rak.mad ʒ/	/ra.kab/ and /mawdʒ/	rkb mwdʒ	rk mdʒ	12 46	*CaCCaC*
13./naz.dʒan /	/na.zaʕ/ and /hid.ru.dʒi:n / (n-Arb.W)	nzʕ hdrdʒn	nz dʒn	12 78	*CaCCaC*
14./ħaj.za.m an/	/ħaj.jiz/ and /za.ma:n/	ħjz zmn	ħj zmn	12 456	*CaCCaCaC*
15./ħal.maʔ/	/ħall/ and /ma:ʔ/	ħll mwh	ħl m	12 4	*CaCCaC*
16./ʔa.nar.ka z/	/ʔa.na:/ and /mar.kaz/	ʔn rkz	ʔn rkz	12 345	*CaCaCCaC*
17./liʕ.nif/	/laj.jin/ and /zuʕ.nuf/	ljn zʕnf	l ʕnf	1 567	*CiCCiC*
18./baj.sˤatˤr /	/bajn/ and /sˤatˤr/	bjn sˤtˤr	NA*	NA	*CaCCaCC*
19./faw.sa.w ij/	/fawq/ and /sa.wij/	fwq swj	NA	NA	*CaCCaCC*
20./faw.sˤaw t/	/fawq/ and /sˤawt/	fwq sˤwt	NA	NA	*CaCCaCC*
21./qab.ħarb /	/qabl/ and /ħarb/	qbl ħrb	NA	NA	*CaCCaCC*

Blends	SWs	Roots of SWs	RC feature for both SWs	Patterns of RC	WP feature
22./ʕasˤ.dʒa.na:ħ/	/ʕa.sˤab/ and /dʒa.na:ħ/	ʕsˤb dʒnħ	NA	NA	*CaCCaCaaC*
23./ħaj.na.ba:t/	/ħa.ja.wa:n/ and /na.ba:t/	ħjw nbt	NA	NA	*CaCCaCaaC*
24./ɣim.dʒa.na:h/	/ɣimd/ and /dʒa.na:h/	ɣmd dʒnh	NA	NA	*CiCCaCaaC*
25./ɣiʃ.dʒa.na:ħ/	/ɣi.ʃa:ʔ/ and /dʒa.na:ħ/	ɣʃw dʒnħ	NA	NA	*CiCCaCaaC*
26./mus.dʒa.na:ħ/	/mus.ta.qi:m/ and /dʒa.na:ħ/	qwm dʒnħ	NA	NA	*CuCCaCaaC*
27./qab.mi:.la:d/	/qabl/ and /mi:.la:d/	qbl wld	NA	NA	*CaCCiiCaaC*
28./qab.ta:.ri:x/	/qabl/ and /ta:.ri:x/	qbl ʔrx	NA	NA	*CaCCaaCiiC*
29./taħ.ʃu.ʕu:r/	/taħt/ and /ʃu.ʕu:r/	tħt ʃʕr	NA	NA	*CaCCuCuuC*
30./bar.ma:ʔ/	/barr/ and /ma:ʔ/	brr mwh	NA	NA	*CaCCaaC*
31./xa:.mad.ra.sah/	/xa:.ridʒ/ and /mad.ra.sah/	xrdʒ drs	NA	NA	*CaaCaCCaC*
32./ʔar.ba.dʒul/	/ʔar.ba.ʕah/ and /ʔar.dʒul/	rbʕ rdʒl	NA	NA	*CaCCaCuC*
33./ħaj.θu:m/	/ħa.ja.wa:n/ and /dʒur.θu:m/	ħjw dʒrθm	NA	NA	*CaCCuuC*
34./qitˤ.sar/	/qi.tˤa:r/ and /sar.i:ʕ/	qtˤr srʕ	NA	NA	*CiCCaC*
35./ʃib.za:l/	/ʃibh/ and /za.la:l/	ʃbh zl	NA	NA	*CiCCaaC*
36./faq.ba.naf.sadʒ/	/fawq/ and /ba.naf.sadʒ/ (n-Arb.W)	fwq bnfsdʒ	NA	NA	*CaCCaCaCCaC*
37./dʒað.ridʒl/	/dʒaðr/ and /ridʒl/	dʒðr rdʒl	NA	NA	*CaCCiCC*
38./ʃan.ka.bu:t/	/ʃa.ba.kah/ and /ʕan.ka.bu:t/	ʃbk ʕnkb	NA	NA	*CaCCaCuuC*

*NA indicates that the feature of root contribution does not apply when forming the blend.

The results in this table show that only 17/38 (45%) of the established modern blends are formed following the root-and-pattern method for forming Classical Arabic blends. In only 4/17 (24%) of these blends, both source words contribute the first two root consonants and the blend exhibits the pattern *CaCCaC*. Examples are /sar.nam/ and /rak.madʒ/. Of the feature of root contribution in the remaining 13/17 (76%) blends, 8/13 (62%) have only SW1 contributing the first two root consonants, as in /dar.ʕam/ and /batˤ.dʒal/, and only one blend, /daw.fam/, has SW2 contributing the first two root consonants. In the remaining 4/13 (31%) blends, neither source word adheres to the tendency identified for the feature of root contribution, as in /dʒaw.qal/ and /liʕ.nif/. Regarding the feature of word pattern, 9/13 (69%) blends exhibit the word pattern *CaCCaC*.

Concerning this set of modern blends, it can, therefore, be said that 17 (45%) of all examples resemble the classical blends in showing the following two tendencies: (1) SW1 contributes its first two consonants (14/17 blends, 82%), and (2) the blend has the word pattern *CaCCaC* (13/17 blends, 76%).

The remaining 21/38 (55%) modern blends appear to reflect a process of joining fracto-lexemes which is not mentioned in the literature. Firstly, the analysis shows that they do not adhere to the tendency for the feature of root contribution identified, although they exhibit some attested Arabic word patterns. Secondly, the blends can be parsed at some point in such a way as to reflect a concatenative structure, which is not an identified feature of the formation of blends in Classical Arabic. The structure of these blends is displayed in Table 5.3 below, showing which fracto-lexemes of the SWs are joined.

Table 5.3: Locations of fracto-lexemes in SWs of the novel blends in Modern Arabic

Blends	SWs	Locations of fracto-lexemes in SWs
1./baj.sˤatˤr/	/bajn/ and /sˤatˤr/	initial + full
2./faw.sa.wij/	/fawq/ and /sa.wij/	initial + full
3./faw.sˤawt/	/fawq/ and /sˤawt/	initial + full
4./qab.ħarb/	/qabl/ and /ħarb/	initial + full
5./ʕasˤ.dʒa.na:ħ/	/ʕa.sˤab/ and /dʒa.na:ħ/	initial + full
6./ħaj.na.ba:t/	/ħa.ja.wa:n/ and /na.ba:t/	initial + full
7./ɣim.dʒa.na:h/	/ɣimd/ and /dʒa.na:h/	initial + full
8./ɣiʃ.dʒa.na:ħ/	/ɣi.ʃa:ʔ/ and /dʒa.na:ħ/	initial + full
9./mus.dʒa.na:ħ/	/mus.ta.qi:m/ and /dʒa.na:ħ/	initial + full
10./qab.mi:. la:d /	/qabl/ and /mi:.la:d/	initial + full
11./qab.ta:.ri:x/	/qabl/ and /ta:.ri:x/	initial + full
12./taħ. ʃu.ʕu:r/	/taħt/ and /ʃu.ʕu:r/	initial + full
13./bar.ma:ʔ/	/barr/ and /ma:ʔ/	initial + full
14./xa:.mad.ra.sah/	/xa:.ridʒ/ and /mad.ra.sah/	initial + full
15./ʔar.ba.dʒul/	/ʔar.ba.ʕah/ and /ʔar.dʒul/	initial + final
16./ħaj.θu:m/	/ħa.ja.wa:n/ and /dʒur.θu:m/	initial + final
17./ʃan.ka.bu:t/	/ʃa.ba.kah/ and /ʕan.ka.bu:t/	initial + final
18./qitˤ.sar/	/qi.tˤa:r/ and /sa.ri:ʕ/	initial + initial
19./ʃib.za:l/	/ʃibh/ and /za.la:l/	initial + non-sequential
20./faq.ba.naf.sadʒ/	/fawq/ and /ba.naf.sadʒ/	non-sequential + full
21./dʒað.ridʒl/	/dʒaðr/ and /ridʒl/	full + full (overlap)

Of these blends, 14/21 (67%) blends are formed by joining the initial fracto-lexeme of SW1 with the whole of SW2, as in /qab.ħarb/ and /ʕasˤ.dʒa.na:ħ/, known as "partial blends" where only one source word is reduced and the other is present in the blend in its full form (Mattiello 2013, 120). These blends are very frequent in English and confirm the relevance of the second source word to the whole blend. The remaining blends (7/21, 33%) reflect variations in the locations of the contributed fracto-lexemes: three have the initial fracto-lexeme of SW1 joined with the final fracto-lexeme of SW2, which is a prototypical English pattern, as in /ħaj.θu:m/, and one blend, /qitˤ.sar/, is formed by joining the initial fracto-lexemes of both SWs. The blends /ʃib.za:l/ and /faq.ba.naf.sa.dʒij/ have one of their SWs contributing non-sequential fracto-lexemes. Meanwhile, /dʒað.ridʒl/ is formed by the full contribution of both SWs with an overlap at one point, which covers the internal ends of the source words. The blend /ʃan.ka.bu:t/ reflects an interesting feature of onset replacement where the onset of the first syllable in the SW1 replaces that of the corresponding syllable in the SW2. This feature has not been identified before in Arabic.

The different combinations of the fracto-lexemes can be conveniently displayed in terms of the structural pattern of AB+CD proposed by Plag (2003) for the analysis of blends in English (see section 1.1.1). In cases of blends where either one of the source words is present in its entirety in the blend without having an overlap with the other source word, the part of the structural pattern representing it is referred to by the letter W, indicating a full word.

Table 5.4 below shows the numbers of blends for each structural pattern with the parts with a strikethrough indicating non-sequential contribution and the underlined parts the overlapping segments. For instance, the structural pattern of the blend /ʃib.za:l/ < /**ʃib**h/ and /**z**a.l**a:l**/ is AB+CD=A~~CD~~, with a strike-through CD indicating that there is non-sequential contribution from SW2; and the structural pattern of the blend /dʒað.ridʒl/ < /**dʒaðr**/ and /**ridʒl**/ is AB+CD=ABCD, with an underlined BC indicating overlap at this point.

Table 5.4: Patterns of established Modern Arabic blends

Patterns of fracto-lexemes	Examples	Frequency
AB+CD=AW	/baj.sˤatˤr/ < /**baj**n/ and /**sˤatˤr**/	**14**
AB+CD=AD	/ʔar.ba.dʒul/ < /**ʔar.ba.**ʕah/ and /ʔar.**dʒul**/	3
AB+CD=AC	/qitˤ.sar/ < /qi.tˤa:r/ and /sa.ri:ʕ/	1
AB+CD=A~~CD~~	/ʃib.za:l/ < /**ʃib**h/ and /**z**a.l**a:l**/	1
AB+CD=~~AB~~W	/faq.ba.naf.sadʒ/ < /**fa**w**q**/ and /**ba.naf.sadʒ**/	1
AB+CD=ABCD	/dʒað.ridʒl/ < /**dʒaðr**/ and /**ridʒl**/	1
Total		**21**

The table shows that the most frequent pattern is the one that includes the first part of the first source word and the whole of the second source word.

One last point should be mentioned about both sets of blends in Classical and Modern Arabic, which is the position of the source words in the blends. In these two sets of blends, except for the two blends

/dʒaw.qal/ and /haw.mal/, the order that the source words would normally have if they occurred together in a sentence is not maintained in the blend. The blend /dʒaw.qal/ "airborne" is formed from the source words /dʒaw/ "atmosphere" and /na.qal/ "transport", which within an ordinary sentence would have the order /na.qal/ "transport" and /dʒaw/ "air", as in X /na.qal(a)/ Y /dʒaw(wan)/ (S.V.O.Adv.), and the blend /haw.mal/ "airborne" is formed from the source words /ha.wa:ʔ/ "air" and /ħa.mal/ "carried", which also in an ordinary sentence would have the order /ħa.mal/ "carried" and /ha.wa:ʔ/ "air", as in X /ħa.ma.l(a)/ Y /bil.ha.wa:.ʔ(i)/ (S.V.O.PP.). This indicates that it is not unusual to find blends formed by joining the source words in a reversed order, more specifically, an English order

The analysis so far has shown that classical blends are all formed following the root-and-pattern method and that around half of the established modern blends also work like this. In both sets, there is a tendency for SW1 to contribute its first two consonants and for the template of the blend to be *CaCCaC*. The fact that these are mere tendencies, not firm rules, indicates that such "traditional" blends show considerable latitude in the choice of the root-and-pattern method adopted. This makes them rather different from the core cases of root-and-pattern template morphology in Arabic, where the patterns are completely fixed. The other half of the modern blends is not formed following the root-and-pattern method at all; instead, they are formed following the concatenation method. The following section examines the features of both types of Arabic blends.

Accordingly, a blend in Arabic can be defined as a new lexeme formed by joining two or more other lexemes following a root-and-pattern method or a concatenation method and exhibiting an identified word pattern in Arabic, meaning that two methods are identified for forming blends in Arabic.

5.2.2. Features of Arabic Blends

After examining the data compiled for Classical and Modern Arabic, it is found that blends tend to be formed according to two major tendencies: classical and modern. The classical type adheres to the tendencies identified for forming Classical blends (as discussed and found out in section 5.2.1) and the modern type adheres to both these tendencies as well as to a blend-formation tendency similar to the one identified in the literature for blend formation in English (as discussed in section 3.5).

Although it appears that there are two very different processes at work: classical-type blends work according to the root-and-pattern method and modern-type blends work according to the concatenation method, it can be useful to group the three features identified for forming Arabic blends to work on categorising blends according to these two types.

It is possible at this point to draw up a table for methods of forming Arabic blends based on the analysis of both datasets. This table includes, in addition to the identified root-and-pattern method, the method of concatenative joining (CON method in tables). This comprehensive table could then be used to check the level of conformity of any Arabic blends to these methods.

The feature of root contribution is checked for each source word separately, not for both of them together. Examining this feature is not restricted only to the contribution of the first two root consonants from the source words but rather expands to include cases of blends whose source words contribute root graphemes from different parts in the word, not only the first two parts. Examining the feature of word pattern is not restricted to the one that traditional grammarians specified, which is *CaCCaC*, but rather expands to include cases of blends that show a high preference for exhibiting other Arabic word patterns. Table 5.5 below displays the level of conformity to the features on a scale of one to four for a sample set of blends from the data given in Table 5.1 and Table 5.2. See Appendix E for a full table. Blends are arranged from the most to the least conforming.
Annotations used in this table refer to the following:

- Y = 1; meaning that the blend completely conforms to the tendency identified for the specified feature or method.
- P = 0.5; meaning that the blend partially conforms to the tendency identified for the feature of root contribution, where the source word contributes any of its root graphemes regardless of their amount and ordering within the root of each source word; or the blend partially conforms to the tendency identified for the feature of word pattern, where the blend exhibits a pattern other than *CaCCaC* that forms a preference for some blends to exhibit;
- N = 0; meaning that the blend does not conform to the tendency identified for the specified feature or method, where the source words, for instance, do not contribute root graphemes or the blends exhibit nonce patterns, or a pattern not attested in Arabic; or the source words do not contribute fracto-lexemes, but rather root graphemes.

Table 5.5: Analysis of sample established blends in terms of their conformity to the blending features of Arabic

Blend	RC feature for SW1	RC feature for SW2	WP feature	CON method	Level of conformity out of four
1./bar.qal/	Y	Y	Y	N	3
2./baʕ.θar/	Y	P	Y	N	2.5
3./bas.mal/	P	P	Y	N	2
4./buħ.tur/	P	P	P	N	1.5
5./xa:.mad.ra.sah/	N	N	N	Y	1

The results, as fully presented in Appendix E, show that any novel blends can be tested according to the features identified in the literature on Arabic blends. Although there are blends that only conform to one feature, they are still called blends. The definition of a blend in Arabic can be broader than the one identified with blends in Classical Arabic to include newly formed blends. These new blends do not necessarily conform to all of the features.

5.2.3. Analysis and Discussion of Established Arabic Blends in the Light of the Features of English Blends

This section examines in detail the 21 established blends that are formed through a process of concatenating fracto-lexemes coming from the source words, similar to the general blending pattern found in English and other languages. They will be analysed in light of the three features of English blends discussed in Chapter 3. To identify the most frequent patterns in these blends, their mean average frequencies are calculated. Any patterns that are located above the mean average frequency represent the most frequent ones and the labels and frequency figures for those patterns are shown in bold in the tables that follow.

The following section (5.2.3.1) discusses the tendencies based on the location of the cut-off point in source words. The discussion of tendencies for the proportional contributions from source words to blends is given in section 5.2.3.2. The discussion of the tendencies for stress patterns in blends is given in section 5.2.3.3. Section 5.2.4 presents a summary of the tendencies identified for forming the collected established Arabic blends.

5.2.3.1. Tendencies for Cut-off Points in Source Words

This section examines the feature of the location of cut-off points in the source words for the established blends. Four major tendencies relating to the feature of cut-off points that have been identified in English (see section 3.5.1) are considered in this discussion. The tendencies identified based on the feature of cut-off point in the source words relate to their prosodic structure. It is generally the case that the cut-off point tends to occur at phonological boundaries either between syllabic constituents or at syllabic boundaries. The preferences for cut-off points in the source words, arranged from the most to the least frequent, occur in the following points: between syllabic constituents, usually between the onset and nucleus; or

- at a syllable boundary; or
- at word boundaries; or
- between the nucleus and coda.

Of the 21 concatenative blends in the data, the blend /faq.ba.naf.sadʒ(ij)/ formed from /fa|w|q/ and /ba.naf.sadʒ(ij)/ appears to have multiple cut-off points; this blend is excluded from the analysis. This means that 20 blends are examined for this feature. below presents an analysis of this set of established Arabic blends. Table 5.6 below shows the location of the cut-off point in the two SWs (at word boundaries, at a syllable boundary, between syllabic constituents, inside syllabic constituents), one example blend is given for each pattern, the SWs of the example, and the frequency of the pattern.

Table 5.6: Combinations of cut-off points in SWs of established Arabic blends

Cut-off points	Example Blend	SWs	Frequency
inside coda + word boundary	/baj.sˤatˤr/	/**baj**|n/ and /**sˤatˤr**/	**9 (45%)**
onset-nucleus (2nd Syl.) + word boundary	/ʕasˤ.dʒa.naːħ/	/**ʕa.sˤ**|ab/ and /**dʒa.naːħ**/	**3 (15%)**
inside coda + onset-nucleus (2nd Syl.)	/ʃib.zaːl/	/**ʃib**|h/ and /**za.l**|aːl/	1 (5%)
onset-nucleus (2nd Syl.) + onset-nucleus (2nd Syl.)	/qitˤ.sar/	/**qi.tˤ**|aːr/ and /**sa.r**|iːʕ/	1 (5%)
onset-nucleus (2nd Syl.) + Syl. boundary	/ħaj.θuːm/	/**ħa.j**|a.waːn/ and /dʒur.|**θuːm**/	1 (5%)
Syl. boundary (1st Syl.|2nd Syl.) + onset-nucleus (1st Syl.)	/ʃan.ka.buːt/	/**ʃa.**|ba.kah/ and /ʕ|**an.ka.buːt**/	1 (5%)
Syl. boundary (1st Syl.|2nd Syl.) + word boundary	/mus.dʒa.naːħ/	/**mus**|.ta.qiːm/ and /**dʒa.naːħ**/	1(5%)
Syl. boundary (2nd Syl.|3rd Syl.) + Syl. boundary	/ʔar.ba.dʒul/	/**ʔar.ba.**|ʕah/ and /ʔar.|**dʒul**/	1 (5%)
Syl. boundary + word boundary	/xaː.mad.ra.sah/	/**xaː.**|ridʒ/ and /**mad.ra.sah**/	1 (5%)
word boundary + word boundary	/dʒað.ridʒl/	/**dʒaðr**/ and /**ridʒl**/	1 (5%)
Total			**20**
Average frequency			**2**

The results in this table show that the most frequent preference for the combination of cut-off points in source words is: inside the coda + at word boundaries, with 9/20 (45%) of the blends showing this preference. The second preference for the combination of cut-off points is: between the onset and nucleus of the 2nd syllable of the source word + at word boundaries, with 3/20 (15%) of the blends showing this preference.

Regarding the first preference, this combination contains a cut-off point that is inside a syllabic constituent; this location for the cut-off point is rare in English.

There is some variation in the types of fusion found at the split points in these blends. Specifically, there are three types of fusion, the most frequent type being resyllabification. Table 5.7 below displays these types.

Table 5.7: Types of fusion at the split points in the CON blends

Types of fusion at split points	Frequency	Examples	Source words with cut-off points
resyllabification	**16 (80%)**	/ʕasˤ·dʒa.na:ħ/	/**ʕa.sˤ**|ab/ and /**dʒa.na:ħ**/
syllabic maintenance	3 (15%)	/mus.dʒa.na:ħ/	/**mus**|.ta.qi:m/ and /**dʒa.na:ħ**/
onset replacement (1st Syl.)	1 (5%)	/ʃan.ka.bu:t/	/**ʃa.**|ba.kah/ and /ʕ|**an.ka.bu:t**/
Total	**20 blends**		

We can also consider the preferences for the location of the cut-off point in each source word; that is, the preference for the cut-off point in the first source word and that in the second source word, separately.

Table 5.8 below displays the locations of cut-off points in SW1 and SW2 of the established concatenative Arabic blends. The categories distinguished are the same as in Table 5.6.

Table 5.8: Locations of cut-off points in SW1s and SW2s of established Arabic blends

The cut-off points in all of SW1s	Frequency	The cut-off points in all of SW2s	Frequency
inside coda	**10 (50%)**	**word boundary**	**15 (75%)**
onset-nucleus (2nd Syl.)	**5 (25%)**	onset-nucleus (2nd Syl.)	2 (10%)
Syl. boundary (1st Syl.|2nd Syl.)	2 (10%)	Syl. boundary	2 (10%)
Syl. boundary	1 (5%)	onset-nucleus (1st Syl.)	1 (5%)
Syl. boundary (2nd Syl.|3rd Syl.)	1 (5%)	-	-
word boundary	1 (5%)	-	-
Total	**20 SWs**	**Total**	**20 SWs**
Average frequency	**3**		**5**

The table shows two most frequent preferences for the location of the cut-off point in the first source word. These preferences are: (1) inside the coda, with 10 (50%) of the blends showing this preference, and (2) between the onset and nucleus of the 2nd syllable of the source word, with 5 (25%) of the blends showing this preference. The most frequent preference for the location of the cut-off point in the second source word is at word boundaries, with 15 (75%), meaning that the whole source word is present in the blend in its entirety.

Table 5.9 below displays the frequency figures for the location of the cut-off points in all of the source words of these blends taken together.

Table 5.9: Locations of cut-off points in all of SWs of established Arabic blends

Cut-off points in all of SWs	Frequency
word boundary	**16 (40%)**
inside coda	**10 (25%)**
onset-nucleus (2nd Syl.)	**7 (18%)**
Syl. boundary	3 (8%)
Syl. boundary (1st Syl.|2nd Syl.)	2 (5%)
Syl. boundary (2nd Syl.|3rd Syl.)	1 (3%)
onset-nucleus (1st Syl.)	1 (3%)
Total	**40 SWs**
Average frequency	**6**

As can be seen, there are three most frequent locations for the cut-off points in the source words of the established Arabic blends, which are:

- at word boundaries;
- inside the coda; and
- between onset and nucleus of the 2nd syllable of the source word.

It should be noted, though, that these preferences are not equally strong in SW1 and SW2, as the data in Table 5.8 clearly show.

5.2.3.2. Tendencies for Proportional Contributions from Source Words

This section examines the feature of proportional contributions from source words to established blends. Two major tendencies relating to the feature of proportional contribution from source words to blends that have been identified in English (see section 3.5.2) are considered in this discussion. Both tendencies relate to the length of the source words, measured by the number of units, in this discussion, phonemes. The two tendencies are: firstly, it is generally the case for English blends that the greater proportion of contribution comes from the shorter source word (Kaunisto 2000, 49-50). Second, when source words have equal length, it is generally the case that there is an equal proportion of contribution from both source words to the blend (Gries 2004b, 654).

The 99 established blends are analysed following the method of analysis implemented by Kaunisto (2000, 49) and developed by Gries (2004b, 651), discussed in section 3.5.2.

This set of blends consists of two subsets: 78 of the blends are root-and-pattern ones, and 21 are concatenative. The root-and-pattern blends will be analysed in terms of the root contribution, i.e. in terms of how many consonants in the blend come from SW1 and how many from SW2. Since these blends have an independent vocalic pattern/ template, analysis of source word contribution for their vowels is not possible. The concatenative blends will be analysed in terms of both vowels and consonants coming from SW1 as opposed to SW2.

Of the 78 root-and-pattern blends, 72 are blends with source words of equal root lengths, e.g. /baʕ.θar/ < /ba.ʕaθ/ and /ʔa.θa:r/, both source words are of triliteral roots, and 6 blends with source words of different root lengths, e.g. /liʕ.nif/ < /laj.jin/ (triliteral root) and /zuʕ.nuf/ (quatriliteral root). Of the 21 concatenative blends, 15 blends have source words of different phonemic lengths and 6 have source words of equal phonemic lengths.

The results of applying the method referred to above suggest that if X and $Y = Z$ (where X and Y are the source words, and Z is the blend), and if $X > Y$, then $a{:}x < b{:}y$, where a is the contributed part from X and b the contributed part from Y. This finding for English also works the other way round; that is if $X < Y$, then $a{:}x > b{:}y$, where a is the contributed part from X and b the contributed part from Y. In other words, the greater proportion of contribution tends to come from the shorter source word regardless of its position in the blend.

To explain how the established blends are analysed, two are analysed below as samples of established root-and-pattern blends and established concatenative blends.

Figure 5.1 below displays how the proportional root-contributions for the root-and-pattern blend /rak.madʒ/ "surf" are calculated.

Figure 5.1: Analysis of the blend /rak.madʒ/

Source word 1: /ra.kab/	b	⇒ $^1/_3$ not in the blend = 33%
	r k	⇒ $^2/_3$ in the blend = 67%
Source word 2: /mawdʒ/	↑ **m dʒ**	⇒ $^2/_3$ in the blend = 67%
	w	⇒ $^1/_3$ not in the blend = 33%
a split point		

This figure shows that both source words, having the same root length, contribute equal proportions to the blend.

Figure 5.2 below displays how the proportional phonemic contributions for the concatenative blend /qab.ta:.riːx/ "prehistory" are calculated.

Figure 5.2: Analysis of the blend /qab.ta:.riːx/

Source word 1: /qabl/	l	⇒ $^1/_4$ not in the blend = 25%
	q a b	⇒ $^3/_4$ in the blend = 75%
Source word 2: /ta:.riːx/	**t a: r i: x**	⇒ $^5/_5$ in the blend = 100%
		⇒ $^0/_5$ not in the blend = 0%
a split point		

This figure shows that the greater proportional phonemic contribution comes from the second source word, which has a longer phonemic length.

In calculating the proportional contributions, each blend is coded according to the phonemic length of its source words as well as their proportional contribution to the blend. This coding replicates the one used by Gries (2004a, 418).

Table 5.10 below displays the results for the proportional contributions from the source words to the 78 established root-and-pattern blends. The left-hand column indicates the length of the source words and the top line indicates whether both source words contribute equal proportions to the blend, or the first source word contributes the greater proportion to the blend, or the second source word contributes the greater proportion to the blend.

Table 5.10: Proportional contributions from SWs to the root-and-pattern blends

Phonemic length of source words	Equal proportions from both SWs	Greater proportion is from SW1	Greater proportion is from SW2	Total number of blends
SW1< SW2	0 (0%)	2 (67%)	1 (33%)	3 (4%)
SW1 > SW2	0 (0%)	3 (100%)	0 (0%)	3 (4%)
SW1 = SW2	**52 (72%)**	8 (11%)	12 (17%)	72 (92%)
Total frequency	52 (67%)	13 (17%)	13 (17%)	78

The results show that 3 (4%) of the blends have SW1 shorter than SW2, 3 (4%) of the blends have SW2 shorter than SW1, and 72/78 (92%) have both source words of equal root length. This distribution looks much skewed; however, it conforms to the tendency of blending source words that are similar in terms of length. Nevertheless, it has to be realised that most words in Arabic are triliteral. All the SWs in the SW1=SW2 category are also of this kind, so these figures in Table 5.10 simply reflect the general pattern of word length in Arabic.

When it comes to source word contribution, the results show a high preference for equal root proportional contributions, with 52/72 (72%) of the blends of SW1=SW2, as in /bal.ʕam/ "esophagus" < /ba.laʕ/ "gulp" and /tˤaʕm/ "taste" showing this preference. When both the left-hand column and the top line in Table 5.10 are considered, the results also show that when both source words have the same root length, they tend to contribute equal root proportions to the blend.

Table 5.11 below displays proportional phonemic contributions from source words to the established concatenative blends.

Table 5.11: Proportional contributions from SWs of CON blends

Phonemic length of source words	Equal proportions from both SWs	Greater proportion is from SW1	Greater proportion is from SW2	The total frequency of responses with these word pairs
SW1< SW2	0 (0%)	1 (10%)	**9 (90%)**	10 (48%)
SW1 > SW2	0 (0%)	1 (20%)	4 (80%)	5 (24%)
SW1 = SW2	1 (17%)	0 (0%)	5 (83%)	6 (29%)
Total frequency	1 (5%)	2 (10%)	18 (86%)	21

Regarding established concatenative blends, there is a preference for the greater proportional phonemic contribution to come from the second source word, especially when it is longer phonemically.

5.2.3.3. Tendencies for Stress Patterns of Blends

This section discusses the stress patterns of established Arabic blends in light of the tendencies identified for blends in English. It is generally the case that the stressed syllable of the blend in English corresponds to that of one of the source words (Bergström 1906, 46); (Bat-El and Cohen 2012, 193); it is usually the longer source word that "dictates" the primary stress of the blend (Cannon 1986, 746), and in most English blends, the longer source word is the second source word (Gries 2004a, 426). This indicates that the size and the position of the source words interact in assigning the stress patterns of the blends.

In Arabic, the prosodic pattern of the word determines its stress pattern. For instance, the prosodic pattern of the blend /ˈʕab.ʃam/ is ˈCVC.CVC and it is this pattern that means that stress in this word falls on the penultimate syllable.

Stress assignment in Arabic is relatively simple. There are three patterns, described by Al-Jarrah (2002, 91-2) as follows: Stress falls on the final syllable of the word if and only if it is super heavy, i.e. with a coda consisting of two or more consonants (/CVCC/) as in /ka.ˈtabt/ "wrote" or with both a branching nucleus and a coda (/CVVC/), as in /ka.ˈbi:r/ "big".If the final syllable is not super heavy, stress goes to the penultimate syllable if it is heavy, i.e. /CVC/ or /CVV/, as in /ˈmak.tab/ "office" and /ˈka:.tib/ "writer".In all other cases, stress falls on either the penultimate, as in /mak.ˈta.bah/ "library", or on the antepenultimate syllable, as in /ˈsa.mi.ʕa/ "heard", whichever is separated from a preceding heavy syllable (or a word boundary) by an even number of light syllables.

Since word stress in Arabic is determined by the prosodic pattern it exhibits, it is rarely found in this set of data that the blend gets its stressed syllable from either of the source words. The two main factors regarding this feature are:

- Whether the blend has a syllabic size different from/ similar to that of both or either source word; and
- whether the blend exhibits a stress pattern different from/ similar to that of either source word.

The established Arabic blends displayed in Table 5.5 are examined in the light of this feature, except for the blend /sˤal.ʕam/ < /sˤal.la:/, /ʕa.la:/ and /sal.lam/, which is formed from three source words.

Of the 99 established blends, 56 (57%) have source words of identical syllabic sizes and 43 (43%) have source words of different syllabic size.

Table 5.12 below displays the stress patterns of Arabic blends while referring to the syllabic size of the source words as having identical or different sizes.

Table 5.12: Stress patterns of established blends (syllabic size of blends X syllabic size of SWs)

<table>
<tr><th>Syllabic size of SWs</th><th>Frequency</th><th>Syllabic size of blends to SWs</th><th>Freq-uency</th><th>(Non-)identity of stress in blends and SWs</th><th>Freq-uency</th><th>Examples</th></tr>
<tr><td rowspan="5">$SW1^{\sigma}=SW2^{\sigma}$</td><td rowspan="5">56/99(57 %)</td><td>$Bl^{\sigma}\neq SW^{\sigma}$</td><td>31/56 (56 %)</td><td>$Bl^{stress}\neq SW^{stress}$</td><td>31/31 (100 %)</td><td>/ʔa.ˈnar.kaz/ < /ˈʔa.na:/ and /ˈmar.kaz/ (/CV.ˈCVC.CVC/ < /ˈCV.CVV/ and /ˈCVC.CVC/</td></tr>
<tr><td rowspan="4">$Bl^{\sigma}=SW^{\sigma}$</td><td rowspan="4">25/56 (45 %)</td><td>$Bl^{stress}=SW^{stress}$</td><td>12/25 (48%)</td><td>/ˈkar.bal/ < /ˈka.bal/ and /ˈra.bal/ (/ˈCVC.CVC/ < /ˈCV.CVC/ and /ˈCV.CVC/)</td></tr>
<tr><td>$Bl^{stress}\neq SW^{stress}$</td><td>5/25 (20%)</td><td>/dˤi.ˈbatˤr/ < /ˈdˤa.batˤ/ and /ˈdˤa.bar/ (/CV.ˈCVCC/ < /ˈCV.CVC/ and /ˈCV.CVC/)</td></tr>
<tr><td>$Bl^{stress}=SW1^{stress}$</td><td>4/25 (16%)</td><td>/ˈħam.dal/ < /ˈħa.mad/ and /ʔal.ˈla:h/ (/ˈCVC.CVC/ < /ˈCV.CVC/ /CVC.ˈCVVC/)</td></tr>
<tr><td>$Bl^{stress}=SW2^{stress}$</td><td>4/25 (16%)</td><td>/ʃan.ka.ˈbu:t/ < /ˈʃa.ba.kah/ and /ʕan.ka.ˈbu:t/ (/CVC.CV.ˈCVVC/ < /ˈCV.CV.CVC/ and /CVC.CV.ˈCVVC)</td></tr>
</table>

Syllabic size of SWs	**Frequency**	**Syllabic size of blends to SWs**	**Freq-uency**	**(Non-)identity of stress in blends and SWs**	**Freq-uency**	**Examples**
$SW1^{\sigma} \neq SW2^{\sigma}$	**43/99(43%)**	**$Bl^{\sigma}=SW1^{\sigma}$**	**18/43 (42%)**	**$Bl^{stress}=SW1^{stress}$**	**15/18 (83%)**	/ˈdʒal.ʕad/ < /ˈdʒa.lad/ and /dʒaʕd/ (/ˈCVC.CVC/ < /ˈCV.CVC/ and /CVCC/)
				$Bl^{stress} \neq SW^{stress}$	3/18 (17%)	/ˈʃasˤ.lab/ < /ʃa.ˈdiːd/ and /sˤalb/ (/ˈCVC.CVC/ < /CV.ˈCVVC/ and /CVCC/)
		$Bl^{\sigma}=SW2^{\sigma}$	**17/43 (40%)**	**$Bl^{stress}=SW2^{stress}$**	**12/17 (71%)**	/ˈqaʃ.ʕam/ < /qaʃʕ/ and /ˈqa.dim/ (/ˈCVC.CVC/ < /CVCC/ and /ˈCV.CVC/)
				$Bl^{stress} \neq SW^{stress}$	5/17 (29%)	/ˈdar.bax/ < /daːr/ and /batˤ.ˈtˤiːx/ (/ˈCVC.CVC/ < /CVVC/ and /CVC.ˈCVVC/)
		$Bl^{\sigma} \neq SW^{\sigma}$	**8/43 (19%)**	**$Bl^{stress} \neq SW^{stress}$**	**8/8 (100%)**	/ʃa.ˈqaħ.tˤab/ < /ʃaqq/ and /ˈħa.tˤab/ (/CV.ˈCVC.CVC/ < /CVCC/ and /ˈCV.CVC/)
Total	**99**					

The results show several preferences for the stress patterns of established Arabic blends. Two preferences can be observed within the dataset with source words that have identical syllabic sizes and two preferences concern source words that have different syllabic sizes.

When both source words have identical syllabic sizes, there is a preference for the blends that have a syllabic size different from either source word to have also a stress pattern that is different from that of either source word, and a preference for the blends that have a syllabic size that is identical to that of both source words to have a stress pattern that is also identical to that of both source words. An example blend illustrating the first preference is /ʔa.ˈnar.kaz/ "egocentric" < /ˈʔa.naː/ "ego" and /ˈmar.kaz/

"centre". In total, 31/31 (100%) of the relevant blends are like this. An example blend illustrating the second preference is /ˈkar.bal/ "laxity in legs" < /ˈka.bal/ "shackle" and /ˈra.bal/ "fleshy". In total, 12/25 (48%) of the relevant blends are like this. When the source words have different syllabic sizes, there is firstly a clear preference for the blends that have a syllabic size that is identical to that of either source word to have also a stress pattern that is identical to that of this source word. Example blends illustrating this preference are /ˈdʒal.ʕad/ "stern" < /ˈdʒa.lad/ "fortitude" and /dʒaʕd/ "fuzzy", and /ˈqaʃ.ʕam/ "aged" < /qaʃʕ/ "dry skin" and /ˈqa.dim/ "become old". In total, 27/35 (77%) of the relevant blends are like this, with 15/18 (83%) of the blends that have an identical syllabic size to that of SW1 to also have an identical stress pattern as that of this SW, and with 12/17 (71%) of the blends that have an identical syllabic size to that of SW2 to have an identical stress pattern as that of this SW. Secondly, the blends that have a syllabic size different from that of both source words tend to have also a stress pattern that is different from that of both source words. An example blend illustrating this preference is /ʃa.ˈqaħ.tˤab/ "splitting wood" < /ʃaqq/ "split" and /ˈħa.tˤab/ "wood". In total, 8/8 (100%) of the relevant blends are like this.

When considering the preferences based on the (non-)identity of stress position in blends and SWs shown in column 5 of Table 5.12 above and without referring to the syllabic size of both source words shown in column 1 of the same table, or the syllabic size of blends to SWs shown in column 3 of the same table, the results also support this tendency.

Table 5.13 below displays the overall results regarding the stress patterns of established blends.

Table 5.13: (Non-)identity of stress patterns of established blends

Stress patterns of blends and SWs	**Frequency**
$Bl^{stress}{\neq}SW^{stress}$	**52 (53%)**
$Bl^{stress}{=}SW1^{stress}$	19 (19%)
$Bl^{stress}{=}SW2^{stress}$	16 (16%)
$Bl^{stress}{=}SW^{stress}$	12 (12%)
Total	**99**
Average frequency	**24.75**

The data clearly show that the most frequent pattern is for blends to have a stress pattern that is different from that of either source word.

5.2.4. Summary of Tendencies for Forming Established Arabic Blends

This section summarises the findings for the tendencies related to the three features of cut-off points in source words, proportional contributions from source words to blends, and stress patterns of blends in the compiled established Arabic blends.

It is generally the case that source words of the established Arabic blends have the cut-off points at a phonological joint, specifically at word boundaries or between the onset and nucleus of the 2nd syllable of a source word. But there is also a substantial number of blends that have a source word with a cut-off point inside a coda. These tendencies are similar to the ones identified for the cut-off point in the source words of English blends. Cut-off points in source words tend to occur at phonological boundaries, either between syllabic constituents or at syllabic boundaries, except that in English, a cut-off point inside syllabic constituents is rarely found.

Regarding the proportional contributions from source words to blends, the general tendency for source words of identical root length is to contribute equal root proportions to the blend, and for the greater phonemic proportional contribution to come from the second source word, with a high preference for the longer source word to be that contributor. Concerning the first part of the tendency, Arabic blends are similar to English blends in that when they have source words of identical sizes, they tend to contribute equal proportions to the blend; whereas, when they have different sizes, in English, it is generally the case that the greater proportional contribution comes from the shorter source word, but in Arabic, the greater proportional contribution comes from the longer source word.

Regarding the stress patterns of blends, firstly, it is generally the case for blends whose syllabic sizes are different from that of either source word to also have a stress pattern that is different from their stress patterns, especially when the source words themselves have different syllabic sizes. But when the blend has a syllabic size identical to that of either source word, there is a tendency for the blend to have a stress pattern identical to that of this source word.

These findings reflect some similarity between Arabic blends and English blends as to stress assignment. It is generally the case that the stressed syllable of the English blend corresponds to that of one of the source words (Bergström 1906, 46); (Bat-El and Cohen 2012, 193), which is usually the longer source word (Cannon 1986, 746), especially when it is the second source word (Gries 2004a, 426). The discussion turns now to the examination and analysis of the novel invented blends collected through a questionnaire and a survey.

5.3. Analysis and Discussion of Novel Invented Arabic Blends in the Light of English Blending Tendencies

This section presents the analysis of the novel invented Arabic blends compiled through the survey and experiment. In this section too, the three major features and their related tendencies are examined in the analysis of these novel invented Arabic blends.

Two minor factors to be considered will be the position of the source words in the word pair (as SW1 or SW2), and the size of the source words measured in terms of the number of syllables.

As discussed in section 2.3.3, of the three kinds of responses given in the survey—undiacritised, partially diacritised, and fully diacritised blends—the first two are not ideal for examination of cut-off points in the source words because the lack of diacritisation causes uncertainty about the shape of the intended forms and the possible location of cut-off points within them. Hence, in the analysis that follows, only the fully diacritised responses in the survey and the fully vowelised responses in the experiment are included. These represent a total of 59 responses from the survey and 503 responses from the experiment.

The following section discusses the cut-off points in source words, starting with the results from the survey (section 5.3.1.1) followed by the results from the experiment (section 5.3.1.2). For each section, six aspects related to the cut-off point are examined: a) combinations of cut-off points, b) types of fusion at split points, c) location of fracto-lexemes in each source word separately, d) preferences for the location of the cut-off point in all of SW1s and all SW2s separately, e) locations of cut-off points in source words in general, and f) the relation between the position of the cut-off point and the size of the source word. Section 5.3.1.3 concludes with a summary of the results and findings of the data from the survey and the experiment regarding cut-off points.

The description of the proportional contributions from source words to blends is given in section 5.3.2. The discussion of the tendencies for proportional contributions in blends from the survey are given in section 5.3.2.1, and those in blends from the experiment in section 5.3.2.2. Section 5.3.2.3 concludes with a summary of the results and findings of the data from the survey and the experiment regarding this feature.

The stress patterns of blends and how they are affected by the stress patterns of the source words are examined in section 5.3.3. The discussion of the tendencies for stress patterns of blends from the survey are given in section 5.3.3.1, and those in blends from the experiment are given in section 5.3.3.2. Section 5.3.3.3 concludes with a summary of the results and findings of the data from the survey and the experiment regarding stress patterns of blends.

5.3.1. Cut-off Points in Source Words

It should be noted that there are some responses in the dataset that, after being phonemically transcribed, show what appear to be multiple cut-off points in one or both of the source words. These cases are not considered in examining this feature. In data collection, the stimuli were graphemically presented to the informants, and this means that responses with source words having multiple cut-off points are simply formed based on a non-sequential selection of some graphemes from the source words while ignoring the diacritics that represent short vowels. To form their blends, the informants joined these graphemes together while, when necessary and especially to facilitate pronunciation, adding new short vowels that are not found in either one of the source words.

Examples from the survey of such blends having multiple cut-off points in either one or both of the source words include /ma.ðab/ given as a response to the word pair /m|a:s/ "diamond" and /ða.|ha|b/ "gold", where the second source word has two cut-off points; and /xa̲.ja:.tˤu̲m/ given as a response to the word pair /x|i.|ja:|r/ "cucumber" and /tˤa.m|a:.tˤ|i|m/ "tomato", where each source word has three cut-off points with two new short vowels added to the contributed fracto-lexemes: /a/ is added to the fracto-lexemes from the first source word, and /u/ is added to the contributed fracto-lexeme from the second source word.

Examples from the experiment of blends having multiple cut-off points in either one or both of the source words include /dʒul.ban/ given as a response to the word pair /dʒu|bn/ "cheese" and /l|a.|ban/ "yoghurt", where the second source word has two cut-off points; and /ma.da:ʔ/ given as a response to the word pair /m|a:ʔ/ "water" and /d|a.w|a:ʔ/ "medication", where the second source word has two cut-off points.

Of the 59 fully diacritised responses from the survey, only 6 had multiple cut-off points in their source words, hence leaving 53 responses from the survey. Of the 503 fully vowelised responses in the experiment, 87 had multiple cut-off points in their source words; hence leaving 416 responses from the experiment.

The discussion that follows concerning the Arabic data is presented in light of the tendencies (as outlined in section 3.5.1) for English blend formation based on the location of the cut-off point in the source words. In the remainder of this section, all examples from both survey and experiment datasets are given with the vertical bar | indicating a cut-off point in the source words.

The tendency identified based on the cut-off points in the source words of English blends indicates that there is a preference for the cut-off point to occur at a word or syllable boundary or a within-syllable break. When the cut-off point occurs at a within-syllable break, the preference is for it to occur mostly between the onset and nucleus of that syllable, in a way where an onset from the first source word is combined with a rime from the second (Kubozono 1990); (Kelly 1998, 585); (Gries 2004b, 648).

The tendencies identified in English distinguish between two syllabic structures for blends: monosyllabic and polysyllabic. It has been determined that, in monosyllabic blends, it is mostly the case that one onset from the first source word adjoins to a rime from the second source word. Polysyllabic blends tend to have a syllable from the first source word adjoining to a syllable from the second source word, or an onset from one syllable in the first source word adjoining to the rime of the syllable corresponding in its position to that in the second source word.

In examining the data, cases of overlap are considered while identifying cut-off points in the source words. Such responses are analysed based on the two modes of analyses: one without showing overlap, and another showing overlap. An example is the blend /dʒubz/ < /dʒubn/ "cheese" and /xubz/ "bread" that can be analysed once according to the first mode of analysis as having parts of the fracto-lexemes common to both source words, as in /dʒubz/ < /**dʒ*ub***|n/ and /x|***ub*z**/, with the parts in bold italics being the overlapping segments, and another according to the second mode of analysis as having no shared elements from the source words, as in /dʒubz/ < /**dʒu|**bn/ and /xu|**bz**/.

These two modes are implemented based on the feedback from the informants (as discussed in section 2.2.5). The informants tend to cut what they call "graphemic units" from the source words. This technique mostly reflects a cut-off point between syllabic constituents, usually between the nucleus and coda, or a syllable or at word boundaries.

On the other hand, when analysing the blends as having overlapping segments, the fusion extends over more than one point, hence causing the cut-off point to occur, in some cases, within syllabic constituents. For instance, in cases of blends like /dʒubz/ < /**dʒ*ub***|n/ and /x|***ub*z**/ with an overlapping segment of more than one element (/*ub*/), although the fusion starts at the sound /*u*/ of the first source word /**dʒ*ub***|n/, the cut-off point does not occur after this sound, but rather after the last point of fusion, which is the sound /*b*/. Hence, cut-off points can occur sometimes inside a syllabic constituent, especially when the fusion includes overlapping segments across the phonological joints as is the case with the blend /dʒubz/. Accordingly, both techniques for identifying cut-off points in source words are considered in the analysis of the responses in datasets.

The discussion starts by examining the cut-off points in the source words of the 53 responses to the survey (106 source words) and the 416 responses to the experiment (832 source words) separately, and then it considers the cut-off points in the whole dataset of 469 responses (938 source words).

To identify the most frequent patterns for cut-off points in the source words, the mean average frequencies of each pattern are calculated. Any patterns related to cut-off points in the source words that are located above the mean average frequency represent the most frequent ones.

For each dataset, the results are analysed based on two factors: locations of the fracto-lexemes in the source words and the size of the source words. These factors help examine several related sub-features of the feature of cut-off points, which are: (1) the combinations of cut-off points in the source words, (2) the types of fusion at split points in the blends, (3) the patterns of fracto-lexemes, (4) preferences for the location of cut-off points in the source words while referring to their position in the blend, (5) preferences for the location of cut-off points in all of the source words of each dataset, and (6) preferences for the location of cut-off points in source words while referring to their size. The combinations of cut-off points and the position of the source words are displayed as represented in the novel blends.

5.3.1.1. Tendencies for Cut-off Points in Responses from the Survey

The responses to the survey include cases of overlap where the blend contains elements that are found in both source words. These represent 24 blends out of the 53 that are subject to analysis of the feature of the cut-off point. The data are analysed based on the two modes of analyses, where the first mode of analysis does not show overlap and the second mode of analysis does.

5.3.1.1.i. Combinations of cut-off points in the source words

Table 5.14 below displays the results for the combinations of cut-off points in the source words of responses to the survey without showing overlap.

Table 5.14: Combinations of cut-off points in SWs of responses to the survey (MoA1)

Combinations of cut-off points in SWs (MoA1)	Examples	Frequency of responses reflecting the combination
nucleus-coda + nucleus-coda	/dʒubz/ < /**dʒu**|bn/ and /xu|**bz**/	**10 (19%)**
nucleus-coda + Syl. boundary	/dʒu.ban/ < /**dʒu**|bn/ and /la.|**ban**/	**10 (19%)**
onset-nucleus (2nd Syl.) + onset-nucleus	/ða.ha:s/ < /**ða.h**|ab/ and /m|**a:s**/	**5 (9%)**
onset-nucleus + onset-nucleus (1st Syl.)	/dʒa.ban/ < /**dʒ**|ubn/ and /l|**a.ban**/	**5 (9%)**
Syl. boundary + word boundary	/da.ma:ʔ/ < /**da**.|wa:ʔ/ and /**ma:ʔ**/	**4 (8%)**
Syl. boundary + nucleus-coda	/lamr/ < /**la**.|ban/ and /ta|**mr**/	**3 (6%)**
inside coda + onset-nucleus (1st Syl.)	/dʒubl/ < /**dʒub**|n/ and /**l**|a.ban/	2 (4%)
nucleus-coda (2nd Syl.) + Syl. boundary (2nd Syl.|3rd Syl.)	/xi.ja:.tˤim/ < /**xi.ja:**|r/ and /tˤa.ma:.|**tˤim**/	2 (4%)
nucleus-coda (2nd Syl.) + word boundary	/ða.ha.ma:s/ < /**ða.ha**|b/ and /**ma:s**/	2 (4%)
word boundary + onset-nucleus (2nd Syl.)	/zaj.tar/ < /**zajt**/ and /zaʕ.t|**ar**/	2 (4%)
inside coda + Syl. boundary	/tam.ban/ < /**tam**|r/ and /la.|**ban**/	1 (2%)
nucleus-coda (3rd Syl.) + word boundary	/tˤa.ma:.tˤi.xi.ja:r/ < /**tˤa.ma:.tˤi**|m/ and /**xi.ja:r**/	1 (2%)
onset-nucleus (1st Syl.) + onset-nucleus	/lubn/ < /**l**|a.ban/ and /dʒ|**ubn**/	1 (2%)
Syl. boundary (2nd Syl.|3rd Syl.) + nucleus-coda (2nd Syl.)	/tˤa.ma:r/ < /**tˤa.ma:**.|tˤim/ and /xi.ja:|**r**/	1 (2%)
Syl. boundary (2nd Syl.|3rd Syl.) + Syl. boundary	/tˤa.ma:.ja:r/ < /**tˤa.ma:**.|tˤim/ and /xi.|**ja:r**/	1 (2%)
Syl. boundary + Syl. boundary (1st Syl.|2nd Syl.)	/xi.ma:.tˤim/ < /**xi**.|ja:r/ and /tˤa.|**ma:.tˤim**/	1 (2%)
word boundary + nucleus-coda	/la.ban.mu̲r/* < /**la.ban**/ and /ta|**mr**/	1 (2%)
word boundary + onset-nucleus	/ħa.li:.ba:j/ < /**ħa.li:b**/ and /ʃ|**a:j**/	1 (2%)
Total		**53 responses**
Average frequency		**3**

*This blend involves using a new diacritic which is indicated by the underlined vowel in the blend. Such cases are briefly considered in a separate analysis.

The table shows that the most frequent combinations of cut-off points in source words in responses from the survey are:

- between the nucleus and coda + between the nucleus and coda;
- between the nucleus and coda + at a syllable boundary;
- between the onset and nucleus of the 2nd syllable of the source word + between the onset and nucleus;
- between the onset and nucleus + between the onset and nucleus of the 1st syllable of the source word;
- at a syllable boundary + at word boundaries; and
- at a syllable boundary + between the nucleus and coda.

Table 5.15 below displays the combinations of cut-off points in the source words of responses to the survey based on the second mode of analysis, where overlapping segments are shown in the source words.

Table 5.15: Combinations of cut-off points in SWs of responses to the survey (MoA2)

Combinations of cut-off points in SWs (MoA2)	**Examples**	**Frequency of responses reflecting the combinations**
inside coda + onset-nucleus	/dʒ***ub***z/ < **dʒ*ub***|n/ and /x|***ubz***/	**12 (23%)**
inside coda + Syl. boundary	/dʒu.***b***an/ < /**dʒu*b***|n/ and /la.|***b*an**/	**5 (9%)**
onset-nucleus (2nd Syl.) + onset-nucleus	/ða.ha:s/ < /**ða.h**|ab/ and /m|**a:s**/	**5 (9%)**
onset-nucleus + onset-nucleus (1st Syl.)	/dʒa.ban/ < /**dʒ**|ubn/ and /l|**a.ban**/	**5 (9%)**
nucleus-coda + Syl. boundary	/ma:.hab/ < /**ma:**|s/ and /ða.|**hab**/	**4 (8%)**
Syl. boundary + word boundary	/da.ma:ʔ/ < /**da.**|wa:ʔ/ and /**ma:ʔ**/	**4 (8%)**
word boundary + Syl. boundary	/zaj.*t*ar/ < /**zaj*t***/ and /zaʕ.|***t*ar**/	2 (4%)
nucleus-coda (2nd Syl.) + word boundary	/ða.ha.ma:s/ < /**ða.ha**|b/ and /**ma:s**/	2 (4%)
nucleus-coda (2nd Syl.) + onset-nucleus (2nd Syl.)	/xi.ja:.tˤim/ < /**xi.j*a:***|r/ and /tˤa.m|***a:*.tˤim**/	2 (4%)
nucleus-coda + onset-nucleus (1st Syl.)	/ta.ban/ < /**t*a***|mr/ and /l|***a*.ban**/	2 (4%)
Syl. boundary + onset-nucleus	/lamr/ < /**l*a***.|ban/ and /t|***a*mr**/	2 (4%)

<table>
<tr><th>Combinations of cut-off points in SWs (MoA2)</th><th>Examples</th><th>Frequency of responses reflecting the combinations</th></tr>
<tr><td>onset-nucleus (1st Syl.) + onset-nucleus</td><td>/lubn/ < /l|a.ban/ and /dʒ|ubn/</td><td>1 (2%)</td></tr>
<tr><td>word boundary + nucleus-coda</td><td>/la.ban.mu̲r/* < /la.ban/ and /ta|mr/</td><td>1 (2%)</td></tr>
<tr><td>word boundary + onset-nucleus</td><td>/ħa.li:.ba:j/ < /ħa.li:b/ and /ʃ|a:j/</td><td>1 (2%)</td></tr>
<tr><td>nucleus-coda (3rd Syl.) + word boundary</td><td>/tˤa.ma:.tˤi.xi.ja:r/ < /tˤa.ma:.tˤi|m/ and /xi.ja:r/</td><td>1 (2%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.) + nucleus-coda</td><td>/la.bun/ < /la.b|an/ and /dʒu|bn/</td><td>1 (2%)</td></tr>
<tr><td>Syl. boundary (2nd Syl.|3rd Syl.) + onset-nucleus (2nd Syl.)</td><td>/tˤa.ma:r/ < /tˤa.ma:.|tˤim/ and /xi.j|a:r/</td><td>1 (2%)</td></tr>
<tr><td>Syl. boundary (2nd Syl.|3rd Syl.) + Syl. boundary</td><td>/tˤa.ma:.ja:r/ < /tˤa.ma:.|tˤim/ and /xi.|ja:r/</td><td>1 (2%)</td></tr>
<tr><td>Syl. boundary + Syl. boundary (1st Syl.|2nd Syl.)</td><td>/xi.ma:.tˤim/ < /xi.|ja:r/ and /tˤa.|ma:.tˤim/</td><td>1 (2%)</td></tr>
<tr><td>Total</td><td></td><td>53 responses</td></tr>
<tr><td>Average frequency</td><td></td><td>3</td></tr>
</table>

*A novel blend with a new diacritic which is indicated by the underlined vowel.

The table shows that the most frequent combinations of cut-off points in source words of responses to the survey are:

- inside the coda + between the onset and nucleus;
- inside the coda + at a syllable boundary;
- between the onset and nucleus of the 2nd syllable of the source word + between the onset and nucleus;
- between the onset and nucleus + between the onset and nucleus of the 1st syllable of the source word;
- between the nucleus and coda + at a syllable boundary; and
- at a syllable boundary + at word boundaries.

The results show that when the overlapping segments are shared by both source words, two of these combinations would then have the cut-off point in the first source word within a syllabic constituent, namely inside the coda.

Comparing the most frequent preferences for the data from the survey in Table 5.14 and Table 5.15, we see that the combinations in the first mode of analysis that include cut-off points at phonological joints either disappear in the second mode of analysis, as is the case, for instance, with the combination between the nucleus and coda + between the nucleus and coda or they become less frequent in the second mode of analysis, as is the case, for instance, with the combination between the nucleus and coda + syllable boundary of the first mode of analysis. Table 5.16 below shows a comparison of the most frequent patterns in both modes of analyses for the combinations of cut-off points in responses from the survey based on both modes of analyses. The combinations are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.16: Comparison between the most frequent combinations of cut-off points in SWs of responses to the survey based on MoA1 and MoA2

Frequent combinations of cut-off points in SWs (MoA1)	Frequent combinations of cut-off points in SWs (MoA2)
nucleus-coda + nucleus-coda	inside coda + onset-nucleus
nucleus-coda + Syl. boundary	inside coda + Syl. boundary
onset-nucleus (2nd Syl.) + onset-nucleus	**onset-nucleus (2nd Syl.) + onset-nucleus**
onset-nucleus + onset-nucleus (1st Syl.)	**onset-nucleus + onset-nucleus (1st Syl.)**
Syl. boundary + word boundary	**nucleus-coda + Syl. boundary**
Syl. boundary + nucleus-coda	**Syl. boundary + word boundary**

This comparison also shows that, in both modes of analyses, four combinations come out as having high frequencies, which are:

- between the nucleus and coda + at a syllable boundary;
- between the onset and nucleus of the 2nd syllable of the source word + between the onset and nucleus;
- between the onset and nucleus + between the onset and nucleus of the 1st syllable of the source word; and
- at a syllable boundary + at word boundaries.

5.3.1.1.ii. Types of fusion at the split points in blends

The different combinations of cut-off points in the source words cause variation in the types of fusion found at split points in the blends. This variation will be examined here in responses from the survey based on the two modes of analyses to find out if there is a change in the patterns of types of fusion at split points in the blends along with any changes in the locations of cut-off points in the source words.

Table 5.17 below displays the various types of fusion at the split points in blends in the survey based on the first mode of analysis.

Table 5.17: Types of fusion at the split points in blends from the survey (MoA1)

Types of fusion at split points (MoA1)	Frequency	Examples	Source words with cut-off points
resyllabification	**27 (51%)**	/dʒu.ban/	/**dʒu**|bn/ and /la.|**ban**/
coda replacement	**8 (15%)**	/dʒubz/	/**dʒu**|bn/ and /xu|**bz**/
syllabic maintenance	6 (11%)	/da.ma:ʔ/	/**da**.|wa:ʔ/ and /**ma:ʔ**/
onset replacement (1st Syl.)	5 (9%)	/dʒa.ban/	/**dʒ**|ubn/ and /l|**a.ban**/
coda replacement (2nd Syl.)	5 (9%)	/ða.ha:s/	/**ða.h**|ab/ and /m|**a:s**/
partial coda replacement	1 (2%)	/dʒubl/	/**dʒub**|n/ and /**l**|a.ban/
onset replacement	1 (2%)	/lubn/	/**l**|a.ban/ and /dʒ|**ubn**/
Total	**53 responses**		
Average frequency	**8**		

The table shows that the most frequent patterns of the types of fusion at split points in the blends are resyllabification and coda replacement.

Table 5.18 below shows the various types of fusion at the split points in blends from the survey based on the second mode of analysis.

Table 5.18: Types of fusion at the split points in blends from the survey (MoA2)

Type of fusion at split points (MoA2)	Frequency	Examples	Source words with cut-off points
resyllabification	**21 (39%)**	/dʒu.ban/	/**dʒu*b***|n/ and /la.|***b*an**/
onset replacement	**11 (21%)**	/dʒubz/	/**dʒ*ub***|n/ and /x|***ub*z**/
syllabic maintenance	8 (15%)	/da.ma:ʔ/	/**da.**|wa:ʔ/ and /**ma:ʔ**/
onset replacement (1st Syl.)	7 (13%)	/dʒa.ban/	/**dʒ**|ubn/ and /l|**a.ban**/
rime replacement (2nd Syl.)	5 (9%)	/ða.ha:s/	/**ða.h**|ab/ and /m|**a:s**/
partial coda replacement	1 (2%)	/dʒubl/	/**dʒub**|n/ and /**l**|a.ban/
Total	**53 responses**		
Average frequency	**9**		

The table shows that the most frequent patterns of the types of fusion at split points in the blends are resyllabification and onset replacement.

A comparison of the patterns of the types of fusion based on the two modes of analyses is given in Table 5.19 below. The most frequent preference for the type of fusion based on both modes of analyses is resyllabification. The next most frequent preference for the type of fusion in blends of the survey based on the first mode of analysis is coda replacement; whereas based on the second mode of analysis it is onset replacement. The types of fusion are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.19: Comparison of the most frequent types of fusion at the split points in responses from the survey based on MoA1 and MoA2

Types of fusion at split points (MoA1)	Type of fusion at split points (MoA2)
resyllabification	resyllabification
coda replacement	onset replacement

5.3.1.1.iii. Patterns of fracto-lexemes

After examining the combinations of cut-off points in source words of responses to the survey in section 5.3.1.1.i. based on the two different modes of analyses, it is found that the results for the patterns of fracto-lexemes are the same based on both modes of analyses.

The patterns of fracto-lexemes will again be analysed in terms of the AB+CD structure proposed by Plag (2003) for the patterns of analysis of blends in English, in addition to being displayed following the pattern adopted in this book, as displayed in Table 5.3.

Table 5.20 below displays the frequencies of the patterns of fracto-lexemes in responses from the survey.

Table 5.20: Patterns of fracto-lexemes in SWs of responses to the survey (MoA1/MoA2)

<table>
<tr><th>Locations of fracto-lexemes in SWs (MoA1/MoA2)</th><th>Patterns of fracto-lexemes</th><th>Examples</th><th>Frequency of responses</th></tr>
<tr><td>initial + final</td><td>AB+CD=AD</td><td>/dʒubz/ < /dʒu|bn/ and /xu|bz/
(or /dʒubz/ < /dʒub|n/ and /x|ubz/)</td><td>40 (75%)</td></tr>
<tr><td>initial + full</td><td>AB+CD=AW</td><td>/da.ma:ʔ/ < /da.|wa:ʔ/ and /ma:ʔ/</td><td>7 (13%)</td></tr>
<tr><td>full + final</td><td>AB+CD=WD</td><td>/zaj.tar/ < /zajt/ and /zaʕ.t|ar/</td><td>4 (8%)</td></tr>
<tr><td>initial + initial</td><td>AB+CD=AC</td><td>/dʒubl/ < /dʒub|n/ and /l|a.ban/</td><td>2 (4%)</td></tr>
<tr><td>Total</td><td></td><td></td><td>53 responses</td></tr>
<tr><td>Average frequency</td><td></td><td></td><td>13</td></tr>
</table>

The table also shows four patterns for the locations of the fracto-lexemes in the source words of the blends, with the combination initial + final (i.e. pattern AD) as the most frequent preference.

When considering the locations of the fracto-lexemes in the source words, the results show that, for most of the responses, it is the fore part from the first source word and the hind part from the second source word that join to form the blend.

5.3.1.1.iv. Locations of cut-off points in source words while referring to their position in the blend

The combinations of cut-off points also reflect the preferences for the cut-off point in each source word of the word pair; that is, the preference for the cut-off point in the first source word and that in the second source word. 5.3.1.1.i below displays the locations of cut-off points in the first and second source words separately in the responses to the survey based on the first mode of analysis.

Table 5.21: Locations of cut-off points in SW1s and SW2s in responses from the survey (MoA1)

The cut-off points in all of SW1s (MoA1)	SWs	Freq-uency	The cut-off point in all of SW2s (MoA1)	SWs	Freq-uency
nucleus-coda	/**dʒu**|bn/	**20 (38%)**	**nucleus-coda**	/xu|**bz**/	**14 (26%)**
Syl. boundary	/**da**.|wa:ʔ/	**8 (15%)**	**Syl. boundary**	/la.|**ban**/	**12 (23%)**
onset-nucleus (2nd Syl.)	/**ða.h**|ab/	5 (9%)	**word boundary**	/**ma:ʔ**/	**7 (13%)**
onset-nucleus	/**dʒ**|ubn/	5 (9%)	**onset-nucleus (1st Syl.)**	/l|**a.ban**/	**7 (13%)**
word boundary	/**zajt**/	4 (8%)	**onset-nucleus**	/m|**a:s**/	**7 (13%)**
nucleus-coda (2nd Syl.)	/**xi.ja:**|r/	4 (8%)	Syl. boundary (2nd Syl.|3rd Syl.)	/tˤa.ma:.|**tˤim**/	2 (4%)
inside coda	/**tam**|r/	3 (6%)	onset-nucleus (2nd Syl.)	/zaʕ.t|**ar**/	2 (4%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:**.|tˤim/	2 (4%)	Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	1 (2%)
onset-nucleus (1st Syl.)	/**l**|a.ban/	1 (2%)	nucleus-coda (2nd Syl.)	/xi.ja:|**r**/	1 (2%)
nucleus-coda (3rd Syl.)	/**tˤa.ma:.tˤi**|m/	1 (2%)	-	-	-
Total		**53 SWs**	**Total**		**53 SWs**
Average frequency		**5**	**Average frequency**		**6**

The table shows that the most frequent locations of cut-off points in the first source word are between the nucleus and coda and at a syllable boundary. For the cut-off point in the second source word, there is somewhat more variability. The table shows that the most frequent locations are:

- between the nucleus and coda;
- at a syllable boundary;
- at word boundaries;
- between the onset and nucleus of the 1st syllable of the source word; and
- between the onset and nucleus.

Table 5.22 below displays the locations of cut-off points in the first source word and the second source word of the responses to the survey based on the second mode of analysis.

Table 5.22: Locations of cut-off points in SW1s and SW2s in responses from the survey (MoA2)

<table>
<tr><th>The cut-off points in all of SW1s (MoA2)</th><th>SWs</th><th>Freq-uency</th><th>The cut-off points in all of SW2s (MoA2)</th><th>SWs</th><th>Freq-uency</th></tr>
<tr><td>inside coda</td><td>/dʒub|n/</td><td>17 (32%)</td><td>onset-nucleus</td><td>/x|ubz/</td><td>21 (40%)</td></tr>
<tr><td>Syl. boundary</td><td>/da.|waːʔ/</td><td>7 (13%)</td><td>Syl. boundary</td><td>/zaʕ.|tar/</td><td>12 (23%)</td></tr>
<tr><td>nucleus-coda</td><td>/maː|s/</td><td>6 (11%)</td><td>word boundary</td><td>/maːʔ/</td><td>7 (13%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.)</td><td>/la.b|an/</td><td>6 (11%)</td><td>onset-nucleus (1st Syl.)</td><td>/l|a.ban/</td><td>7 (13%)</td></tr>
<tr><td>onset-nucleus</td><td>/dʒ|ubn/</td><td>5 (9%)</td><td>onset-nucleus (2nd Syl.)</td><td>/tˤam|aːtˤim/</td><td>3 (6%)</td></tr>
<tr><td>word boundary</td><td>/la.ban/</td><td>4 (8%)</td><td>nucleus-coda</td><td>/ta|mr/</td><td>2 (4%)</td></tr>
<tr><td>nucleus-coda (2nd Syl.)</td><td>/xi.jaː|r/</td><td>4 (8%)</td><td>Syl. boundary (1st Syl.|2nd Syl.)</td><td>/tˤa.|maː.tˤim/</td><td>1 (2%)</td></tr>
<tr><td>Syl. boundary (2nd Syl.|3rd Syl.)</td><td>/tˤa.maː.|tˤim/</td><td>2 (4%)</td><td>-</td><td></td><td>-</td></tr>
</table>

The cut-off points in all of SW1s (MoA2)	**SWs**	**Freq-uency**	**The cut-off points in all of SW2s (MoA2)**	**SWs**	**Freq-uency**
nucleus-coda (3rd Syl.)	/**tˤa.ma:.tˤi**|m/	1 (2%)	-		-
onset-nucleus (1st Syl.)	/**l**|a.ban/	1 (2%)	-		-
Total		**53 SWs**	**Total**		**53 SWs**
Average frequency		**5**	**Average frequency**		**8**

The table shows that the most frequent locations of the cut-off point in the first source word are:

- inside the coda;
- at a syllable boundary;
- between the nucleus and coda; and
- between the onset and nucleus of the 2nd syllable of the source word.

As to the cut-off point in the second source word, the table shows that the most frequent preferences are between the onset and nucleus and at a syllable boundary.

5.3.1.1.v. Locations of cut-off points in all of the source words of the responses

We can also consider the location of the cut-off points in all of SW1s and SW2s taken together, so disregarding the position of the source word in the blend.

Table 5.23 below displays the locations of cut-off points in all of the source words of the responses to the survey based on the first mode of analysis.

Table 5.23: Locations of cut-off points in all of SWs in responses to the survey (MoA1)

Cut-off points in all of SWs (MoA1)	SWs	Frequency
nucleus-coda	/**dʒu**|bn/	**34 (32%)**
Syl. boundary	/la.|**ban**/	**20 (19%)**
onset-nucleus	/m|**a:s**/	**12 (11%)**
word boundary	/**ma:ʔ**/	**11 (10%)**
onset-nucleus (1st Syl.)	/l|**a.ban**/	8 (8%)
onset-nucleus (2nd Syl.)	/**ða.h**|ab/	7 (7%)
nucleus-coda (2nd Syl.)	/**xi.ja:**|r/	5 (5%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:**.|tˤim/	4 (4%)
inside coda	/**tam**|r/	3 (3%)
nucleus-coda (3rd syllable)	/**tˤa.ma:.tˤi**|m/	1 (1%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	1 (1%)
Total		**106 SWs**
Average frequency		**10**

The table shows that the most frequent locations of cut-off points in all of the source words are:

- between the nucleus and coda;
- at a syllable boundary;
- between the onset and nucleus; and
- at word boundaries.

Table 5.24 below displays the locations of cut-off points in all of the source words of the responses to the survey based on the second mode of analysis.

Table 5.24: Locations of cut-off points in all of SWs of responses to the survey (MoA2)

<table>
<tr><th>Cut-off points in all of SWs (MoA2)</th><th>SWs</th><th>Frequency</th></tr>
<tr><td>onset-nucleus</td><td>/dʒ|ubn/</td><td>24 (23%)</td></tr>
<tr><td>Syl. boundary</td><td>/la.|ban/</td><td>19 (18%)</td></tr>
<tr><td>inside coda</td><td>/dʒub|n/</td><td>17 (16%)</td></tr>
<tr><td>word boundary</td><td>/ma:ʔ/</td><td>11 (10%)</td></tr>
<tr><td>onset-nucleus (1st Syl.)</td><td>/l|a.ban/</td><td>10 (9%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.)</td><td>/ða.h|ab/</td><td>9 (8%)</td></tr>
<tr><td>nucleus-coda</td><td>/ma:|s/</td><td>8 (8%)</td></tr>
<tr><td>nucleus-coda (2nd Syl.)</td><td>/xi.ja:|r/</td><td>4 (4%)</td></tr>
<tr><td>Syl. boundary (2nd Syl.|3rd Syl.)</td><td>/tˤa.ma:.|tˤim/</td><td>2 (2%)</td></tr>
<tr><td>Syl. boundary (1st Syl.|2nd Syl.)</td><td>/tˤa.|ma:.tˤim/</td><td>1 (1%)</td></tr>
<tr><td>nucleus-coda (3rd Syl.)</td><td>/tˤa.ma:.tˤi|m/</td><td>1 (1%)</td></tr>
<tr><td>Total</td><td></td><td>106 SWs</td></tr>
<tr><td>Average frequency</td><td></td><td>10</td></tr>
</table>

The table shows that the most frequent locations of cut-off points in all of the source words are:

- between the onset and nucleus;
- at a syllable boundary;
- inside the coda;
- at word boundaries; and
- between the onset and nucleus of the 1st syllable of the source word.

Comparing the most frequent patterns for cut-off points in all of the source words in Table 5.23 and Table 5.24, it can be seen that there are locations of cut-off points that are common to both modes of analyses. Table 5.25 below displays a comparison of the most frequent locations of cut-off points in all of the source words of responses to the survey based on both modes of analyses and following their order of frequency in Table 5.23 and Table 5.24. The locations of cut-off points are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.25: Comparison of the most frequent locations of cut-off points in all of SWs in responses to the survey based on MoA1 and MoA2

Cut-off points in all of SWs (MoA1)	Cut-off points in all of SWs (MoA2)
nucleus-coda	**onset-nucleus**
Syl. boundary	**Syl. boundary**
onset-nucleus	inside coda
word boundary	**word boundary**
-	onset-nucleus (1st Syl.)

The table shows that, based on both modes of analyses, three locations are commonly found, which are:

- between the onset and nucleus;
- at a syllable boundary; and
- at word boundaries.

The table also shows that the level of frequency for the locations of cut-off points based on the first mode of analysis differs from that based on the second mode of analysis and that there are locations that are common to one mode of analysis and not to the other, like the cut-off point inside the coda.

5.3.1.1.vi. Locations of cut-off points in source words while referring to their size

The results also show that there is a relationship between the cut-off point and the size of the source words. Although there is a general tendency for cut-off points to occur mostly at phonological joints, there is some variation in cut-off points in the source words in terms of the number of their syllables.

To examine the relationship between the cut-off point and the size of the source words and to determine if there is a difference in the results when considering cases with obvious single fusion points as opposed to cases of overlap, the results from both modes of analyses of responses to the survey are considered. The size of a source word is measured in terms of the number of its syllables as monosyllabic or polysyllabic.

Table 5.26 below displays the locations of cut-off points in source words as related to their size based on the first mode of analysis.

Table 5.26: Locations of cut-off points as related to the size of SWs in responses from the survey (MoA1)

Cut-off points in all of SWs (MoA1)	Monosyllabic SWs	Frequency and percentage of SWs out of subtotal
nucleus-coda	/**dʒu**|bn/	**34 (60%)**
onset-nucleus	/m|**a:s**/	12 (21%)
word boundary	/**ma:ʔ**/	8 (14%)
inside coda	/**tam**|r/	3 (5%)
	Subtotal	**57 SWs**
	Average frequency	**14**
	Polysyllabic SW	
Syl. boundary	/la.|**ban**/	**20 (41%)**
onset-nucleus (1st Syl.)	/l|**a.ban**/	**8 (16%)**
onset-nucleus (2nd Syl.)	/**ða.h**|ab/	**7 (14%)**
nucleus-coda (2nd Syl.)	/**xi.ja:**|r/	5 (10%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:**.|tˤim/	4 (8%)
word boundary	/**ħa.li:b**/	3 (6%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	1 (2%)
nucleus-coda (3rd syllable)	/**tˤa.ma:.tˤi**|m/	1 (2%)
	Subtotal	**49 SWs**
	Average frequency	**6**
Total		**106 SWs**

The table shows that the most frequent preference for the cut-off point in monosyllabic source words is between the nucleus and coda. For polysyllabic source words, the table shows that the most frequent locations of cut-off points are:

- at a syllable boundary;
- between the onset and nucleus of the 1st syllable of the source word; and
- between the onset and nucleus of the 2nd syllable of the source word.

Table 5.27 below displays the locations of cut-off points in source words as related to their size based on the second mode of analysis.

Table 5.27: Locations of cut-off points as related to the size of SWs in responses from the survey (MoA2)

Cut-off Point in SWs (MoA2)	Size of SWs	Frequency and percentage of SWs out of subtotal
	Monosyllabic SWs	
onset-nucleus	/t|**_a_mr**/	**24 (42%)**
inside coda	/**dʒ_ub_**|n/	**17 (30%)**
nucleus-coda	/**ma:**|s/	8 (14%)
word boundary	/**zaj_t_**/	8 (14%)
	Subtotal	**57 SWs**
	Average frequency	**14**
	Polysyllabic SWs	
Syl. boundary	/zaʕ.|**_t_ar**/	**19 (39%)**
onset-nucleus (1st Syl.)	/**l**|a.ban/	**10 (20%)**
onset-nucleus (2nd Syl.)	/**ða.h**|ab/	**9 (19%)**
nucleus-coda (2nd Syl.)	/**ħa.li:**|b/	4 (8%)
word boundary	/**xi.ja:r**/	3 (6%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.m_a:_**.|tˤim/	2 (4%)
nucleus-coda (3rd Syl.)	/**tˤa.ma:.tˤi**|m/	1 (2%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	1 (2%)
	Subtotal	**49 SWs**
	Average frequency	**6**
Total		**106 SWs**

The table shows that the most frequent locations of cut-off points in monosyllabic source words are between the onset and nucleus and inside the coda. For polysyllabic source words, the table shows that the most frequent locations of cut-off points are:

- at a syllable boundary;
- between the onset and nucleus of the 1st syllable of the source word; and
- between the onset and nucleus of the 2nd syllable of the source word.

Based on the results in Table 5.26 and Table 5.27, it is clear that there is a general tendency for the cut-off point to occur at syllabic joints or between syllabic constituents.

Table 5.28 below displays a comparison of the most frequent locations of cut-off points in all of the source words as related to their size based on the two modes of analyses. The locations of cut-off points are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.28: Comparison of the most frequent locations of cut-off points as related to the size of SWs in responses from the survey based on MoA1 and MoA2

The cut-off points in all of SWs (MoA1)	The cut-off Points in all of SWs (MoA2)
Monosyllabic SWs	**Monosyllabic SWs**
nucleus-coda	onset-nucleus
-	inside coda
Polysyllabic SWs	**Polysyllabic SW**
Syl. boundary	Syl. boundary
onset-nucleus (1st Syl.)	onset-nucleus (1st Syl.)
onset-nucleus (2nd Syl.)	onset-nucleus (2nd Syl.)

The comparison in this table shows that, based on both modes of analyses, the general tendency for monosyllabic source words is to have the cut-off point at a phonological joint, usually between nucleus and coda or between onset and nucleus. In the second mode of analysis, the least preferred option in monosyllabic source words is for it to occur within a syllabic constituent, namely inside the coda. Meanwhile, for polysyllabic source words and based on both modes of analyses, with a comparable ordering of preferences, there is a general tendency for the cut-off points to occur at phonological joints, and mostly at a syllable boundary or between syllabic constituents, usually, between the onset and nucleus.

5.3.1.2. Tendencies for Cut-off Points in Responses from the Experiment

After examining the responses to the survey as related to cut-off points in the source words based on the two different modes of analyses, the responses to the experiment were also examined in the same way. Cases of blends with overlap contain elements that are found in source words. These represent 151 out of 416. The data are analysed based on the two modes of analyses, where the first mode of analysis does not show the overlap and the second mode of analysis does.

5.3.1.2.i. Combinations of cut-off points in the source words

Table 5.29 below displays the results for the combinations of cut-off points in the source words of responses to the experiment. The combinations in bold are the most frequent.

Table 5.29: Combinations of cut-off points in SWs in responses to the experiment (MoA1)

<table>
<tr><th>Combinations of cut-off points in source words (without overlap MoA1)</th><th>Examples</th><th>Frequency of responses reflecting this combination</th></tr>
<tr><td>nucleus-coda + Syl. boundary</td><td>/ma:.hab/ < /ma:|s/ and /ða.|hab/</td><td>53 (13%)</td></tr>
<tr><td>nucleus-coda + nucleus-coda</td><td>/dʒubz/ < /dʒu|bn/ and /xu|bz/</td><td>48 (12%)</td></tr>
<tr><td>onset-nucleus + onset-nucleus (1st Syl.)</td><td>/ʃa.li:b/ < /ʃ|a:j/ and /ħ|a.li:b/</td><td>39 (9%)</td></tr>
<tr><td>Syl. boundary + word boundary</td><td>/da.ma:ʔ/ < /da.|wa:ʔ/ and /ma:ʔ/</td><td>34 (8%)</td></tr>
<tr><td>Syl. boundary + nucleus-coda</td><td>/labn/ < /la.|ban/ and /dʒu|bn/</td><td>28 (7%)</td></tr>
<tr><td>word boundary + onset-nucleus (2nd Syl.)</td><td>/zaj.tar/ < /zajt/ and /zaʕ.t|ar/</td><td>23 (6%)</td></tr>
<tr><td>Syl. boundary + Syl. boundary</td><td>/du:.na:r/ < /du:.|la:r/ and /di:.|na:r/</td><td>18 (4%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.) + word boundary</td><td>/daw.ma:ʔ/ < /da.w|a:ʔ/ and /ma:ʔ/</td><td>16 (4%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.) + onset-nucleus</td><td>/ða.ha:s/ < /ða.h|ab/ and /m|a:s/</td><td>16 (4%)</td></tr>
<tr><td>onset-nucleus (1st Syl.) + onset-nucleus</td><td>/ða:s/ < /ð|a.hab/ and /m|a:s/</td><td>10 (2%)</td></tr>
<tr><td>nucleus-coda (2nd Syl.) + Syl. boundary (2nd Syl.|3rd Syl.)</td><td>/xi.ja:.tˤim/ < /xi.ja:|r/ and /tˤa.ma:.|tˤim/</td><td>10 (2%)</td></tr>
<tr><td>nucleus-coda (2nd Syl.) + nucleus-coda</td><td>/zaʕ.tajt/ < /zaʕ.ta|r/ and /za|jt/</td><td>10 (2%)</td></tr>
<tr><td>inside coda + Syl. boundary</td><td>/tam.ban/ < /tam|r/ and /la.|ban/</td><td>10 (2%)</td></tr>
<tr><td>Syl. boundary + onset-nucleus</td><td>/za.ʕajt/ < /zaʕ.|tar/ and /z|ajt/</td><td>9 (2%)</td></tr>
<tr><td>Syl. boundary (2nd Syl.|3rd Syl.) + Syl. boundary</td><td>/tˤa.ma:.ja:r/ < /tˤa.ma:.|tˤim/ and /xi.|ja:r/</td><td>8 (2%)</td></tr>
</table>

Combinations of cut-off points in source words (without overlap MoA1)	**Examples**	**Frequency of responses reflecting this combination**
onset-nucleus (2nd Syl.) + Syl. boundary	/tˤam.ja:r/ < /**tˤa.m**|a:.tˤim/ and /xi.|**ja:r**/	**8 (2%)**
onset-nucleus (1st Syl.) + onset-nucleus (1st Syl.)	/xa.ma:.tˤim/ < /**x**|i.ja:r/ and /tˤ|**a.ma:.tˤim**/	7 (2%)
onset-nucleus (1st Syl.) + onset-nucleus (2nd Syl.)	/da:r/ < /**d**|i:.na:r/ and /du:.l|**a:r**/	6 (1%)
Syl. boundary + Syl. boundary (1st Syl.|2nd Syl.)	/xi.ma:.tˤim/ < /**xi.**|ja:r/ and /tˤa.|**ma:.tˤim**/	5 (1%)
miscellaneous	-	5 Tetra legomena[27]
miscellaneous	-	4 Tris legomena[28]
miscellaneous	-	5 Dis legomena[29]
miscellaneous	-	16 Hapax legomena[30]
Total		**416 responses**
Average frequency		**8**

Table 5.30 below displays the combinations of cut-off points in the source words of responses to the experiment showing all cases of overlap. The ones in bold are the most frequent combinations.

Table 5.30: Combinations of cut-off points in SWs in responses to the experiment (MoA2)

<table>
<tr><th>Combinations of cut-off points in source words (with overlap MoA2)</th><th>Examples</th><th>Frequency of responses reflecting this combination</th></tr>
<tr><td>inside coda + onset-nucleus</td><td>/dʒubz/ < /dʒub|n/ and /x|ubz/</td><td>48 (12%</td></tr>
<tr><td>onset-nucleus + onset-nucleus (1st Syl.)</td><td>/ʃa.li:b/ < /ʃ|a:j/ and /ħ|a.li:b/</td><td>39 (9%)</td></tr>
<tr><td>Syl. boundary + word boundary</td><td>/da.ma:ʔ/ < /da.|wa:ʔ/ and /ma:ʔ/</td><td>34 (8%)</td></tr>
<tr><td>nucleus-coda + Syl. boundary</td><td>/ma:.hab/ < /ma:|s/ and /ða.|hab/</td><td>31 (7%)</td></tr>
<tr><td>word boundary + Syl. boundary</td><td>/zaj.tar/ < /zajt/ and /zaʕ.|tar/</td><td>24 (6%)</td></tr>
<tr><td>inside coda + Syl. boundary</td><td>/dʒu.ban/ < /dʒub|n/ and /la|.ban/</td><td>23 (6%)</td></tr>
<tr><td>Syl. boundary + onset-nucleus</td><td>/za.ʕajt/ < /zaʕ.|tar/ and /z|ajt/</td><td>23 (6%)</td></tr>
<tr><td>Syl. boundary + Syl. boundary</td><td>/du:.na:r/ < /du:.|la:r/ and /di:.|na:r/</td><td>18 (4%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.) + onset-nucleus</td><td>/ða.ha:s/ < /ða.h|ab/ and /m|a:s/</td><td>16 (4%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.) + word boundary</td><td>/daw.ma:ʔ/ < /da.w|a:ʔ/ and /ma:ʔ/</td><td>16 (4%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.) + nucleus-coda</td><td>/labn/ < /la.b|an/ and /dʒu|bn/</td><td>15 (4%)</td></tr>
<tr><td>nucleus-coda (2nd Syl.) + onset-nucleus</td><td>/zaʕ.tajt/ < /zaʕ.ta|r/ and /z|ajt/</td><td>11 (3%)</td></tr>
<tr><td>nucleus-coda (2nd Syl.) + onset-nucleus (2nd Syl.)</td><td>/xi.ja:.tˤim/ < /xi.ja:|r/ and /tˤa.m|a:.tˤim/</td><td>10 (2%)</td></tr>
<tr><td>nucleus-coda + onset-nucleus (1st Syl.)</td><td>/ta.ban/ < /ta|mr/ and /l|a.ban/</td><td>10 (2%)</td></tr>
<tr><td>onset-nucleus (1st Syl.) + onset-nucleus</td><td>/ða:s/ < /ð|a.hab/ and /m|a:s/</td><td>10 (2%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.) + Syl. boundary</td><td>/tˤam.ja:r/ < /tˤa.m|a:.tˤim/ and /xi.|ja:r/</td><td>8 (2%)</td></tr>
<tr><td>Syl. boundary (2nd Syl.|3rd Syl.) + Syl. boundary</td><td>/tˤa.ma:.ja:r/ < /tˤa.ma:.|tˤim/ and /xi.|ja:r/</td><td>8 (2%)</td></tr>
<tr><td>onset-nucleus (1st Syl.) + onset-nucleus (1st Syl.)</td><td>/xa.ma:.tˤim/ < /x|i.ja:r/ and /tˤ|a.ma:.tˤim/</td><td>7 (2%)</td></tr>
</table>

Combinations of cut-off points in source words (with overlap MoA2)	Examples	Frequency of responses reflecting this combination
onset-nucleus (1st Syl.) + onset-nucleus (2nd Syl.)	/da:r/ < /**d**|i:.na:r/ and /du:.l|**a:r**/	6 (1%)
Syl. boundary + Syl. boundary (1st Syl.|2nd Syl.)	/xi.ma:.tˤim/ < /**xi**.|ja:r/ and /tˤa.|**ma:.tˤim**/	5 (1%)
Miscellaneous	-	3 tetra legomena
Miscellaneous	-	4 tris legomena
Miscellaneous	-	5 dis legomena
Miscellaneous	-	20 hapax legomena
Total		**416 responses**
Average frequency		**8**

Comparing Table 5.29 and Table 5.30 shows that, based on both modes of analyses, there are combinations of cut-off points that are frequent and others that are not. It is also noted that there are preferences for having certain combinations of cut-off points based on one mode of analysis over others based on the other mode of analysis, as is the case, for instance, with the combination between the nucleus and coda + at a syllable boundary, which is a frequent combination based on the first mode of analysis that appears less frequent based on the second mode of analysis.

Table 5.31 below shows a comparison of the most frequent combinations of cut-off points in responses from the experiment showing the results based on the first mode of analysis and the second mode of analysis. The combinations of cut-off points are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.31: Comparison of the most frequent combinations of cut-off points in responses from the experiment based on MoA1 and MoA2

Frequent combinations of cut-off points (MoA1)	Frequent combinations of cut-off points (MoA2)
nucleus-coda + Syl. boundary	inside coda + onset-nucleus
nucleus-coda + nucleus-coda	onset-nucleus + onset-nucleus (1st Syl.)
onset-nucleus + onset-nucleus (1st Syl.)	Syl. boundary + word boundary
Syl. boundary + word boundary	**nucleus-coda + Syl. boundary**
Syl. boundary + nucleus-coda	word boundary + Syl. boundary
word boundary + onset-nucleus (2nd Syl.)	inside coda + Syl. boundary
Syl. boundary + Syl. boundary	**Syl. boundary + onset-nucleus**
onset-nucleus (2nd Syl.) + word boundary	**Syl. boundary + Syl. boundary**
onset-nucleus (2nd Syl.) + onset-nucleus	onset-nucleus (2nd Syl.) + onset-nucleus
onset-nucleus (1st Syl.) + onset-nucleus	onset-nucleus (2nd Syl.) + word boundary
nucleus-coda (2nd Syl.) + Syl. boundary (2nd Syl.|3rd Syl.)	onset-nucleus (2nd Syl.) + nucleus-coda
nucleus-coda (2nd Syl.) + nucleus-coda	**nucleus-coda (2nd Syl.) + onset-nucleus**
inside coda + Syl. boundary	**nucleus-coda (2nd Syl.) + onset-nucleus (2nd Syl.)**
Syl. boundary + onset-nucleus	**nucleus-coda + onset-nucleus (1st Syl.)**
Syl. boundary (2nd Syl.|3rd Syl.) + Syl. boundary	onset-nucleus (1st Syl.) + onset-nucleus
onset-nucleus (2nd Syl.) + Syl. boundary	onset-nucleus (2nd Syl.) + Syl. boundary
-	**Syl. boundary (2nd Syl.|3rd Syl.) + Syl. boundary**

This comparison also shows that four combinations are commonly found in both modes of analyses, which are:

- between the nucleus and coda + at a syllable boundary;
- between the nucleus and coda + between the onset and nucleus;
- at a syllable boundary + at a syllable boundary; and
- at a syllable boundary + between the onset and nucleus.

5.3.1.2.ii. Types of fusion at the split points in blends

Variation in the types of fusion at the split points in the blends caused by having different combinations of cut-off points in the source words was also examined in responses from the experiment based on both modes of analyses.

Table 5.32 below displays variations in the types of fusion at the split points in blends in the experiment based on the first mode of analysis.

Table 5.32: Types of fusion at the split points in blends from the experiment (MoA1)

Types of fusion at split points (MoA1)	Frequency	Examples	Source words with cut-off points
resyllabification	**218 (52%)**	/zaj.tar/	/**zajt**/ and /zaʕ.t|**ar**/
syllabic maintenance	**75 (18%)**	/da.ma:ʔ/	/**da.**|wa:ʔ/ and /**ma:ʔ**/
onset replacement (1st Syl.)	48 (12%)	/ʃa.li:b/	/**ʃ**|a:j/ and /ħ|**a.li:b**/
coda replacement	41 (10%)	/dʒubz/	/**dʒu**|bn/ and /xu|**bz**/
rime replacement (2nd Syl.)	16 (4%)	/ða.ha:s/	/**ða.h**|ab/ and /m|**a:s**/
coda replacement (2nd Syl.)	8 (2%)	/zaʕ.tajt/	/**zaʕ.ta**|r/ and /za|**jt**/
onset replacement	8 (2%)	/ða:s/	/**ð**|a.hab/ and /m|**a:s**/
partial coda replacement	2 (0.5%)	/tamn/	/**tam**|r/ and /la.ba|**n**/
Total	**416 responses**		
Average frequency	**52**		

The table shows that the most frequent types of fusion at split points in the blends are resyllabification and syllabic maintenance.

Table 5.33 below shows variations in the types of fusion at the split points in blends from the experiment based on the second mode of analysis.

Table 5.33: Types of fusion at the split points in blends from the experiment (MoA2)

Types of fusion at split points (MoA2)	Frequency	Examples	Source words with cut-off points
resyllabification	**205 (49%)**	/zaj.tar/	/**zaj*t***/ and /zaʕ.|***t*ar**/
syllabic maintenance	**75 (18%)**	/da.ma:ʔ/	/**da.**|wa:ʔ/ and /**ma:ʔ**/
onset replacement	**54 (13%)**	/dʒubz/	/**dʒ*ub***|n/ and /x|***ub*z**/
onset replacement (1st Syl.)	48 (12%)	/ʃa.li:b/	/**ʃ**|a:j/ and /ħ|**a.li:b**/
rime replacement (2nd Syl.)	16 (4%)	/ða.ha:s/	/**ða.h**|ab/ and /m|**a:s**/
coda replacement (2nd Syl.)	12 (3%)	/la.bamr/	/**la.b*a***|n/ and /t|***a*mr**/
coda replacement	4 (1%)	/dʒun/	/**dʒu**|bn/ and /la.ba|**n**/
partial coda replacement	2 (0.5%)	/tamn/	/**tam**|r/ and /la.ba|**n**/
Total	**416 responses**		
Average frequency	**52**		

The table shows that the most frequent types of fusion at split points in the blends are resyllabification, syllabic maintenance, and onset replacement.

From a comparison of the types of fusion at the split points in blends in Table 5.32 and Table 5.33, we can see that the two most frequent types of fusion for both modes of analyses are resyllabification and syllabic maintenance. The next most frequent preference for the type of fusion in blends of the experiment based on the second mode of analysis is onset replacement. Table 5.34 below summarises the types of fusion at split points in responses from the experiment comparing the results shown in Table 5.32 and Table 5.33. The types of fusion are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.34: Comparison of most frequent types of fusion at the split points in responses from the experiment (MoA1/MoA2)

Types of fusion at split points (MoA1)	Types of fusion at split points (MoA2)
resyllabification	resyllabification
syllabic maintenance	syllabic maintenance
-	onset replacement

5.3.1.2.iii. Patterns of fracto-lexemes

The combinations of cut-off points in source words of responses to the experiment were then examined based on the two different modes of analyses. It is found that the results for the patterns of fracto-lexemes do not change. When considering the locations of fracto-lexemes in the source words, the results show that, for most of the responses, the fore part from the first source word and the hind part from the second source word are joined to form the blend.

The patterns of fracto-lexemes can be displayed following the structural pattern of AB+CD proposed by Plag (2003) for the analysis of blends in English, in addition to being displayed following the pattern adopted in the current work, as displayed earlier in Table 5.3.

Table 5.35 below displays the combinations of locations of the fracto-lexemes in the source words in responses from the experiment.

Table 5.35: Patterns of fracto-lexemes in SWs in responses to the experiment (MoA1/MoA2)

<table>
<tr><th>Locations of the fracto-lexemes in SWs (MoA1/MoA2)</th><th>Patterns of fracto-lexemes</th><th>Examples</th><th>Frequency of responses</th></tr>
<tr><td>initial + final</td><td>AB+CD=AD</td><td>/dʒubz/ < /dʒ|ubn/ and /x|ubz/
(or /dʒubz/ < /dʒub|n/ and /x|ubz/)</td><td>303 (73%)</td></tr>
<tr><td>initial + full</td><td>AB+CD=ACD</td><td>/da.ma:ʔ/ < /da.|wa:ʔ/ and /ma:ʔ/</td><td>60 (14%)</td></tr>
<tr><td>full + final</td><td>AB+CD=ABD</td><td>/zaj.tar/ < /zajt/ and /zaʕ.|tar/</td><td>32 (8%)</td></tr>
<tr><td>initial + initial</td><td>AB+CD=AC</td><td>/di:.du:/ < /di:.|na:r/ and /du:.|la:r/</td><td>14 (3%)</td></tr>
<tr><td>final + final</td><td>AB+CD=BD</td><td>/tˤim.ja:r/ < /tˤa.ma:.|tˤim/ and /xi.|ja:r/</td><td>6 (1%)</td></tr>
<tr><td>final + initial</td><td>AB+CD=BC</td><td>/ban.tam/ < /la.|ban/ and /tam|r/</td><td>1 (0.2%)</td></tr>
<tr><td>Total</td><td></td><td></td><td>416 responses</td></tr>
<tr><td>Average frequency</td><td></td><td></td><td>69</td></tr>
</table>

The table also shows six patterns for the locations of the fracto-lexemes in the source words of the blends, with the combination initial + final (i.e. pattern AD) as the most frequent preference. It is noteworthy to mention that the last two patterns in this table do not exist in English. This could be an interesting observation had these patterns been supported by more data in further research.

It is worth mentioning at this point that although it has not been identified in the established Arabic blends that there are patterns like BD and BC, it is still possible to attribute these patterns to the participants' preference to adopt a new tendency for joining the fracto-lexemes they fancied from the source words. BD and BC structures could be peculiar to Arabic: according to Lehrer (2007, 117-120), English blends can be formed from the beginning of two words, e.g. *Mexicali* < *Mexico* + *California*, but "the beginning of a blend cannot be the end of a word", e.g. **glyson* < *ugly* + *person*.

5.3.1.2.iv. Locations of cut-off points in source words while referring to their position in the blend

The combinations of cut-off points also reflect the locations of the cut-off point in each source word of the word pair; that is, the preference for the cut-off point in the first source word and that in the second source word. Table 5.36 below displays the locations of cut-off points in the first and second source words in the responses to the experiment based on the first mode of analysis.

Table 5.36: Locations of cut-off points in SW1 and SW2 in responses from the experiment (MoA1)

Cut-off points in all of SW1s (MoA1)	Examples	Freq-uency	Cut-off points in all of SW2s (MoA1)	Examples	Freq-uency
nucleus-coda	/**ma:**|s/	**110 (26%)**	**Syl. boundary**	/ða.|**hab**/	**102 (25%)**
Syl. boundary	/**da.**|wa:ʔ/	**97 (23%)**	**nucleus-coda**	/xu|**bz**/	**94 (23%)**
onset-nucleus (2nd Syl.)	/**da.w**|a:ʔ/	**46 (11%)**	**word boundary**	/**ma:ʔ**/	**60 (14%)**
onset-nucleus	/**ʃ**|a:j/	**43 (10%)**	**onset-nucleus (1st Syl.)**	/ħ|**a.li:b**/	**51 (12%)**
nucleus-coda (2nd Syl.)	/**xi.ja:**|r/	34 (8%)	onset-nucleus	/m|**a:s**/	39 (9%)
word boundary	/**zajt**/	32 (8%)	onset-nucleus (2nd Syl.)	/zaʕ.t|**ar**/	33 (8%)
onset-nucleus (1st Syl.)	/**ð**|a.hab/	23 (6%)	nucleus-coda (2nd Syl.)	/ħa.li:|**b**/	14 (3%)
inside coda	/**tam**|r/	18 (4%)	Syl. boundary (2nd Syl.|3rd Syl.)	/tˤa.ma:.|**tˤim**/	10 (2%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:.**|tˤim/	12 (3%)	inside coda	/tam|**r**/	8 (1.92%)
nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.2%)	Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	5 (1%)
Total		**416 SWs**	**Total**		**416 SWs**
Average frequency		**38**	**Average frequency**		**42**

The table shows that the most frequent locations of the cut-off point in the first source word are:

- between the nucleus and coda;
- at a syllable boundary;
- between the onset and nucleus of the 2nd syllable of the source word; and
- between the onset and nucleus.

As for the cut-off point in the second source word, the table shows that the most frequent preferences are:

- at a syllable boundary;
- between the nucleus and coda;
- at word boundaries; and
- between the onset and nucleus of the 1st syllable of the source word.

Table 5.37 below displays the preferences for cut-off points in the first and the second source words in the blends based on the second mode of analysis.

Table 5.37: Location of cut-off points in SW1 and SW2 in responses from the experiment (MoA2)

The cut-off points in SW1 (MoA2)	Examples	Frequency	The cut-off points in SW2 (MoA2)	Examples	Frequency
Syl. boundary	/**da**.|wa:ʔ/	**85 (20%)**	**Syl. boundary**	/la.|***b*****an**/	**115 (28%)**
inside coda	/**x*****ub***|z/	**79 (19%)**	**onset-nucleus**	/ʃ|**a:j**/	**109 (26%)**
onset-nucleus (2nd Syl.)	/**ða.h**|ab/	**57 (14%)**	**word boundary**	/**dʒubn**/	**60 (14%)**
nucleus-coda	/**t*****a***|mr/	**49 (12%)**	**onset-nucleus (1st Syl.)**	/l|***a*****.ban**/	**60 (14%)**
onset-nucleus	/**ʃ**|a:j/	**43 (10%)**	onset-nucleus (2nd Syl.)	/tˤa.m|***a:*****.tˤim**/	25 (6%)
nucleus-coda (2nd Syl.)	/**xi.j*****a:***|r/	34 (8%)	nucleus-coda	/dʒu|***b*****n**/	24 (6%)
word boundary	/**zaj*****t***/	32 (8%)	nucleus-coda (2nd Syl.)	/ħa.li:|**b**/	10 (2%)
onset-nucleus (1st Syl.)	/**d**|i:.na:r/	24 (6%)	inside coda	/tam|**r**/	8 (2%)

The cut-off points in SW1 (MoA2)	Exam-ples	Freq-uency	The cut-off points in SW2 (MoA2)	Exam-ples	Freq-uency
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:.**|tˤim/	12 (3%)	Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	5 (1%)
nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.2%)	-	-	-
Total		**416 SWs**	**Total**		**416 SWs**
Average frequency		**42**	**Average frequency**		**46**

The table shows that the most frequent locations of the cut-off point in the first source word are:

- at a syllable boundary;
- inside the coda;
- between the onset and nucleus of the 2nd syllable of the source word;
- between the nucleus and coda; and
- between the onset and nucleus.

As for the second source word, the table shows that the most frequent preferences are:

- at a syllable boundary;
- between the onset and nucleus;
- at word boundaries; and
- between the onset and nucleus of the 1st syllable of the source word.

5.3.1.2.v. Locations of cut-off points in all of the source words in the responses

The locations of cut-off points in SW1s and SW2s are all compiled together in one table to identify the locations of cut-off points in all of the source words of responses regardless of their position in the blend.

Table 5.38 below displays the preferences for cut-off points in source words of the responses to the experiment based on the first mode of analysis.

Table 5.38: Locations of cut-off points in all of SWs in responses to the experiment (MoA1)

The cut-off points in all of SWs (MoA1)	Example	Frequency
nucleus-coda	/**ma:**|s/	**204 (25%)**
Syl. boundary	/ða.|**hab**/	**199 (24%)**
word boundary	/**ma:ʔ**/	**92 (11%)**
onset-nucleus	/**ʃ**|a:j/	**82 (10%)**
onset-nucleus (2nd Syl.)	/**da.w**|a:ʔ/	**79 (10%)**
onset-nucleus (1st Syl.)	/ħ|**a.li:b**/	74 (9%)
nucleus-coda (2nd Syl.)	/**xi.ja:**|r/	48 (6%)
inside coda	/**tam**|r/	26 (3%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:.**|tˤim/	22 (3%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	5 (1%)
nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.1%)
Total		**832**
Average frequency		**76**

The table shows that the most frequent locations of cut-off points in all of the source words are:

- between the nucleus and coda;
- at a syllable boundary;
- at word boundaries;
- between the onset and nucleus; and
- between the onset and nucleus of the 2nd syllable of the source word.

Table 5.39 below displays the preferences for cut-off points in all of the source words of the responses from the experiment based on the second mode of analysis.

Table 5.39: Locations of cut-off points in all of SWs in responses to the experiment (MoA2)

<table>
<tr><th>Cut-off points in all of SWs (MoA2)</th><th>SWs</th><th>Frequency</th></tr>
<tr><td>Syl. boundary</td><td>/zaʕ.|tar/</td><td>200 (24%)</td></tr>
<tr><td>onset-nucleus</td><td>/x|ubz/</td><td>152 (18%)</td></tr>
<tr><td>word boundary</td><td>/ma:ʔ/</td><td>92 (11%)</td></tr>
<tr><td>inside coda</td><td>/dʒub|n/</td><td>87 (10%)</td></tr>
<tr><td>onset-nucleus (1st Syl.)</td><td>/ħ|a.li:b/</td><td>84 (10%)</td></tr>
<tr><td>onset-nucleus (2nd Syl.)</td><td>/la.b.|an/</td><td>82 (10%)</td></tr>
<tr><td>nucleus-coda</td><td>/ma:|s/</td><td>73 (9%)</td></tr>
<tr><td>nucleus-coda (2nd Syl.)</td><td>/xi.ja:|r/</td><td>44 (5%)</td></tr>
<tr><td>Syl. boundary (2nd Syl.|3rd Syl.)</td><td>/tˤa.ma:.|tˤim/</td><td>12 (1%)</td></tr>
<tr><td>Syl. boundary (1st Syl.|2nd Syl.)</td><td>/tˤa.|ma:.tˤim/</td><td>5 (1%)</td></tr>
<tr><td>nucleus-coda (1st Syl.)</td><td>/za|ʕ.tar/</td><td>1 (0.1%)</td></tr>
<tr><td>Total</td><td></td><td>832 SWs</td></tr>
<tr><td>Average frequency</td><td></td><td>76</td></tr>
</table>

The table shows that the most frequent locations of cut-off points in all of the source words are:

- at a syllable boundary;
- between the onset and nucleus;
- at word boundaries;
- inside the coda;
- between the onset and nucleus of the 1st syllable of the source word; and
- between the onset and nucleus of the 2nd syllable of the source word.

When the most frequent locations of cut-off points in all of the source words in Table 5.38 and Table 5.39 are compared, it is found that there are locations of cut-off points that are common to both modes of analyses. Table 5.40 below displays the comparison of the locations of cut-off points in all of the source words of responses to the experiment based on both modes of analyses. The locations of cut-off points are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.40: Comparison of the most frequent locations of cut-off points in all of SWs in responses to the experiment based on MoA1 and MoA2

The cut-off points in all of SWs (MoA1)	The cut-off points in all of SWs (MoA2)
nucleus-coda	**Syl. boundary**
Syl. boundary	**onset-nucleus**
word boundary	**word boundary**
onset-nucleus	inside coda
onset-nucleus (2nd Syl.)	onset-nucleus (1st Syl.)
-	**onset-nucleus (2nd Syl.)**

The table shows that there are four frequent locations of cut-off points that are commonly found in the whole data based on both modes of analyses, which are:

- at a syllable boundary
- at word boundaries
- between the onset and nucleus
- between the onset and nucleus of the 2nd syllable of the source word

The table also shows that the most frequent preference for the cut-off point based on the first mode of analysis does not appear amongst the preferences for cut-off points based on the second mode of analysis and that the fourth preference based on the second mode of analysis is not found amongst the preferences based on the first mode of analysis.

5.3.1.2.vi. Locations of cut-off points in source words while referring to their size

The results also show that there is a relationship between the cut-off point and the size of the source word. Although there is a general tendency for cut-off points to occur mostly at phonological joints, there is some variation in cut-off points in the source words in terms of the number of their syllables.

To examine the relationship between the cut-off point and the size of the source word and to determine if there is a difference in the results when considering cases with obvious single fusion points as opposed to when considering cases of overlap, the results from both modes of analyses of responses to the experiment are considered. The size of a source word is again measured in terms of the number of its syllables as monosyllabic or polysyllabic.

Table 5.41 below displays the locations of cut-off points in source words as related to their size based on the first mode of analysis.

Table 5.41: Locations of cut-off points as related to the size of SWs in responses from the experiment (MoA1)

Cut-off Point in SWs (MoA1)	**Size of SWs**	**Frequency and percentage of SWs out of subtotal**
	Monosyllabic SWs	
nucleus-coda	/**maː**|s/	**204 (51%)**
word boundary	/**maːʔ**/	87 (22%)
onset-nucleus	/**ʃ**|aːj/	82 (21%)
inside coda	/**tam**|r/	26 (7%)
	Subtotal	**399 SWs**
	Average frequency	**100**
	Polysyllabic SWs	
Syl. boundary	/ða.|**hab**/	**199 (46%)**
onset-nucleus (2nd Syl.)	/zaʕ.t|**ar**/	**79 (18%)**
onset-nucleus (1st Syl.)	/ħ|**a.liːb**/	**74 (17%)**
nucleus-coda (2nd Syl.)	/**xi.jaː**|r/	48 (11%)
Syl. boundary (2nd Syl.|3rd Syl.)	/tˤa.maː.|**tˤim**/	22 (5%)
word boundary	/**la.ban**/	5 (1%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**maː.tˤim**/	5 (1%)
nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.2%)
	Subtotal	**433 SWs**
	Average frequency	**54**
Total		**832 SWs**

The table shows that the most frequent location of the cut-off point in monosyllabic source words is between the nucleus and coda, with 204/399 (51%) SWs showing this preference and the most frequent locations of the cut-off points in polysyllabic source words are at a syllable boundary, with 199/433 (46%) SWs showing this preference and between the onset and nucleus, with 79/433 (18%) SWs having the cut-off point in the second syllable and 74/433 (17%) in the first.

Table 5.42 below displays the locations of cut-off points in source words as related to their size based on the second mode of analysis.

Table 5.42: Locations of cut-off points as related to the size of SWs in responses from the experiment (MoA2)

Cut-off Point in SWs (MoA2)	**Size of SWs**	**Frequency and percentage of SWs out of subtotal**
	Monosyllabic SWs	
onset-nucleus	/dʒ|***ub*****n**/	**152 (38%)**
inside coda	/**dʒ*ub***|n/	87 (22%)
word boundary	/**zaj*t***/	87 (22%)
nucleus-coda	/**za**|jt/	73 (18%)
	Subtotal	**399 SWs**
	Average frequency	**100**
	Polysyllabic SWs	
Syl. boundary	/la.|***b*****an**/	**200 (46%)**
onset-nucleus (1st Syl.)	/**d**|iː.naːr/	**83 (19%)**
onset-nucleus (2nd Syl.)	/tˤa.m|*aː*.tˤim/	**83 (19%)**
nucleus-coda (2nd Syl.)	/**xi.ja*ː***|r/	44 (10%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.m*aː*.**|tˤim/	12 (3%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**maː.tˤim**/	5 (1%)
word boundary	/**da.waːʔ**/	5 (1%)
nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.2%)
	Subtotal	**433 SWs**
	Average frequency	**54**
Total		**832 SWs**

The table shows that the most frequent location of the cut-off point in monosyllabic source words is between the onset and nucleus, with 152/399 (38%) SWs showing this preference and the most frequent locations of cut-off points in polysyllabic source words are at a syllable boundary, with 200/433 (46%) SWs showing this preference, and between the onset and nucleus, with 83/433 (19%) SWs having the cut-off point in the first syllable and 83/433 (19%) in the second.

After comparing the results in Table 5.41 and Table 5.42, it is found that there is no change in the most frequent locations of the cut-off point in monosyllabic and polysyllabic source words based on both modes of analyses. It is generally the case that cut-off points occur at syllabic joints or between syllabic constituents.

Table 5.43 below displays a comparison of the most frequent locations of cut-off points in source words as related to their size based on the two modes of analyses. The locations of cut-off points are listed in each column based on their order of frequency from the highest to the lowest.

Table 5.43: Comparison of the most frequent locations of cut-off points as related to the size of SWs in responses from the experiment based on MoA1 and MoA2

Cut-off Points in SWs (MoA1)	Cut-off Points in SWs (MoA2)
Monosyllabic SWs	**Monosyllabic SWs**
nucleus-coda	onset-nucleus
Polysyllabic SWs	**Polysyllabic SWs**
Syl. boundary	Syl. boundary
onset-nucleus (2^{nd} Syl.)	onset-nucleus (1^{st} Syl.)
onset-nucleus (1^{st} Syl.)	onset-nucleus (2^{nd} Syl.)

The comparison in this table shows that, based on both modes of analyses, the general tendency for monosyllabic source words is to have the cut-off point at a phonological joint, usually between the nucleus and coda based on the first mode of analysis, and between the onset and nucleus based on the second mode of analysis. Meanwhile, for polysyllabic source words and based on both modes of analyses, there is a general tendency for cut-off points to occur also at phonological joints, with a comparable ordering for the first most frequent preference, which is at the syllable boundary or between syllabic constituents, with a reversed ordering for the second and third most frequent preferences, which are between the onset and nucleus with a preference for it to occur in the first syllable or the second syllable.

5.3.1.3. Cut-off Points in Novel Invented Blends: A Summary

This section summarises the findings for the tendencies related to the feature of cut-off points in source words of the 469 (53 from the survey and 416 from the experiment) responses examined for this feature, henceforth referred to as the cut-off dataset.

Table 5.44 below displays the most frequent combinations of cut-off points in this dataset based on both modes of analyses. The combinations are listed based on their order of frequency from the highest to the lowest.

Table 5.44: Comparison of the most frequent combinations of cut-off points in the cut-off data based on MoA1 and MoA2

Most frequent combinations of cut-off points in SWs (MoA1)	Most frequent combinations of cut-off points in SWs (MoA2)
nucleus-coda + Syl. boundary	inside coda + onset-nucleus
nucleus-coda + nucleus-coda	**onset-nucleus + onset-nucleus (1st Syl.)**
onset-nucleus + onset-nucleus (1st Syl.)	Syl. boundary + word boundary
Syl. boundary + word boundary	**nucleus-coda + Syl. boundary**
Syl. boundary + nucleus-coda	**inside coda + Syl. boundary**
word boundary + onset-nucleus (2nd Syl.)	word boundary + Syl. boundary
onset-nucleus (2nd Syl.) + onset-nucleus	Syl. boundary + onset-nucleus
Syl. boundary + Syl. boundary	**onset-nucleus (2nd Syl.) + onset-nucleus**
onset-nucleus (2nd Syl.) + word boundary	**Syl. boundary + Syl. boundary**
nucleus-coda (2nd Syl.) + Syl. boundary (2nd Syl.|3rd Syl.)	**onset-nucleus (2nd Syl.) + word boundary**
onset-nucleus (1st Syl.) + onset-nucleus	onset-nucleus (2nd Syl.) + nucleus-coda
inside coda + Syl. boundary	nucleus-coda + onset-nucleus (1st Syl.)
nucleus-coda (2nd Syl.) + nucleus-coda	nucleus-coda (2nd Syl.) + onset-nucleus (2nd Syl.)
-	**onset-nucleus (1st Syl.) + onset-nucleus**
-	nucleus-coda (2nd Syl.) + onset-nucleus

This comparison shows that there are seven combinations of cut-off points (marked in bold) that are commonly found based on both modes of analyses.

The comparison also shows that, based on the first mode of analysis, the combinations that include cut-off points at phonological joints are less frequent within the preferences based on the second mode of analysis, as is the case with the combination between the nucleus and coda + at a syllable boundary, or disappear altogether, as is the case, for instance, with the combination at a syllable boundary + between the nucleus and coda. On the other hand, combinations that include cut-off points within syllabic constituents based on the second mode of analysis are either not frequent based on the first mode of analysis, as is the case, for instance, with the combination inside the coda + between the onset and nucleus, or are less frequent as is the case, for instance, with the combination inside the coda + at a syllable boundary.

Table 5.45 below displays the most frequent types of fusion at split points in the cut-off dataset based on both modes of analyses. The preferences for the types of fusion are listed based on their order of frequency from the highest to the lowest.

Table 5.45: Comparison of types of fusion at the split points in the cut-off dataset based on MoA1 and MoA2

Types of fusion at split points (MoA1)	Type of fusion at split points (MoA2)
resyllabification	**resyllabification**
syllabic maintenance	**syllabic maintenance**
onset replacement (1st Syl.)	onset replacement
coda replacement	onset replacement (1st Syl.)
rime replacement (2nd Syl.)	rime replacement (2nd Syl.)
coda replacement (2nd Syl.)	coda replacement (2nd Syl.)
onset replacement	coda replacement
partial coda replacement	partial coda replacement

This comparison shows that the same types of fusion are commonly found in both modes of analyses. The comparison also shows that for the cut-off dataset and based on both modes of analyses, the same two types of fusion (marked in bold) are more common than the remaining types. Meanwhile, the other types appear to have different orderings of preferences in the two modes of analyses.

The combinations of the patterns of fracto-lexemes can also be displayed here following the structural pattern of AB+CD proposed by Plag (2003) for the analysis of blends in English, in addition to being displayed following the pattern adopted in the current work, as displayed in Table 5.3.

Table 5.46 below displays the combinations of the locations of fracto-lexemes in the source words in responses from the survey.

Table 5.46: Patterns of fracto-lexemes in the cut-off dataset

Locations of fracto-lexemes in SWs	Patterns of fracto-lexemes	Examples	Frequency of responses
initial + final	**AB+CD=AD**	/dʒubz/ < /**dʒ**|ubn/ and /x|**ubz**/	**343 (73%)**
initial + full	AB+CD=AW	/da.maːʔ/ < /**da.**|waːʔ/ and /**maːʔ**/	67 (14%)
full + final	AB+CD=WD	/zaj.tar/ < /**zaj*t***/ and /zaʕ.|***t*ar**/	36 (8%)
initial + initial	AB+CD=AC	/diː.duː/ < /**diː.**|naːr/ and /**duː.**|laːr/	16 (3%)
final + final	AB+CD=BD	/tˤim.jaːr/ < /tˤa.maː.|**tˤim**/ and /xi.|**jaːr**/	6 (1%)
final + initial	AB+CD=BC	/ban.tam/ < /la.|**ban**/ and /**tam**|r/	1 (0.2%)
Total			**469 responses (53 from the survey, 416 from the experiment)**
Average frequency			**78**

The results in this table show six patterns of fracto-lexemes of the blends, with the combination initial + final (i.e. pattern AD) as the most frequent preference. The last two patterns, as was shown earlier in Table 5.35, do not exist in English. This means that they could be peculiar to Arabic.

Regarding the locations of cut-off points in the source words of the cut-off dataset, while referring to their ordering in the blend, the preferences for cut-off points in the first source word based on the first mode of analysis are compared to those based on the second mode of analysis. Table 5.47 below displays this comparison.

Table 5.47: Comparison of locations of cut-off points in SW1 of the cut-off dataset based on MoA1 and MoA2

Cut-off points in all of SW1s (MoA1)	**SWs**	**Freq-uency**	**Cut-off points in all of SW1s (MoA2)**	**SWs**	**Freq-uency**
nucleus-coda	/**ma:**|s/	**130 (28%)**	**inside coda**	/**x*ub***|z/	**96 (20%)**
Syl. boundary	/**da**.|wa:ʔ/	**105 (22%)**	**Syl. boundary**	/**da**.|wa:ʔ/	**92 (20%)**
onset-nucleus (2nd Syl.)	/**da.w**|a:ʔ/	**51 (11%)**	**onset-nucleus (2nd Syl.)**	/**ða.h**|ab/	**63 (13%)**
onset-nucleus	/**ʃ**|a:j/	**48 (10%)**	**nucleus-coda**	/**t*a***|mr/	**55 (12%)**
nucleus-coda (2nd Syl.)	/**xi.ja:**|r/	38 (8%)	**onset-nucleus**	/**ʃ**|a:j/	**48 (10%)**
word boundary	/**zajt**/	36 (8%)	nucleus-coda (2nd Syl.)	/**xi.j*a:***|r/	38 (8%)
onset-nucleus (1st Syl.)	/**ð**|a.hab/	24 (5%)	word boundary	/**zaj*t***/	36 (8%)
inside coda	/**tam**|r/	21 (4%)	onset-nucleus (1st Syl.)	/**d**|i:.na:r/	25 (5.33%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˁa.ma:**.|tˁim/	14 (3%)	Syl. boundary (2nd Syl.|3rd Syl.)	/**tˁa.ma:.**|tˁim/	14 (3%)
nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.2%)	nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.2%)
nucleus-coda (3rd Syl.)	/**tˁa.ma:.tˁi**|m/	1 (0.2%)	nucleus-coda (3rd Syl.)	/**tˁa.ma:.tˁi**|m/	1 (0.2%)
Total		**469 SWs**	**Total**		**469 SWs**
Average frequency		**43**	**Average frequency**		**43**

This comparison shows that four of the most frequent locations of cut-off points in the first source word are commonly found in both modes of analyses, which are:

- between the nucleus and coda;
- at a syllable boundary;
- between the onset and nucleus of the 2nd syllable of the source word; and
- between the onset and nucleus.

It is also shown that the most frequent location of the cut-off point based on the first mode of analysis, which is between the nucleus and coda, becomes less frequent based on the second mode of analysis and that one of the least frequent locations based on the first mode of analysis, which is inside the coda, becomes the most frequent one based on the second mode of analysis. This comparison also shows that there are two locations of the cut-off point whose order of preference does not change, which are at a syllable boundary and between the onset and nucleus of the 2nd syllable of the source word.

The locations of cut-off points in the second source word based on the first mode of analysis were also compared to those in the second source word based on the second mode of analysis. Table 5.48 below displays this comparison.

Table 5.48: Comparison of locations of cut-off points in SW2 of the cut-off dataset based on MoA1 and MoA2

The cut-off points in SW2 (MoA1)	**SWs**	**Freq-uency**	**The cut-off points in SW2 (MoA2)**	**SWs**	**Freq-uency**
Syl. boundary	/ða.|**hab**/	**114 (24%)**	**onset-nucleus**	/ʃ|**a:j**/	**130 (28%)**
nucleus-coda	/xu|**bz**/	**108 (23%)**	**Syl. boundary**	/la.|***b*an**/	**127 (27%)**
word boundary	/**ma:ʔ**/	**67 (14%)**	**onset-nucleus (1st Syl.)**	/l|***a*.ban**/	**67 (14%)**
onset-nucleus (1st Syl.)	/ħ|**a.li:b**/	**58 (12%)**	**word boundary**	/**dʒubn**/	**67 (14%)**
onset-nucleus	/m|**a:s**/	46 (10%)	onset-nucleus (2nd Syl.)	/tˤa.m|***a:*.tˤim**/	28 (6%)

The cut-off points in SW2 (MoA1)	**SWs**	**Freq-uency**	**The cut-off points in SW2 (MoA2)**	**SWs**	**Freq-uency**
onset-nucleus (2nd Syl.)	/zaʕ.t|**ar**/	35 (7%)	nucleus-coda	/dʒu|***b*n**/	26 (6%)
nucleus-coda (2nd Syl.)	/ħa.li:|**b**/	15 (3%)	nucleus-coda (2nd Syl.)	/ħa.li:|**b**/	10 (2%)
Syl. boundary (2nd Syl.|3rd Syl.)	/tˤa.ma:.|**tˤim**/	12 (3%)	inside coda	/tam|**r**/	8 (2%)
inside coda	/tam|**r**/	8 (2%)	Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	6 (1%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	6 (1%)	-	-	-
Total		**469 SWs**	**Total**		**469**
Average frequency		**47**	**Average frequency**		**52**

This comparison shows that three of the most frequent locations of cut-off points in the second source word are commonly found in both modes of analyses, which are:

- at a syllable boundary;
- at word boundaries; and
- between the onset and nucleus of the 1st syllable of the source word.

It is also shown that the second most frequent preference for the cut-off point based on the first mode of analysis, which is between the nucleus and coda, becomes less frequent based on the second mode of analysis, and that preference which is amongst the least frequent ones based on the first mode of analysis, between the onset and nucleus, becomes the most frequent one based on the second mode of analysis. This comparison also shows that, apart from the most frequent preferences that are not common to both modes of analyses, the preference for the cut-off point at the syllable boundary is the most frequent.

The locations of cut-off points in the source words of the cut-off dataset were then all compiled for both modes of analyses to identify the most frequent preferences regardless of their ordering in the blend.

The locations of cut-off points in the source words of all responses in the cut-off dataset based on both modes of analyses are summarised and compared in Table 5.49 below.

Table 5.49: Comparison of locations of cut-off points in all of SWs in responses to the cut-off dataset based on MoA1 and MoA2

The cut-off points in all of SWs (MoA1)	**SWs**	**Freq-uency**	**The cut-off points in all of SWs (MoA2)**	**SWs**	**Freq-uency**
nucleus-coda	/**ma:**|s/	**238 (25%)**	**Syl. boundary**	/**la.**|ban/	**219 (23%)**
Syl. boundary	/ða.|**hab**/	**219 (23%)**	**onset-nucleus**	/**dʒ**|ubn/	**176 (19%)**
word boundary	/**ma:ʔ**/	**103 (11%)**	**inside coda**	/**dʒ*ub***|n/	**104 (11%)**
onset-nucleus	/**ʃ**|a:j/	**94 (10%)**	**word boundary**	/**xubz**/	**103 (11%)**
onset-nucleus (2nd Syl.)	/**da.w**|a:ʔ/	**86 (10%)**	**onset-nucleus (1st Syl.)**	/**d**|a.wa:ʔ/	**94 (10%)**
onset-nucleus (1st Syl.)	/ħ|**a.li:b**/	**82 (9%)**	**onset-nucleus (2nd Syl.)**	/ħa.l|**i:b**/	**91 (10%)**
nucleus-coda (2nd Syl.)	/**xi.ja:**|r/	53 (6%)	**nucleus-coda**	/**ma:**|s/	**81 (9%)**
inside coda	/**tam**|r/	29 (3%)	nucleus-coda (2nd Syl.)	/**la.b*a***|n/	48 (5%)
Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:.**|tˤim/	26 (3%)	Syl. boundary (2nd Syl.|3rd Syl.)	/**tˤa.ma:.**|tˤim/	14 (1%)
Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	6 (1%)	Syl. boundary (1st Syl.|2nd Syl.)	/tˤa.|**ma:.tˤim**/	6 (1%)

The cut-off points in all of SWs (MoA1)	**SWs**	**Freq-uency**	**The cut-off points in all of SWs (MoA2)**	**SWs**	**Freq-uency**
nucleus-coda (3rd Syl.)	/**tˤa.ma:.tˤi**|m/	1 (0.1%)	nucleus-coda (3rd Syl.)	/**tˤa.ma:.tˤi**|m/	1 (0.1%)
nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.1%)	nucleus-coda (1st Syl.)	/**za**|ʕ.tar/	1 (0.1%)
Total		**938 SWs**	**Total**		**938 SWs**
Average frequency		**78**	**Average frequency**		**78**

This comparison shows that six of the most frequent locations of cut-off points in all of the source words are commonly found based on both modes of analyses, although with a different order of frequency, which are:

- between the nucleus and coda;
- at a syllable boundary;
- at word boundaries;
- between the onset and nucleus;
- between the onset and nucleus of the 2nd syllable of the source word; and
- between the onset and nucleus of the 1st syllable of the source word

The most frequent location of the cut-off point based on the first mode of analysis is between the nucleus and coda, whereas the most frequent location of the cut-off point based on the second mode of analysis is at a syllable boundary. Additionally, the location of the cut-off point inside the coda appears within the most frequent ones based on the second mode of analysis but not based on the first mode of analysis. Moreover, the location of a cut-off point at a syllable boundary has the same level of frequency based on both modes of analyses.

The locations of cut-off points in the source words of the cut-off dataset as related to their size based on both modes of analyses are summarised and compared in 3.5.2 below.

Table 5.50: Comparison of locations of cut-off points as related to the size of SWs in responses in the cut-off dataset based on MoA1 and MoA2

The cut-off points in all of SWs (MoA1)	Frequency and percentage of SWs out of subtotal	The cut-off points in all of SWs (MoA2)	Frequency and percentage of SWs out of subtotal
Monosyllabic SWs		**Monosyllabic SWs**	
nucleus-coda	**238 (52%)**	**onset-nucleus**	**176 (39%)**
word boundary	95 (21%)	inside coda	104 (23%)
onset-nucleus	94 (21%)	word boundary	95 (21%)
inside coda	29 (6%)	nucleus-coda	81 (18%)
Subtotal	**456 SWs**	**Subtotal**	**456**
Average frequency	**114**	**Average frequency**	**114**
Polysyllabic SWs		**Polysyllabic SWs**	
Syl. boundary	**219 (45%)**	**Syl. boundary**	**219 (45%)**
onset-nucleus (2nd Syl.)	**86 (18%)**	**onset-nucleus (1st Syl.)**	**93 (20%)**
onset-nucleus (1st Syl.)	**82 (17%)**	**onset-nucleus (2nd Syl.)**	**92 (20%)**
nucleus-coda (2nd Syl.)	53 (11%)	nucleus-coda (2nd Syl.)	48 (10%)
Syl. boundary (2nd Syl.|3rd Syl.)	26 (5%)	Syl. boundary (2nd Syl.|3rd Syl.)	14 (3%)
word boundary	8 (2%)	word boundary	8 (2%)
Syl. boundary (1st Syl.|2nd Syl.)	6 (1%)	Syl. boundary (1st Syl.|2nd Syl.)	6 (1%)
nucleus-coda (3rd Syl.)	1 (0.2%)	nucleus-coda (3rd Syl.)	1 (0.2%)
nucleus-coda (1st Syl.)	1 (0.2%)	nucleus-coda (1st Syl.)	1 (0.2%)
Subtotal	**482 SWs**	**Subtotal**	**482 SWs**
Average frequency	**54**	**Average frequency**	**54**
Total	**938 SWs**	**Total**	**938 SWs**

This comparison shows that the most frequent location of the cut-off point in the monosyllabic source words based on the first mode of analysis is between the nucleus and coda and that the most frequent location of the cut-off point in the monosyllabic source word based on the second mode of analysis is between the onset and nucleus.

Meanwhile, the most frequent location of the cut-off point in polysyllabic source words is at a syllable boundary that has the same ordering and level of frequency based on both modes of analyses. The remaining most frequent locations, which are between the onset and nucleus of the 2nd syllable of the source word and between the onset and nucleus of the 1st syllable of the source word, are both common based on both modes of analyses, although with a reversed ordering of frequency.

The results suggest that it is generally the case that novel Arabic blends have a cut-off point between syllabic constituents, preferably between the onset and the nucleus, or at a syllable boundary.

The discussion now turns to an examination of the proportion of phonemic contribution from source words to blends.

5.3.2. Proportional Contributions from Source Words to Blends

This section examines the proportions of contribution from source words to blends. Two major tendencies relating to this feature have been identified in English blends (see section 3.5.2.) and are considered in this discussion. Both tendencies relate to the length of the source words, measured in terms of the number of phonemes. Firstly, it is generally the case for English blends that the greater proportion of contribution comes from the shorter source word (Kaunisto 2000, 49-50). Secondly, when source words have equal length, it is generally the case that there are equal proportions of contribution from both source words to the blend (Gries 2004b, 654).

The blends examined here are only the fully diacritised responses from the survey (59 responses) and the experiment (503 responses). These cases provide a complete representation of the structure of the blends. Furthermore, since this book counts overlapping segments as common to both source words, blends are analysed based on the second mode of analysis only.

Of the nine word-pairs given as stimuli in the survey, seven included source words with different phonemic lengths, such as /zajt/ "oil" and /zaʕ.tar/ "thyme", while the other two included source words of equal phonemic length, as in /dʒubn/ "cheese" and /xubz/ "bread".

The formula used by Kaunisto (2000, 49) to measure the proportional contributions of source words to blends is used to measure the proportional contributions from source words to blends from the whole data.

To explain how the blends are analysed, three are analysed below as samples of those having the greater proportional contributions from the shorter SW, or the longer SW, and for those having equal contributions from both SWs.

Figure 5.3 below displays how the proportional contributions for the blend /lamr/ are calculated.

Figure 5.3: Analysis of the blend /lamr/

<table>
<tr><td rowspan="2">Source word 1: /la.|ban/</td><td>b a n</td><td>⇒ $^{3}/_{5}$ not in the blend = 60%</td></tr>
<tr><td>l a</td><td>⇒ $^{2}/_{5}$ in the blend = 40%</td></tr>
<tr><td rowspan="2">Source word 2: /t|amr/</td><td>a m r</td><td>⇒ $^{3}/_{4}$ in the blend = 75%</td></tr>
<tr><td>t</td><td>⇒ $^{1}/_{4}$ not in the blend = 25%</td></tr>
<tr><td colspan="3">a split point with overlap</td></tr>
</table>

This figure shows that 40% from SW1 /**la.**|ban/ and 75% from SW2 /t|***a*mr**/ are contributed to the blend /lamr/. This indicates that the greater proportional contribution comes from /tamr/, which is the shorter source word.

Figure 5.4 below displays how the proportional contributions for the blend /ma.wa:ʔ/ are calculated.

Figure 5.4: Analysis of the blend /ma.wa:ʔ/

<table>
<tr><td rowspan="2">Source word 1: /m|a:ʔ/</td><td>a: ʔ</td><td>⇒ $^{2}/_{3}$ not in the blend = 67%</td></tr>
<tr><td>m</td><td>⇒ $^{1}/_{3}$ in the blend = 33%</td></tr>
<tr><td rowspan="2">Source word 2:
/d|a.wa:ʔ/</td><td>a w a: ʔ</td><td>⇒ $^{4}/_{5}$ in the blend = 80%</td></tr>
<tr><td>d</td><td>⇒ $^{1}/_{2}$ not in the blend = 20%</td></tr>
<tr><td colspan="3">split point</td></tr>
</table>

This figure shows that 33% from SW1 /**m**|a:ʔ/ and 80% from SW2 /d|**a.wa:ʔ**/ are contributed to the blend /ma.wa:ʔ/. This indicates that the greater proportional contribution comes from /d|**a.wa:ʔ**/, which is the longer source word.

Figure 5.5 below displays how the proportional contributions for the blend /dʒubz/ are calculated.

Figure 5.5: Analysis of the blend /dʒubz/

<table>
<tr><td rowspan="2">Source word
1: /dʒub|n/</td><td>n</td><td>⇒ $^{1}/_{4}$ not in the blend = 25%</td></tr>
<tr><td>dʒ u b</td><td>⇒ $^{3}/_{4}$ in the blend = 75%</td></tr>
<tr><td rowspan="2">Source word
2: /x|ubz/</td><td>u b z</td><td>⇒ $^{3}/_{4}$ in the blend = 75%</td></tr>
<tr><td>x</td><td>⇒ $^{1}/_{4}$ not in the blend = 25%</td></tr>
<tr><td colspan="3">overlap[1] overlap[2]</td></tr>
</table>

This figure shows that both source words contribute equal proportions to the blend.

5.3.2.1. Tendencies for Proportional Contributions from Source Words to Blends from the Survey

The same coding template as in Table 5.10 is used to display the frequency of proportional contributions from source words to blends in responses from the survey and the experiment.

The proportional contributions from source words to blends were calculated following the formula in section 3.5.2, and the results show that the greater proportional contribution tends to come from the shorter source word. All 59 responses in the survey were analysed following the process implemented by Gries (2004b, 651).

Table 5.51 below displays the proportional contributions of the source words to blends from the survey.

Table 5.51: Proportional contributions from SWs to blends from the survey

Phonemic length of source words	Equal proportions from both SWs	Greater proportion is from SW1	Greater proportion is from SW2	The total frequency of responses with these word pairs
SW1< SW2	1 (4%)	**17 (61%)**	10 (36%)	28 (47%)
SW1 > SW2	0 (0%)	4 (20%)	**16 (80%)**	20 (34%)
SW1 = SW2	**10 (91%)**	0 (0%)	1 (9%)	11 (19%)
The total frequency of responses	11 (19%)	21 (36%)	27 (46%)	59

The results in this table show that 28 (47%) of the responses have SW1 shorter than SW2, 20 (34%) have an SW2 shorter than SW1, and 11 (19%) have both source words of equal phonemic length.

The results show that the greater proportional contribution tends to come from the shorter source word, with 17/28 (61%) of the responses with SW1<SW2 having the greater proportional contributions from SW1, as in /dʒu.ban/ **<** /**dʒu*b***|n/ and /la.|***b*an**/; and 16/20 (80%) of the responses with SW1>SW2 having the greater proportional contribution from SW2, as in /da.ma:ʔ/ < /**da.**|wa:ʔ/ and /**ma:ʔ**/. This amounts to 33/48 (69%) of the total responses to these two sets of word pairs, representing 56% of the overall number of responses to the survey (33/59 responses).

The results also show that the source words that have equal phonemic lengths contribute equal proportions to the blend, with 10/11 (91%) of the responses with SW1=SW2 showing this preference, as in /xu.bun/ < /**x*ub***|z/ and /dʒ|***ub*n**/.

The results show three main preferences for the proportional contributions from all source words to the blends. Firstly, the highest preference is for the greater proportional contribution to come from SW2, with 27/59 (46%) of the responses showing this preference, with the highest frequency for the shorter source word in 16/27 (60%) of the responses showing this tendency. Secondly, there is a preference to have the greater proportional contribution from SW1, with 21/59 (36%), with the highest frequency for the shorter source word in 17/21 (81%) of the responses showing this tendency. Thirdly, the least preferred option for the proportional contribution is to have both source words contribute equally to the blend with 11/59 (19%) of the responses showing this tendency. This is especially true of source words that have equal phonemic length forming 10/11 (91%) of the responses to this set of word pairs.

However, when both the left-hand column and the top line in Table 5.51 are considered, the results show that the length of the source word is more influential than its position in the blend, which is clearly shown when considering that only 14/48 (29%) of the responses to source words of different phonemic lengths have the greater proportional contribution coming from the longer source word. Four of twenty (20%) of the responses with SW1>SW2 have a greater proportional contribution from SW1, as in /ħa.li:.ba:j/ < /**ħa.li:b**/ and /ʃ|**a:j**/, and 10/28 (36%) of the responses with SW1<SW2 have the greater proportional contribution from SW2, as in /ta.ban/ < /**t*a***|mr/ and /l|***a.*ban**/.

5.3.2.2. Tendencies for Proportional Contributions from Source Words to Blends from the Experiment

The formula for calculating the proportional contributions from source words to blends was then applied to the data from the experiment, and the results show that there is a preference for the greater proportional contribution to come from the shorter source word in the blend. All 503 responses from the experiment were analysed following the process implemented by Gries.

Table 5.52 below displays the proportional contributions of the source words to blends from the experiment.

Table 5.52: Proportional contributions from SWs to blends from the experiment

Phonemic length of source words	Equal proportions from both SWs	Greater proportion is from SW1	Greater proportion is from SW2	The total frequency of responses with these word pairs
SW1< SW2	2 (1%)	**121 (58%)**	85 (41%)	208 (41%)
SW1 > SW2	3 (2%)	53 (27%)	**144 (72%)**	200 (40%)
SW1 = SW2	**56 (59%)**	10 (11%)	29 (31%)	95 (19%)
The total frequency of responses	61 (12%)	184 (37%)	258 (51%)	503

The results in this table show that 208 (42%) of the responses have an SW1 shorter than SW2, 200 (40%) have an SW2 shorter than SW1, and 95 (19%) have both source words of equal phonemic length.

The results also show a preference for the greater proportional contribution to come from the shorter source word, with 121/208 (58%) of the responses with SW1<SW2 having the greater proportional contribution from SW1, as in /dʒu.ban/ **<** /**dʒu*b***|n/ and /la.|***b*an**/; and 144/200 (72%) with SW1>SW2 having the greater proportional contribution from SW2, as in /tˤam.ja:r/ < /**tˤa.m**|a:.tˤim/ and /xi.|**ja:r**/. This amounts to 265/408 (65%) of the total responses to these two sets of word pairs, representing 53% of the overall number of responses to the experiment (265/503 responses).

The results also show that the source words that have equal phonemic lengths contribute equal proportions to the blend, with 56/95 (59%) of the responses with SW1=SW2 showing this preference, as in /di:n.la:r/ < /**di:.n**|a:r/ and /du:.|**la:r**/.

The results show three preferences for the proportional contributions from all source words to the blends. Firstly, the highest frequency is for the greater proportional contribution to come from SW2, with 258/503 (51%) of the responses showing this tendency, with the highest frequency for the shorter source word in 144/258 (56%) of the responses showing this tendency. Secondly, the greater proportional contribution tends to come from SW1, at 184/503 (37%), with the highest frequency for the shorter source word in 121/184 (66%) of the responses showing this tendency. Thirdly, both source words contribute equal proportions to the blend, with 61/503 (12%) of the responses showing this tendency; and this is especially the case with source words that have equal phonemic length, representing 56/61 (95%) of the responses to this set of word pairs.

However, when both axes are considered, the results show that the length of the source word is more important than its order in the blend, which is clearly shown when considering that only 138/408 (34%) of the responses to source words of different phonemic lengths have the greater proportional contribution to come from the longer source word. Only 53/200 (27%) of the responses with SW1>SW2 have the greater proportional contribution coming from SW1, as in /la.bar/ < /**la.ba**|n/ and /tam|**r**/; and 85/208 (41%) of responses with SW1<SW2 have the greater proportional contribution from SW2, as in /ma.wa:ʔ/ < /**m**|a:ʔ/ and /d|**a.wa:ʔ**/.

The findings of the analysis of data from the experiment support those from the survey. It is generally the case that the greater proportional contribution to the blend comes from the shorter source word, which is mostly the second source word, as shown in Table 5.52.

5.3.2.3. Proportional Contributions from Source Words to Novel Invented Blends: A Summary

This section summarises the findings for tendencies related to examining the feature of the proportional contributions from source words in the 562 (59 from the survey and 503 from the experiment) responses examined, henceforth referred to as the proportional contribution dataset.

Table 5.53 below gives a summary of the results for the proportional contributions from source words to blends in the proportional contribution dataset.

Table 5.53: Proportional contributions from SWs to blends from the proportional contribution dataset

Phonemic length of source words	Equal proportions from both SWs	Greater proportion is from SW1	Greater proportion is from SW2	The total frequency of responses with these word pairs
SW1< SW2	3 (1%)	**138 (58%)**	95 (40%)	236 (42%)
SW1 > SW2	3 (1%)	57 (26%)	**160 (73%)**	220 (39%)
SW1 = SW2	**66 (62%)**	10 (9%)	30 (28%)	106 (19%)
The total frequency of responses	72 (13%)	205 (36%)	285 (51%)	562

The table shows two main preferences for the proportional contributions from source words to blends. Firstly, it is generally the case that the greater contribution comes from the shorter source word, as shown by the frequencies of 58% and 73% for SW1 and SW2 respectively. Secondly, there is a tendency for the source words that have equal phonemic lengths to contribute equal proportions to the blend, as shown by the frequency of 62%.

5.3.3. Stress Patterns of Blends

This section discusses the stress patterns of blends from the survey in section 5.3.3.1 and the experiment in section 5.3.3.2 following the same method used in examining the established Arabic blends in section 5.2.3.3. Section 5.3.3.3 concludes with a summary of the results and findings from both datasets.

Since stress patterns cannot be assigned unless words are phonemically fully represented, only the fully diacritised responses from the survey (59 responses) and the fully vowelised responses from the experiment (503 responses) are suitable to be examined for this feature. Cases of monosyllabic responses are not included in this examination, for obvious reasons.

Table 3.1 for stress assignment in English blends (discussed in section 3.5.3) is used to summarise the results for analysing the novel blends in terms of the feature of stress pattern. The same aspects considered for discussing the stress patterns of established Arabic blends are also used in this discussion, which are:

- Whether the blend has a syllabic size different from/similar to that of both or either source word; and
- Whether the blend exhibits a stress pattern different from/similar to that of either source word.

As also mentioned in section 5.2.3.3, the stress pattern of Arabic words is determined by their prosodic pattern. Nevertheless, it is noticed in the data from the survey and the experiment that blends tend to have a stress pattern that is identical to that of the source word of the same syllabic size.

5.3.3.1. Tendencies for the Stress Patterns of Blends from the Survey

This section discusses the stress patterns of blends from the survey. Of the fully diacritised responses (59 responses) from the survey, 51 responses from the dataset are examined for this feature, since 8 monosyllabic responses are excluded from the data. Of the 51 blends, 48 (94%) have source words of different syllabic sizes and 3 (6%) only have source words of identical syllabic size.

After examining this feature in blends from the survey, it is found that there is a tendency for the blend to have the same stress pattern as that of the second source word, especially when the blend has a syllabic size identical to that of this source word.

Table 5.54 below displays the stress patterns of the responses from the survey while referring to the syllabic size of the source words as having identical or different sizes.

The results show that when both source words have different syllabic sizes, there is a preference for the blends that have a syllabic size identical to that of the second source word to have also a stress pattern identical to that of this source word.

Table 5.54: Stress patterns of blends from the survey (syllabic size of blends X syllabic size of SWs)

<table>
<tr><th>Syllabic size of SWs</th><th>Freq-uency</th><th>Syllabic size of blends to SWs</th><th>Freq-uency</th><th>(Non-) identity of stress in blends and SWs</th><th>No. of syllables</th><th>Examples</th></tr>
<tr><td rowspan="5">SW1$^{\sigma}$≠SW2$^{\sigma}$</td><td rowspan="5">48/51 (94%)</td><td rowspan="2">Bl$^{\sigma}$=SW2$^{\sigma}$</td><td rowspan="2">32/48 (67%)</td><td><b>Bl^{stress}= SW2^{stress}</td><td>31/32 (97%)</td><td>/ʃa.ˈli:b/ < /ʃa:j/ and /ħa.ˈli:b/ / CV.ˈCVVC / < /CVVC/ and /CV.ˈCVVC/</td></tr>
<tr><td>Bl^{stress}=SW1^{stress}</td><td>1/32 (3%)</td><td>/dʒubl/ < /dʒub|n/ and /l|a.ban/ /CVCC/ < /CVCC/ and /ˈCV.CVC/</td></tr>
<tr><td rowspan="2">Bl$^{\sigma}$=SW1$^{\sigma}$</td><td rowspan="2">11/48 (23%)</td><td>Bl^{stress}=SW1^{stress}</td><td>6/11 (55%)</td><td>/da.ˈma:ʔ/ < /da|wa:ʔ/ and /ma:ʔ/ /CV.ˈCVVC/ < /CV.ˈCVVC/ + /CVVC/</td></tr>
<tr><td>Bl^{stress}≠ SW^{stress}</td><td>5/11 (45%)</td><td>/ða.ˈha:s/ < /ˈða.h|ab/ and /m|a:s/ /CV.ˈCVVC/ < /ˈCV.CVC/ and /CVVC/</td></tr>
<tr><td>Bl.$^{\sigma}$≠SW$^{\sigma}$</td><td>5/48 (10%)</td><td>Bl^{stress}≠ SW^{stress}</td><td>5/5 (100%)</td><td>/ða.ha.ˈma:s/ < /ˈða.ha|b/ and /ma:s/ /CV.CV.ˈCVVC/ < /ˈCV.CVC/ and /CVVC/</td></tr>
<tr><td>SW1$^{\sigma}$=SW2$^{\sigma}$</td><td>3/51 (6%)</td><td>Bl.$^{\sigma}$≠SW$^{\sigma}$</td><td>3/3 (100%)</td><td>Bl^{stress}≠ SW^{stress}</td><td>3/3 (100%)</td><td>/ˈdʒu.buz/ < /dʒub|n/ and /x|ubz/ /ˈCV.CvC/ < /CVCC/ + /CVCC/</td></tr>
<tr><td>Total</td><td>51</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

When considering the frequencies based on the (non-)identity of stress position in blends and the source words shown in column 5 of Table 5.54 and without reference to the syllabic size of both source words shown in column 1 of the same table, or the syllabic size of blends to source words shown in column 3 of the same table, the results also support this tendency.

Table 5.55 below displays the overall results regarding the stress patterns of blends from the survey.

Table 5.55: (Non-)identity of stress patterns of blends from the survey

Stress patterns of blends to SWs	**Number of syllables**
$Bl^{stress}=SW2^{stress}$	**31 (61%)**
$Bl^{stress}\neq SW^{stress}$	13 (25%)
$Bl^{stress}=SW1^{stress}$	7 (14%)
Total	**51**
Average frequency	**17**

The table shows that the most frequent preference for blends is to have a stress pattern identical to that of the second source word.

5.3.3.2. Tendencies for Stress Patterns of Blends from the Experiment

This section discusses the stress patterns of blends from the experiment. Of the fully vowelised responses (503 responses) from the experiment, 422 responses from the dataset examined for this feature, since 81 monosyllabic responses are excluded from the data. Of the 422 blends, 366 (87%) have source words of different syllabic sizes and 56 (13%) have source words of identical syllabic sizes.

After examining this feature in blends from the experiment, it is found that there is a tendency for the blends to have a stress pattern that is identical to that of the source word that has a syllabic size identical to that of the blend.

Table 5.56 below displays the stress patterns of the responses from the experiment while referring to the syllabic size of the source words as having identical or different sizes.

Table 5.56: Stress patterns of blends from the experiment (syllabic size of blends X syllabic size of SWs)

Syllabic size of SWs	**Freq-uency**	**Syllabic size of blends to SWs**	**Freq-uency**	**(Non-) identity of stress in blends and SWs**	**Freq-uency**	**Examples**
$SW1^{\sigma} \neq SW2^{\sigma}$	**366/422 (87%)**	**$Bl^{\sigma}=SW2^{\sigma}$**	**203/366 (55%)**	**$Bl^{stress}=SW2^{stress}$**	**197/203 (97%)**	/tˤa.ˈm**a:**r/ < /tˤa.ˈma:.tˤim/ and /xi.ˈja:r/ /CV.ˈCVVC/ < /CV.ˈCVV.CVC/ and /CV.ˈCVVC/
				$Bl^{stress} \neq SW^{stress}$	6/203 (3%)	/ˈʃi.lib/ < /ʃa:j/ and /ħa.ˈli:b/ /ˈCV.CVC/ < /CVVC/ and /CV.ˈCVVC/
		$Bl^{\sigma}=SW1^{\sigma}$	**144/366 (39%)**	**$Bl^{stress}=SW1^{stress}$**	**87/144 (60%)**	/ˈzaj.tar/ < /ˈzaʕ.tar/ and /zajt/ /ˈCVC.CVC/ < /ˈCVC.CVC/ and /CVCC/
				$Bl^{stress} \neq SW^{stress}$	57/144 (40%)	/tˤa.ma:.ˈja:r/ < /tˤa.ˈma:.tˤim/ and /xi.ˈja:r/ /CV.CVV.ˈCVVC/ < /CV.ˈCVV.CVC/ and /CV.ˈCVVC/
		$Bl^{\sigma} \neq SW^{\sigma}$	19/366 (5%)	$Bl^{stress} \neq SW^{stress}$	19/19 (100%)	/ħa.li:.ˈʃa:j/ < /ħa.ˈli:b/ and /ʃa:j/ /CV.CVV.ˈCVVC/ < /CV.ˈCVVC/ and /CVVC/

SW1$^{\sigma}$=SW2$^{\sigma}$	**56/422 (13%)**	**Bl$^{\sigma}$≠SW$^{\sigma}$**	**34/56 (61%)**	**Bl^{stress}≠SW^{stress}**	**34/34 (100%)**	/du:.la:.ˈna:r/ < /di:.ˈna:r/ and /du:.ˈla:r/ /CVV.CVV.ˈCVVC/ < /CVV.ˈCVVC/ and /CVV.ˈCVVC/
		Bl$^{\sigma}$=SW$^{\sigma}$	22/56 (39%)	Bl^{stress}=SW^{stress}	19/22 (86%)	/du:.ˈna:r/ < /du:.ˈla:r/ and /di:.ˈna:r/ /CVV.ˈCVVC/ < /CVV.ˈCVVC/ and /CVV.ˈCVVC/
				Bl^{stress}≠SW^{stress}	3/22 (14%)	/ˈdi:.du:/ < /di:.ˈna:r/ and /du:.ˈla:r/ /ˈCVV.CVV/ < /CVV.ˈCVVC/ and /CVV.ˈCVVC/
Total	**422**					

The results show three main preferences for the stress patterns of blends from the responses to the experiment. Two of them fall within the dataset with source words that have different syllabic sizes and one within the dataset with source words that have identical syllabic sizes.

When the source words have different syllabic sizes, there is a preference for the blends that have a syllabic size that is identical to that of either source word to have also a stress pattern that is identical to that of this source word; and when both source words have identical syllabic sizes, there is a preference for the blends that have a syllabic size different from either source word to have also a stress pattern that is different from that of either source word.

When considering the frequencies based on the (non-)identity of stress position in blends and SWs that are shown in column 5 of Table 5.56 and without reference to the syllabic size of both source words shown in column 1 of the same table, or the syllabic size of blends to SWs shown in column 3 of the same table, the results also support this tendency.

Table 5.57 below displays the overall results regarding stress patterns of blends from the experiment.

Table 5.57: (Non-)identity of stress patterns of blends from the experiment

Stress patterns of blends to SWs	Frequency
$Bl^{stress}=SW2^{stress}$	**197 (47%)**
$Bl^{stress}\neq SW^{stress}$	**119 (28%)**
$Bl^{stress}=SW1^{stress}$	87 (21%)
$Bl^{stress}=SW^{stress}$	19 (5%)
Total	**422**
Average frequency	**106**

The table shows two tendencies for stress patterns in blends. Most blends (47%) tend to have a stress pattern that is identical to that of the second source word, and 28% of the blends tend to have a stress pattern that is different from that of either source word.

5.3.3.3. Stress Patterns in Novel Invented Blends: A Summary

This section summarises the findings for the tendencies related to the feature of stress patterns of blends from the survey (51 responses), and from the experiment (422 responses), henceforth referred to as the stress pattern dataset. Overall, 473 responses constitute this dataset.

Table 5.58 below displays the stress patterns of the responses from the stress pattern dataset while referring to the syllabic size of the source words as having identical or different sizes.

Table 5.58: Stress patterns of blends from the stress pattern dataset (syllabic size of blends X syllabic size of SWs)

Syllabic size of SWs	**Freq-uency**	**Syllabic size of blends to SWs**	**Freq-uency**	**(Non-)identity of stress in blends and SWs**	**Freq-uency**
$SW1^{\sigma} \neq SW2^{\sigma}$	**414/473 (88%)**	**$Bl^{\sigma}=SW2^{\sigma}$**	**235/414 (57%)**	**$Bl^{stress}=SW2^{stress}$**	**228/235 (97%)**
				$Bl^{stress} \neq SW^{stress}$	6/235 (3%)
				$Bl^{stress}=SW1^{stress}$	1/235 (0.4%)
		$Bl^{\sigma}=SW1^{\sigma}$	**155/414 (37%)**	**$Bl^{stress}=SW1^{stress}$**	**93/155 (60%)**
				$Bl^{stress} \neq SW^{stress}$	**62/155 (40%)**
		$Bl^{\sigma} \neq SW^{\sigma}$	24/414 (6%)	$Bl^{stress} \neq SW^{stress}$	24/24 (100%)
$SW1^{\sigma}=SW2^{\sigma}$	**59/473 (12%)**	**$Bl^{\sigma} \neq SW^{\sigma}$**	**37/59 (63%)**	**$Bl^{stress} \neq SW^{stress}$**	**37/37 (100%)**
		$Bl^{\sigma}=SW^{\sigma}$	**22/59 (37%)**	**$Bl^{stress}=SW^{stress}$**	**19/22 (86%)**
				$Bl^{stress} \neq SW^{stress}$	3/22 (14%)
Total	**473**				

The results show five preferences for the stress patterns of established Arabic blends. Two of them fall within the dataset of source words that have identical syllabic sizes and three within the dataset with source words that have different syllabic sizes.

When the source words have different syllabic sizes, there is a high preference for the blends that have a syllabic size that is identical to that of either source word to have also a stress pattern that is identical to that of this source word; and for the blends that have a syllabic size different from that of both source words to have also a stress pattern that is different from that of both source words.

When both source words have identical syllabic sizes, there is a preference for the blends that have a syllabic size different from either source word to have also a stress pattern that is different from that of either source word, and a preference for the blends that have a syllabic size that is identical to that of both source words to have a stress pattern that is also identical to that of both source words.

When considering the preferences based on the (non-)identity of stress position in blends and SWs shown in column 5 of Table 5.58 and without reference to the syllabic size of both source words shown in column 1 of the same table, or the syllabic size of blends to SWs shown in column 3 of the same table, the results also support this tendency.

Table 5.59 below displays the overall results regarding stress patterns of blends from the stress pattern dataset.

Table 5.59: (Non-)identity of stress patterns of blends from the stress pattern dataset

Stress patterns of blends to SWs	**Frequency**
Bl^{stress}=$SW2^{stress}$	**228 (48%)**
Bl^{stress}≠SW^{stress}	**132 (28%)**
Bl^{stress}=$SW1^{stress}$	94 (20%)
Bl^{stress}=SW^{stress}	19 (4%)
Total	**473**
Average frequency	**118**

The table shows two tendencies for stress patterns of blends. The first tendency is for blends to have a stress pattern that is identical to that of the second source word, and the second tendency is for blends to have a stress pattern that is different from that of either source word.

5.4. Further Observations

This section presents some further observations about the data from the survey and the experiment. Section 5.4.1 discusses the cases of homography/homophony in the data, section 5.4.2 discusses reversed responses, section 5.4.3 discusses blends that included short vowels not found in either source word, and finally, section 5.4.4 discusses potential cases of sandwich blends in the data.

5.4.1. Cases of Homophonous Responses

The literature shows that some English blends seem to be blocked because they would be homophonous to existing words (Bauer 1983), such as *dang* < *damn* and *hang*, which is formed in such a way to avoid having the potential blend *hamn* which might be confused with *ham* (Gleitman and Gleitman 2000, 319). Nevertheless, some blends are found to be homophonous to existing words, like the blend *faction* < *fact* and *fiction* meaning “camp” (Fischer 1998, 98).

The distinction between homographs and homophones found in the collected data relates to whether or not the responses included diacritics (for the written responses) and fully pronounced with short vowels (for the spoken responses).

Several responses from the data of this book appeared identical (graphemically or phonemically) to existing words in Arabic. As mentioned in section 2.3.3, there is variation in the diacritisation of the responses to the survey: undiacritised, partially diacritised, and fully diacritised responses. The first two types of responses were considered orthographically since they either lack all diacritics or have incomplete diacritisation. These cases of responses are called homographic blends.

As for the fully diacritised responses from the survey and the responses from the experiment that are phonemically identical to existing words, these are called homophonous blends.

To be judged homographic or homophonous, all responses in the whole data were checked in the *Arabic Dictionary of Meanings* (2010) (accessed via https://www.almaany.com), a comprehensive Arabic online dictionary that provides all existing Arabic words with their etymology, derivatives, and diacritisation. The entry in the dictionary that has an identical root to that of each checked blend was taken to be the one intended for the meaning of this homoform. Accordingly, all these homoforms are treated in the following table as being homophonous forms.

Of the 1483 responses (survey 980 and experiment 503), 262 (18%) responses reflect homographic and homophonous forms of existing words in Arabic. 187 responses are from the survey and 75 are from the experiment. Of the 262 responses, 165 responses reflecting homographic forms, which are all from the survey, and 97 responses reflecting homophonous forms, with 22 responses from the survey and 75 responses from the experiment.

Table 5.60 below displays the frequency of responses to the survey that reflect homographic blends to existing words in Arabic. The responses are listed from the most frequent to the least.

Table 5.60: Homoforms in the whole data

Homoforms	**Frequency**
/dʒubz/ “dry” < /dʒubn/ “cheese” and /xubz/ “bread”	57
/xu.bun/ “fold and sew” < /xubz/ “bread” and /dʒubn/ “cheese”	28
/dʒu.ban/ “types of cheese” < /dʒubn/ “cheese” and /la.ban/ “yoghurt”	17
/mu.wa:ʔ/ “mew” </ma:ʔ/ “water” and /da.wa:ʔ/ “medication”	13
/ma.hab/ “the wind source” < /ma:s/ “diamond” and /ða.hab/ “gold”	13
/ta.man/ “wishing” < /tamr/ “dates” and /la.ban/ “yoghurt”	9
/di.ma:ʔ/ “blood” < /da.wa:ʔ/ “medication” and /ma:ʔ/ “water”	8
/tibn/ “hay” < /tamr/ “dates” and /la.ban/ “yoghurt”	8
/la.dʒan/ “heavy walking”	8
/tˤa.ma:r/ “the high place” < /tˤa.ma:.tˤim/ “tomato” and /xi.ja:r/ “cucumber”	8
/daw.ma:/ “continuation” < /da.wa:ʔ/ “medication” and /ma:ʔ/ “water”	7
/lubn/ “mammals” < /la.ban/ “yoghurt” and /dʒubn/ “cheese”	6
/da:r/ “house” < /di:.na:r/ “dinar” and /du:.la:r/ “dollar”	6
/dʒa.bal/”mountain” < /dʒubn/ “cheese” and /la.ban/ “yoghurt”	5
/dʒa.ban/ “became coward” < /dʒubn/ “cheese” and /la.ban/ “yoghurt”	5
/la.badʒ/ “wipe” < /la.ban/ “yoghurt” and /dʒubn/ “cheese”	4
/xubn/ “fold and sew” < /xubz/ “bread” and /dʒubn/ “cheese”	4
/mað.hab/ “doctrine” < /ma:s/ “diamond” and /ða.hab/ “gold”	4
/xu.bun/ “tense” < /xubz/ “bread” and /dʒubn/ “cheese”	4
/da.wa:m/ “permanence” < /da.wa:ʔ/ “medication” and /ma:ʔ/ “water”	4
/dʒa.lan/ “the sound of opening or closing a door” < /dʒubn/ “cheese” and /la.ban/ “yoghurt”	4
/ta.mal/ “bored” < tamr/ dates” and /la.ban/ “yoghurt”	3
/ħalj/ “accessories” < /ħa.li:b/ “milk” and /ʃa:j/ “tea”	3
/ta.ma.ran/ “practise” < /tamr/ “dates” and /la.ban/ “yoghurt”	2
/ʃa:.jaħ/ “fought” < /ʃa:j/ “tea” and /ħa.li:b/ “milk”	2
/mus.hab/ “lengthy” < /ma:s/ “diamond” and /ða.hab/ “gold”	2
/ta.ban/ “adopt” < tamr/ dates” and /la.ban/ “yoghurt”	2
/lu.bun/ “mammals” < /la.ban/ “yoghurt” and /dʒubn/ “cheese”	2
/ʃajb/ “grey hair” < /ʃa:j/ “tea” and /ħa.li:b/ “milk”	2
Miscellaneous	22 hapax legomena
Total	**262**

Having these types of responses in the datasets could indicate that informants might not know that these are already existing words in Arabic. Secondly, informants could probably know that their responses are existing words but they deliberately formed their novel blends while referring to a new meaning creating by that a new homonym. This goes against Aronoff's (1976, 43) notion of "blocking", according to which the formation of a new (blend) word that happens to be identical to an existing one would be blocked, thus avoiding ambiguity. Nevertheless, homonymy is a typical phenomenon of Arabic where one lexeme has multiple meanings. Thirdly, there might be closeness in the meaning of either of the source words or both to the newly formed blend, which could have given the informants a motivation to make these forms as blends for the given source words. Fourthly, and more importantly, informants could have been avoiding violating the phonotactic rules of Arabic and hence resorting to already existing words whether they were aware of their existence in Arabic or not.

After examining the responses in the whole dataset, the results show that the word pair that has the most frequent response reflecting an identical form to an existing Arabic word is /dʒubn/ and /xubz/ with 57/262 (22%) of the responses reflecting this form.

Of all the homoforms in the whole data, only 2 responses show a meaning relationship with the meanings of the source words that could be interpreted as being a justification for using these forms as blends for the given word pairs. These responses are the homophonous blend /dʒu.ban/ < /dʒubn/ "cheese" and /la.ban/ "yoghurt" and the homographic (partially diacritised) blend /lubn/ < /la.ban/ "yoghurt" and /dʒubn/ "cheese". The meaning of the response /dʒu.ban/ "cheese (pl.)" is close to the meaning of the source word /dʒubn/ "cheese", and the meaning of the response /lubn/ connotes the meaning of both source words /la.ban/ "yoghurt" and /dʒubn/ "cheese", meaning mammals that usually feed their children with milk, which is the basic material from which both yoghurt and cheese are made.

The other homophonous blends in Table 5.60 have meanings that are completely different from those of the source words. Overall, therefore, it appears that the existence of a homophone word does not block the creation of a specific blend, cf. (Aronoff 1976, 43). The meaning relation between the homophone word and the blend in the case of /dʒu.ban/ and /lubn/ is probably fortuitous.

5.4.2. Cases of Blends with Reversed Ordering of Source Words

It is useful to mention at this point a noteworthy observation related to the ordering of the source words in the responses to both the survey and the experiment. Two lists of word pairs (having two different orderings for the same source words) were given as stimuli. The informants' responses are expected to reflect the ordering of the source words as they were presented in the given word pairs. Nevertheless, some responses are "reversed"—that is, the source words are blended not in the order in which they are presented to the informants, namely SWI-SWII, but in the reversed order, namely SWII-SWI. These responses are referred to in this book as "reversed blends".

In the total of 1483 responses, there are 114 reversed blends, with 35 given to the first ordering of word pairs and 79 to the second ordering of word pairs. Of the 114 reversed blends, 100 are from the survey, with 68 given to the first ordering and 32 to the second ordering; and 14 from the experiment, with 3 given to the first ordering and 11 to the second ordering.

An example from the survey is the reversed blend /dʒu.ban/ given as a response to the word pair /la.***b*****an**/ "yoghurt" and /**dʒu*****b***n/ "cheese", and an example from the experiment is the reversed blend /ʃa.li:b/ given as a response to the word pair /ħ**a.li:b**/ "milk" and /**ʃ**a:j/ "tea". These cases of reversed blends seem to reflect the English tendency to have the shorter source word first, which could indicate some kind of influence by the English blend-formation patterns.

Table 5.61 below displays the frequency of reversed blends in the whole dataset of the novel, invented blends.

Table 5.61: Reversed blends in the whole dataset

Frequency of reversed blends	1st ordering	2nd ordering	Total
Survey	32	68	100
Experiment	3	11	14
Total	35	79	114

The results show that the frequency of reversed blends is higher in the responses given to the second ordering, where informants appear to prefer to use the first ordering they were presented with over the second one. They also seem to have used the same blend they formed for the first ordering of a word pair when given the reversed ordering of the same word pair, rather than forming a different blend.

The existence of reversed blends in the collected data for this book shows that blending in Arabic sometimes does not obey the given ordering of the source words, especially when there is no conventional temporal or sequential ordering that requires the blend maker to maintain this ordering. For example, the blend /dˤab.xan/ ضَبْخَن "smog" is formed from /dˤa.ba:b/ ضَبآب "fog" and /dux.xa:n/ دُخآن "smoke", whose order does not reflect the temporal or sequential relationship. This is an interesting case as compared to English *smog*.

Nevertheless, the two established Arabic blends /dʒaw.qal/ < /na.qal/ and /dʒaw/, and /haw.mal/ "airborne" < /ha.wa:ʔ/ and /ħa.mal/ have the ordering of the source words reversed although they are part of a syntactic structure where the verb /ħa.mal/ is followed by an object /ha.wa:ʔ/.

5.4.3. Cases of Blends with New Added Short Vowels

As discussed in section 2.3.3, it is usually the case in Arabic that short vowels are represented by diacritics placed over or below the graphemes. The short vowels usually form the nucleus of a syllable whose onset is represented by this grapheme.

The fully diacritised responses from the survey (59 responses) and the fully vowelised responses from the experiment (503 response) included cases of blends that have new short vowels, i.e. vowels not found in either source word. Overall, 49 responses have new short vowels (2 from the survey, 47 from the experiment).

The cases of blends in the data that include new short vowels either have all the short vowels completely new or a combination of short vowels contributed from the source words and new short vowels added to the consonants contributed from the source words.

An example from the survey is the blend /xi.ja:.tˤum/ < /**xi.j*a:***r/ "cucumber" and /tˤa.m***a:*.tˤim**/ "tomato" with the short vowel /u/ not coming from either source word. An example from the experiment is the blend /ti.bin/ < /la.ban/ and /tamr/, a reversed blend with completely new short vowels added to the blend.

Table 5.62 below displays all blends in the whole data set containing new short vowels (shown through underlining).

Table 5.62: Blends with new short vowels

Blends	SWs	Frequency
/xu.bin/	/xubz/ and /dʒubn/	3
/ti.bin/	/tamr/ and /la.ban/	3
/ta.mir.ban/	/tamr/ and /la.ban/	2
/ma:.hib/	/ma:s/ and /ða.hab/	2
/lu.bun/	/la.ban/ and /dʒubn/	2
/la.mir/	/la.ban/ and /tamr/	2
/xub.zi.dʒin/	/xubz/ and /dʒubn/	1
/xub.bin/	/xubz/ and /dʒubn/	1
/xu.bidʒ.bin/	/xubz/ and /dʒubn/	1
/xi.ja:.tˤum/	/xi.ja:r/ and /tˤa.ma:.tˤim/	1
/xibn/	/xubz/ and /dʒubn/	1
/xa.ja:.tˤum/	/xi.ja:r/ and /tˤa.ma:.tˤim/	1
/xaj.tˤam/	/xi.ja:r/ and /tˤa.ma:.tˤim/	1
/xa.dʒubn/	/xubz/ and /dʒubn/	1
/xa.bin/	/xubz/ and /dʒubn/	1
/tˤux.ja:r/	/tˤa.ma:.tˤim/ and /xi.ja:r/	1
/tˤum.ja:r/	/tˤa.ma:.tˤim/ and /xi.ja:r/	1
/tˤa.max.ja:r/	/tˤa.ma:.tˤim/ and /xi.ja:r/	1
/tˤa.matˤ.ja:r/	/tˤa.ma:.tˤim/ and /xi.ja:r/	1
/tˤa.ma.ja:r/	/tˤa.ma:.tˤim/ and /xi.ja:r/	1
/ʃi.lib/	/ʃa:j/ and /ħa.li:b/	1
/ʃa:.jib/	/ʃa:j/ and /ħa.li:b/	1
/ma.sa.ðab/	/ma:s/ and /ða.hab/	1
/lub.dʒub/	/la.ban/ and /dʒubn/	1
/lu.dʒun/	/la.ban/ and /dʒubn/	1
/lib.tum/	/la.ban/ and /tamr/	1
/lib.mur/	/la.ban/ and /tamr/	1
/li.bidʒ.bin/	/la.ban/ and /dʒubn/	1

Blends	SWs	Frequency
/lab.mur/	/la.ban/ and /tamr/	1
/lab.dʒin/	/la.ban/ and /dʒubn/	1
/la.mur/	/la.ban/ and /tamr/	1
/ħa.lajʃ/	/ħa.li:b/ and /ʃa:j/	1
/dʒu.lubn/	/dʒubn/ and /la.ban/	1
/dʒu.linn/	/dʒubn/ and /la.ban/	1
/dʒu.biz/	/dʒubn/ and /xubz/	1
/dʒil.bin/	/dʒubn/ and /la.ban/	1
/dʒi.bil/	/dʒubn/ and /la.ban/	1
/dʒa.baz/	/dʒubn/ and /xubz/	1
/di:.na.la:r/	/di:.na:r/ and /du:.la:r/	1
/da.wa.ma:ʔ/	/da.wa:ʔ/ and /ma:ʔ/	1
/bin.dʒin/	/la.ban/ and /dʒubn/	1
Total		**49**

The table shows that the most frequent new short vowel is /i/, then come /a/ and /u/. The use of /i/ more often may be attributed to the effect of the Arabic dialects which tend to frequently use this short vowel.

The results also show that the most frequent word pairs that have responses with new short vowels are /dʒubn/ and /xubz/, /dʒubn/ and /la.ban/, and /tamr/ and /la.ban/ in both given orderings.

Table 5.63 below summarises the results as to the word pairs that are the most frequent with responses having new short vowels added.

Table 5.63: Most frequent word pairs whose responses have new short vowels

1st ordering of word pairs	Frequency of responses to this word pair	2nd ordering of word pairs	Frequency of responses to this word pair	Total
/dʒubn/ and /xubz/	2	/xubz/ and /dʒubn/	9	11
/dʒubn/ and /la.ban/	4	/la.ban/ and /dʒubn/	7	11
/tamr/ and /la.ban/	5	/la.ban/ and /tamr/	6	11
/xi.ja:r/ and /tˤa.ma:.tˤim/	3	/tˤa.ma:.tˤim/ and /xi.ja:r/	5	8
-	-	/ma:s/ and /ða.hab/	3	3
/ʃa:j/ and /ħa.li:b/	2	/ħa.li:b/ and /ʃa:j/	1	3
/da.wa:ʔ/ and /ma:ʔ/	1	-	-	1
-	-	/di:.na:r/ and /du:.la:r/	1	1
Total	**17**	**Total**	**32**	**49**

The table shows that the first three lines with both orderings of the source words have the most frequent responses with new vowels added by the informants. There is no clear reason for this tendency, but it could be because these words are so commonly used in our daily life to the extent that using them is affected by the dialect where the vowel /i/ is commonly inserted to avoid producing consonant clusters.

5.4.4. Cases of Sandwich Blends

Arabic blends, whether formed following the classical root-and-pattern method or the concatenation method, generally do not have a fracto-lexeme from one source word sandwiched within the other source word, as it is found in English (discussed in section 1.1.1). Nevertheless, there are a few cases like that in the novel, invented blends of this book.

Of the overall data (1483 responses), 19 (1.28%) responses are sandwich blends: 11 blends from the survey, and 8 blends from the experiment. All cases of sandwich blends from the survey are undiacritised responses, where graphemes are cut from one source word and sandwiched into the other, whereas those from the experiment are all fully vowelised. In these cases of responses, source words have multiple cut-off points.

Table 5.64 below displays these cases of sandwich blends from the survey.

Table 5.64: Sandwich blends from the survey

Sandwich blends	**Process**	**Source words**	**Frequency**
/ldʒn/	/dʒ/ is sandwiched inside /la.ban/ replacing /b/	/la.ban/ and /dʒubn/	5
/zʕjtr/	/j/ is sandwiched inside /zaʕ.tar/	/zaʕ.tar/ and /zajt/	2
/ħʃi:b/	/ʃ/ is sandwiched inside /ħa.li:b/ replacing /l/	/ħa.li:b/ and /ʃa:j/	1
/tˤxa:tˤm/	/x/ is sandwiched inside /tˤa.ma:.tˤim/ replacing /m/	/tˤa.ma:.tˤim/ and /xi.ja:r/	1
/zjr/	/j/ is sandwiched inside /zaʕ.tar/ replacing /ʕt/	/zaʕ.tar/ and /zajt/	1
/zʕtjr/	/j/ is sandwiched inside /zaʕ.tar/	/zaʕ.tar/ and /zajt/	1
Total			**11**

The table shows that the most frequent sandwich blend is /ldʒn/ given as a response to the word pair /la.ban/ and /dʒubn/.

It is noticed that the blend /zʕjtr/ raises an issue related to source word recognisability. Unlike English, where one source word is “intercalated” within the other (e.g. ambiSEXtrous) and entirely recognisable, here it is difficult to identify the intercalated source word from just one phoneme in the blend (Mattiello 2013, 7, 57). Nevertheless, it could be similar to the case of the blend *chunnel* when “explained as a combination of the whole consonantal skeleton of the form *channel* plus the vowel of the word *tunnel*” rather than as a combination of the first segment *ch-* from *channel* and the last part -*unnel* from *tunnel* (Hamans 2010, 455).

Table 5.65 below displays these cases of sandwich from the experiment.

Table 5.65: Sandwich blends from the experiment

Sandwich blends	Process	Source words	Frequency
/zaj.tar/	/j/ is sandwiched inside /zaʕ.tar/ replacing /ʕ/	/zaʕ.tar/ and /zajt/	3
/la.dʒan/	/dʒ/ sandwiched inside /la.ban/ replacing /b/	/la.ban/ and /dʒubn/	3
/lu.dʒan/	/dʒu/ undergoes metathesis /udʒ/ and is sandwiched inside /la.ban/ replacing /ab/	/la.ban/ and /dʒubn/	1
/du:.da:r/	/d/ is sandwiched inside /du:.la:r/ replacing /l/	/du:.la:r/ and /di:.na:r/	1
Total			**8**

The table shows that the most frequent sandwich blends are /zaj.tar/ and /la.dʒan/ given as responses to the word pairs /zaʕ.tar/ and /zajt/, and /la.ban/ and /dʒubn/.

6. Conclusions

6.1. Preliminaries

The question that initiated this book was: Can we "brunch" in other languages? Or, more technically: Do native speakers of other languages form blends in the same way that English blends are formed?

Blends in Arabic seem to have received little attention in earlier work resulting in the absence of any systematic, quantitative or comparative research on them. Accordingly, this language is in a way a convenient choice as the target of investigation for a study of the cross-linguistic validity of tendencies and principles of blending.

Moreover, the morphology of Arabic is so fundamentally different from that of English that an expectation could arise of dissimilarity in blending as well. Hence the choice of English and Arabic seemed appropriate in response to the statement by Kaunisto (2013, 6) that "[It] might be interesting to examine the structural aspects of blend words in different languages in a contrastive or comparative fashion".

Since the most detailed existing research on blending has focused on English, the research question addressed in this book was as follows: To what extent does blend formation in Arabic follow tendencies that are similar to those identified in English?

The predominantly non-concatenative, root-and-template nature of Arabic morphology means that we might expect processes of this nature also to be operative in blending. But, are they completely operative? Or, does blending in Arabic follow, in any way, the concatenative patterns that have been found to govern blending in English and other European languages? This is the central issue that this book set out to investigate.

Arabic is not an exception amongst other languages of the world that have been influenced by English whether as an international language or as a lingua franca. This means that, as far as this book is concerned, there is potential interference from English on the blenders' decision when forming their blends once given potential source words. Therefore, the formation of new modern blends according to a concatenative process in addition to, or rather than, a non-concatenative, root-and-template one could be viewed as "borrowed morphology" (Amiridze, Arkadiev and Gardani 2015).

Amiridze, Arkadiev and Gardani (2015, 1) state that “a high intensity of contact” is “necessary for morphological borrowing to occur”. Hence, due to language contact, whether “structurally” inspired through studying (in) English, or “sociolinguistically inspired” through living within an English-speaking community in addition to the fact that there is a tendency for derivational morphology “to be more susceptible to borrowing” (Amiridze, Arkadiev and Gardani 2015, 9, 17), borrowings from English are widespread in Arabic and it might be thought that English-type processes would also be used when forming neologisms, including blends, in Arabic.

Moreover, I would add and agree with Dressler’s (2000, 6) viewpoint as to the universality of preferences which he states to be “expected to apply more consistently to extragrammatical phenomena than to the morphological rules encapsulated within grammar”. This means that since blending is classified as an extragrammatical morphological phenomenon, it is expected to find “universal preferences” common to various languages.

6.2. Summary of Findings

Examination of the structure of Arabic blends has revealed that there are two methods of forming blends in Arabic. The first method, seen in classical Arabic blends and some modern blends, involves the use of the root-template type of patterning that is characteristic of Arabic morphology in general. Here, the roots of two or more words are involved in the combination process and a prosodic pattern is overlaid on them. These types of blends can, therefore, be regarded as resulting from the prosodic-morphological processes that typically govern word formation in Arabic. Yet, many modern Arabic blends appear to exhibit another scheme, one that is characterised by the sequential joining of word parts. In such cases, there is at work a process of concatenative non-affixational derivation of the type found in English and some other European languages, which emerges to govern the formation of such words where the word-and-pattern formation process is in action, and not root-and-pattern.

Three main features of the structure of such concatenative blends in Arabic have been investigated in this book: the cut-off points in the source words, the proportional contributions from source words to blends, and the stress patterns of the blends. Several tendencies have been identified based on these features for blends in English and these were used to guide the investigation of the Arabic data.

The findings were as follows:

- Most blends in Modern Arabic are characterised by the sequential joining of segments—fracto-lexemes—from their source words, in a way where the fore part from the first source word adjoins to the last part from the second source word. The concatenative joining requires that the source words be cut sequentially at one point—a cut-off point; it is generally the case that the cut-off points occur at syllabic joints or between syllabic constituents.
- The concatenative joining reflects two variants for the length of fusion. There is a fusion that occurs at one point, and another that expands over many points. The former does not involve common elements from the joined segments, in which case, there is no potential overlap in the blend, whereas, the latter may involve common segments, and definitely show overlap in the blend.
- The concatenative joining allows for variations in the types of fusion where the segments adjoin—variations that are similar to the ones identified in connection with blend formation in English. The most common types of fusion are resyllabification, syllabic maintenance, and onset replacement.
- It is generally the case that the greater proportional contribution comes from the shorter source word; when the source words have equal phonemic lengths, they tend to contribute equal proportions to the blend.
- It is generally the case that the stress pattern of the blend is identical to that of the source word that has identical syllabic size as that of the blend, and it is mostly the second source word, especially with the concatenative blends.

To sum up, these blending patterns could imply that the blenders may have been influenced by either or both of the following factors.

- English as an international language: The influence of English is evident in all aspects of life like (social) media or entertainment as is the case with movies, series, and songs.
- Language contact: Participants in the study could have been influenced by English because they have immediate contact with the native speakers of English (since they are living in Newcastle), or are studying in English whether in the UK or Iraq, or are studying English as a major in Iraq.

APPENDICES

A. IPA Mapping for Arabic Consonants and Vowels

Arabic consonants	IPA symbol selection
ا	a:
ب	b
ت	t
ث	θ
ج	dʒ
ح	ħ
خ	x
د	d
ذ	ð
ر	r
ز	z
س	s
ش	ʃ
ص	$s^ʕ$
ض	$d^ʕ$
ط	$t^ʕ$
ظ	$ð^ʕ$
ع	ʕ
غ	ɣ
ف	f
ق	q
ك	k
ل	l
م	m
ن	n
ه	h
و	w
ي	j
ء	ʔ
َ◌	a

◌ِ	**i**
◌ُ	**u**
ا	**a:**
ى	**a:**
ي	**i:**
وُ	**u:**

B. Blends from Classical Arabic

1. *baεthar(a)* بَعْثَرَ "scatter" < *baεath(a) 'athār(a)* بَعَثَ أَثَآرَ "grub" and "arouse"
2. *baḥthar(a)* بَحْثَرَ "diffuse" < *baḥth(a) bathr(a)* بَحَثَ بَثَّرَ "search" and "spread"
3. *balεam* بَلْعَم "oesophagus" < *balaε(a) ṭaεm* بَلَعَ طَعْمْ "gulp" and "taste"
4. *balqaε(a)* بَلْقَعَ "a deserted land" < *balq buqεah* بَلْقْ بُقْعَه "wild" and "area"
5. *barqal* بَرْقَل "a lier" < *barq qawl* بَرْق قَول "lightening" and "talking"
6. *barqash(a)* بَرْقَش "using different colours while carving" < *baraq naqash* بَرْقَ نَقْش "shimmer" and "carve"
7. *basmal(a)* بَسْمَل "said in the name of Allāh" < *bism Allāh* بِسْم الله "in the name of Allāh"
8. *buḥtur* بُحْتُر "a short, tight man" < *batar(a) ḥatar(a)* بَتَرَ حَتَرَ "amputate" and "reduce"
9. *burquε* بُرْقُع "veil" < *baraq(a) ruqεah* بَرَقَ رُقْعَه "glance" and "a piece of cloth"
10. *ḍabkhan* ضَبْخَن "smog" < *ḍabāb dukhān* ضَبآب دُخآن "fog" and "smoke"
11. *dameaz(a)* دَمْعَزَ "said may "Allāh perpetuate greatness" < *dām εizz* "perpetuated" and "greatness"
12. *darbakh(iy)* دَرْبَخِي "someone from the region of dārulbaṭṭīkh", *dār* "house" and *baṭṭīkh* "melon", " the name of a region named after an open market in old Iraq" < *dār baṭṭīkh* دآر بَطّيخ "house" and "melon"
13. *ḍibaṭr* ضِبَطْر *ḍibaṭr* "powerful" < *ḍabaṭ(a) ḍabar(a)* ضَبَطَ ضَبَرَ "to regulate" and "to gather".
14. *εabdar(iy)* عَبْدَرِي "someone from the family of Ɛabdiddār" < *εabd* "slave" and "house"
15. *εabqas(iy)* عَبْقَسِي "someone from the family of Ɛbdul-qays", "a famous name for an Arab tribe by the 6th Century AD" < *εabd qays* عَبْد قَيْس "slave" and "Qays" (a male name)
16. *εabsham(iy)* عَبْشَمْي "someone from the family of εabdi shams", which was a famous name for an Arab tribe by the 6th Century AD. < *εabd shams* عَبْد شَمْس "slave" and "sun"
17. *εajraf(a)* عَجْرَفَ "be arrogant" < *εajar(a) jaraf(a)* عَجَرَ جَرَفَ "twist neck" and "drift"

18. *εuṣlub* عُصْلُب "a huge man" < *εaṣab ṣalb* عَصَب صَلْب "sinew" and "hard"
19. *farjal(a)* فَرْجَلَ "widen a pace" < *faraj(a) rijl* فَرَجَ رِجْل "widen" and "leg"
20. *firnub* فِرْنُب "rodent" < *fa'r 'arnab* فَأر أرْنَب "mouse and rabbit"
21. *ghaslab(a)* غَسْلَبَ "snatch" < *ghaṣab(a) salab(a)* غَصَبَ سَلَبَ "grab" and "spoliation"
22. *ghathmar(a)* غَثْمَرَ "spoil, mess up" < *ghatham(a) ghathar(a)* غَثَمَ غَثَرَ "mix" and "immoral"
23. *ḥabqur* حَبْقُر "hailstone" < *ḥabb qurr* حَبّ قُرّ "seed-like" and "glacial"
24. *ḥadqal* حَدْقَل "moving eyes in a circle way while looking" < *ḥadaqah naqal* حَدَقَه نَقَل "pupil of the eye" and "move"
25. *ḥamdal(a)* حَمْدَلَ "said praise be to Allāh" < *ḥamad(a) Allāh* حَمْد الله "praised Allāh"
26. *ḥarkal(a)* حَرْكَلَ "a mode of walking" < *ḥarakah rijl* حَرَكَه رِجْل "movement" and "leg"
27. *ḥasbal(a)* حَسْبَلَ "said Allāh suffices" < *ḥasb Allāh* حَسْب الله "suffice" and "Allāh"
28. *ḥawlaq(a)* حَوْلَقَ "said there no change or strength but by Allah" < *ḥawl quwwah* حَوْل قُوّه "change" and "strength"
29. *ḥayεal(a)* حَيْعَلَ "said come to prayers or to good work" < *ḥayyi εalā* حَيِّ عَلى "come" and "to"
30. *ḥayhal(a)* حَيْهَلَ "said come and welcome together" < *ḥayyi hallā* حَيِّ هَلّاَ "come" and "welcome"
31. *ḥidbīr* حِدْبِير "hunchback" < *ḥadab kabīr* حَدَب كَبير "humback" and "big"
32. *ḥiṣkaf(iy)* حِصْكَفْي "someone from the region of ḥiṣnu kayfā" < *ḥiṣn kayf* حِصْن كَيْف "a fortress" and "kayfā" (n-ArbW) "the name of a town in Turkey that looks like a fortress"
33. *ḥuthful* حُثْفُل "leftovers at the bottom of a pot" < *ḥathth tifl* حَثّ تِفْل "leftover" and "little"
34. *jaεfad(a)* جَعْفَدَ "said may Allāh make me a redemption for you" < *jaεal(a) fidā'* جَعَلَ فِدآء "make" and "redemption".
35. *jalεad* جَلْعَد "stern" < *jalad jaεd* جَلَد جَعْد "fortitude" and "fuzzy"
36. *jalmad* جَلْمَدْ "rock" < *jald jumd* جَلْدْ جُمْدْ "hard" and "solid".
37. *jamhar(a)* جَمْهَرَ "mass" < *jamar(a) jahar(a)* جَمَرَ جَهَرَ "gather" and "announce"
38. *judhmur* جُذْمُر "source, origin" < *jidhm jadhr* جِذْم جَذْر "cut" and "root"

39. *jurthum* جُرْثُم "change structure, origin" < *jurm juthm* جُرْم جُثْم "root, guilt" and "nightmare"
40. *karbal(a)* كَرْبَلَ "laxity in legs" < *kabal(a) rabal(a)* كَبَلَ رَبَلَ "shackle" and "fleshy"
41. *kharfaj(a)* خَرْفَجَ "living a luxurious life" < *kharaj(a) faraj* خَرَجَ فَرَج "left" and "relief"
42. *māsh'al(a)* مَشألَ " said by the will of Allah" < *māshā' Allah* مآشآء الله "what Allah wills"
43. *mashkan(a)* مَشْكَنَ "said what Allāh wills, it shall be" < *māshā' kān* مآشآء كآن "what He wills, should be"
44. *numruq* نُمْرُق "a small pillow" < *namaq raqq* نَمَق رَقّ "embellish" and "soften"
45. *qaɛfaz(a)* قَعْفَزَ "sitting unassured" < *qaɛad(a) fazz* قَعَدَ فَزَّ "sit" and "bounce"
46. *qashɛam* قَشْعَم "aged" < *qashɛ qadim* قَشْع قَدِم "dry skin" and "become old"
47. *qaṣlab* قَصْلَب "rigorous" < *qawiy ṣalb* قَوِي صَلْب "strong" and "hard"
48. *rasɛan(iy)* رَسْعَني "someone is from the region of ra'sulɛayn" < *ra's ɛayn* رأس عَين "ra'sulɛayn—a place in Oman"
49. *sabḩal(a)* سَبْحَلَ "said glory be to Allāh" < *sabbaḩ Allāh* سَبَّحَ الله "glorified" and "Allāh"
50. *sabṭar(a)* سَبْطَرَ "speed up while walking" < *sabaṭ(a) sār(a)* سَبَطَ سآرَ "hasten" and "walk"
51. *ṣaɛlak(a)* صَعْلَكَ "wretch" (v) < *ṣaɛɛar(a) falak(a)* صَعَّرَ فَلَكَ "pride" and "lack"
52. *saḩjal(a)* سَحْجَلَ "rub and shine" < *saḩal(a) jalā* سَحَلَ جَلاَ "scrub/rub" and "refine/polish"
53. *ṣahṣaliq* صَهْصَلْق "vociferous" < *ṣahala ṣalaqa* صَهَلَ صَلَقَ "to neigh" and "to wail".
54. *ṣalkhad* صَلْخَد "smooth rock" < *ṣald ṣakhd* صَلْد صَخْد "hard and rough"
55. *samɛal(a)* سَمْعَلَ "said peace be upon you" < *sallam(a) ɛalā* سَلَّمَ عَلى "peace" and "upon"
56. *saqzan(iy)* سَقْزَنِي "someone belongs to the place called sūqumāzin" < *sūq māzin* سُوق مآزِن "market" and "Māzin" (a male name)
57. *shaqaḩṭab* شَقَحْطَب "splitting wood" < *shaqq(a) ḩaṭab* شقَّ حَطَب "split" and "wood"
58. *shaṣlab* شَصْلَب "serious" < *shadīd ṣalb* شَديد صَلْب "severe" and "hard"

59. *ṣildim* صِلْدِم "solid and hard" < *ṣald ṣadm* صَلْد صَدْم "smooth rock" and "clash"
60. *ṭalbaq(a)* طَلْبَقَ "said may Allāh prolong your existence" < *ṭāl(a) baqā'* طآلَ بَقآء "prolonged" and "existence"
61. *thufruq* ثُفْرُق "the skin on the stone of date" < *thafr farq* ثَفْر فَرْق "opening" and "split"

C. Blends from Modern Arabic

1. *'anarkaziy* أنَركَزي < *'anā markaziy* أنا مَركَزي “ego” and “central”
2. *'anfam(iy)* أنْفَمِي < *'anf fam* أنف فَم “nose” and “mouth”
3. *'arbajul* أربَجُل < *'arbaεah 'arjul* أربعه أرجُل “four” and “legs”
4. *banaṣr* بَنَصر <*bank maṣr* بَنك مَصر “bank” and “Egypt”
5. *barmā’iy* بَرمآئي “amphibian”< *barr mā’iy* بَرّ مآء “land” and “water”
6. *baṭjal* بَطْجَل “gastropoda”<*baṭn rijl* بَطن رِجل “abdomen” and “leg”
7. *bayṣaṭr* بَيسَطْر < *bayn ṣaṭr* بَين سَطْر “between” and “two lines”
8. *darεam(iy)* دَرْعَمِي “a graduate from the House of Sciences in Egypt” < *dār alεulūm* دآر العلوم “house” and “sciences”
9. *dawfam(iy)* دَوفَمِي “cyclostomes” < *dā’iriy fam* دآئِري فَم “circular” and “mouth”
10. *εaṣjanāḥ* عَصْجَنآح “neuropteran” < *εaṣab janāḥ* عَصَب جَنآح “nerve” and “wing”
11. *faqbanafsaj* فَقْبَنَفْسَج “ultraviolet” < *fawq banafsaj* فَوق بَنَفْسَج “ultra and violet”
12. *faṣεamiy* فَصْعَمِي “someone who speaks standard and colloquial at the same time” < *faṣīḥ εāmmiy* فَصِيح عآمِّي “standard” and “colloquial”
13. *fawsawiy* فَوسَوِي “above and normal” < *fawq sawiy* فَوق سَوي “above” and “normal”
14. *fawṣawtiy* فَوصَوتِي “supersonic” < *fawq ṣawtiy* “super and sonic”
15. *ghimjanāḥ* غِمْجَنآح “coleoptera” <*ghimd janāḥ* غِمْد جَنآح “sheath” and “wing”
16. *ghishjanāḥ* غِشْجَنآح “ hymenoptera” < *ghishā’ janāḥ* غِشآء جَنآح“membrane” and “wing”
17. *ḥalqaẓah* حَلْقَظَه “dreaming while awake” < *ḥulm yaqẓah* حُلم يَقَظَه “dream” and “wakefulness”
18. *ḥaynabāt* حَينَبَآت < *ḥayawān nabāt* حَيَوآن نَبآت “animal” and “plant”
19. *ḥaythūm* حَيثُوم < *ḥayawān jurthūmah* حَيَوآن جُرثُومه “animal” and “germ”
20. *ḥayzaman* حَيزَمَن < *ḥayyiz zamān* حَيِّز زَمآن “space” and “time”
21. *jadhrijl* جَذرِجْل *“*rhisopoda” < *jadhr rijl* جَذر رِجْل “root” and “leg”
22. *khāmadrasahiy* خآمَدْرَسي < *khārij madrasah* خآرِج مَدْرَسه “outside” and “school”
23. *liεnifiy* لِعْنِفِي “malacopterigiens” < *laiyin zuεnufah* لَيِّن زُعْنُفَه “soft” and “scale”

24. *musjanāḥ* مُسْجَنآح "orthoptera" < *mustaqīm janāḥ* "straight/even" and "wing"
25. *nazjan* نَزْجَن <*nazaεa hidrojīn* نَزَعَ هيدروجين "remove and hydrogen"
26. *qabḥarb* قَبْحَرب < *qabl ḥarb* قَبل حَرب "before" and "war"
27. *qabmīlādiy* قَبْمِيلآدي < *qabl mīlādiy* قَبْل مِيلادي "before" and "Dawn"
28. *qabtārīkhiy* قَبْتآريخي < *qabl tārīkh* قَبْل تآرِيخ "before" and "history"
29. *qiṭsar* قِطْسَر < *qiṭār sarīε* قِطآر سَريع "train" and "fast"
30. *rakmaj(a)* رَكْمَجَه "surfing" <*rakaba mawj* رَكَبَ مَوْج "ride" and "waves"
31. *shankabūtiyyah* شَنْكَبوتِيَّه < *shabakah εankabūtiyyah* شَبَكه عَنْكَبوتيَّه "web and spider"
32. *shibzāl* شِبْزآل "albuminoid" < *shibh zalāl* شِبه زَلآل "semi and albumin"
33. *taḥshuεūriy* تَحْشُعُوري < *taḥt shuεūriy* تَحت شُعُوري "under" and "conscious"
34. *sarnamah* سرْنَمَه < *sayr nawm* سَير نَوم "walking" and "sleeping"
35. *ḥalma'(a)* حَلْمَأ < *ḥall(a) mā'* حَلّ ماء "dissolve" and "water"
36. *zamkan* زَمْكَن < *zamān makān* زَمآن مَكآن "time" and "place"
37. *hawmal(a)* هَومَل "airborne" < *ḥamala hawā'* حَمَل هَوآء "air" and "carry" rev.
38. *jawqal(a)* جَوقَل "airborne" < *naqala jaw* نَقَلَ جَو "air" and "transport" rev.

D. The List of Stimuli Used in the Methods of Data Collection

Stimuli	Transcription and glossing
1. جُبْن + خُبْز	/dʒubn/ “cheese” + /xubz/ “bread”
2. جُبْن + لَبَن	/dʒubn/ “cheese” + /la.ban/ “yoghurt”
3. زَيت + زَعْتَر	/zajt/ “oil” + /zaʕ.tar/ “thyme”
4. دَوآء + مآء	/da.wa:ʔ/ “medication” + /ma:ʔ/ “water”
5. دُولآر + دينآر	/du:.la:r/ “dollar”+ /di:.na:r/ “dinar”
6. تَمْر + لَبَن	/tamr/ “dates” + /la.ban/ “yoghurt”
7. خِيار + طَماطِم	/xi.ja:r/ “cucumber” + /tˤa.ma:.tˤim/ (n-Arb.W) “tomato”
8. شاي + حَليب	/ʃa:j/ “tea” + /ħa.li:b/ “milk”
9. ذَهَب + مآس	/ða.hab/ “gold” + /ma:s/ “diamond”
10. خُبْز + جُبْن	/xubz/ “bread” + /dʒubn/ “cheese”
11. لَبَن + جُبْن	/la.ban/ “yoghurt” + /dʒubn/ “cheese”
12. زَعْتَر + زَيت	/zaʕ.tar/ “thyme” + /zajt/ “oil”
13. مآء + دَوآء	/ma:ʔ/ “water” + /da.wa:ʔ/ “medication”
14. دينآر + دُولآر	/di:.na:r/ “dinar” + /du:.la:r/ “dollar”
15. لَبَن + تَمْر	/la.ban/ “yoghurt” + /tamr/ “dates”
16. طَماطِم + خِيار	/tˤa.ma:.tˤim/ “tomato” + /xi.ja:r/ “cucumber”
17. حَليب + شاي	/ħa.li:b/ “milk” + /ʃa:j/ “tea”
18. مآس + ذَهَب	/ma:s/ “diamond” + /ða.hab/ “gold”

E. Analysis of Established Arabic Blends in Terms of the Four Identified Blending Features

Blend	RC SW1	RC SW2	WP feature	CON method	Level of conformity out of four
1./barqal/	Y	Y	Y	N	3
2./damʕaz/	Y	Y	Y	N	3
3./ʕabdar/	Y	Y	Y	N	3
4./ʕabqas/	Y	Y	Y	N	3
5./ʕabʃam/	Y	Y	Y	N	3
6./ħajhal/	P	Y	Y	N	3
7./dʒaʕfad/	Y	Y	Y	N	3
8./maʃʔal/	Y	Y	Y	N	3
9./maʃkan/	Y	Y	Y	N	3
10./qaʕfaz/	Y	Y	Y	N	3
11./saħdʒal/	Y	Y	Y	N	3
12./tˁalbaq/	Y	Y	Y	N	3
13./sarnam/	Y	Y	Y	N	3
14./rakmadʒ/	Y	Y	Y	N	3
15./fasˁʕam/	Y	Y	Y	N	3
16./ʔanfam/	Y	Y	Y	N	3
17./baʕθar/	Y	P	Y	N	2.5
18./baħθar/	Y	P	Y	N	2.5
19./balʕam/	Y	P	Y	N	2.5
20./balqaʕ/	Y	P	Y	N	2.5
21./barqaʃ/	Y	P	Y	N	2.5
22./dˁabxan/	Y	P	Y	N	2.5
23./darbax/	Y	P	Y	N	2.5
24./ʕadʒraf/	Y	P	Y	N	2.5
25./fardʒal/	Y	P	Y	N	2.5
26./ħadqal/	Y	P	Y	N	2.5
27./ħajʕal/	P	Y	Y	N	2.5
28./dʒalʕad/	Y	P	Y	N	2.5
29./dʒalmad/	Y	P	Y	N	2.5
30./dʒamhar/	Y	P	Y	N	2.5
31./xarfadʒ/	Y	P	Y	N	2.5
32./rasʕan/	P	Y	Y	N	2.5
33./sˁaʕlak/	Y	P	Y	N	2.5
34./sˁalxad/	Y	P	Y	N	2.5

Blend	**RC SW1**	**RC SW2**	**WP feature**	**CON method**	**Level of conformity out of four**
35./samʕal/	P	Y	Y	N	2.5
36./saqzan/	Y	P	Y	N	2.5
37./numruq/	Y	Y	P	N	2.5
38./ħabqur/	Y	Y	P	N	2.5
39./ħisˤkaf/	Y	Y	P	N	2.5
40./zamkan/	Y	P	Y	N	2.5
41./nazdʒan/	Y	P	Y	N	2.5
42./ħalqaðˤ/	Y	P	Y	N	2.5
43./ħalmaʔ/	Y	P	Y	N	2.5
44./dawfam/	P	Y	Y	N	2.5
45./darʕam/	Y	P	Y	N	2.5
46./batˤdʒal/	Y	P	Y	N	2.5
47./basmal/	P	P	Y	N	2
48./ɣaslab/	P	P	Y	N	2
49./ɣaθmar/	P	P	Y	N	2
50./ħamdal/	P	P	Y	N	2
51./ħarkal/	P	P	Y	N	2
52./ħasbal/	P	P	Y	N	2
53./ħawlaq/	P	P	Y	N	2
54./karbal/	P	P	Y	N	2
55./qaʃʕam/	P	P	Y	N	2
56./qasˤlab/	P	P	Y	N	2
57./sabħal/	P	P	Y	N	2
58./sabtˤar/	P	P	Y	N	2
59./ʃasˤlab/	P	P	Y	N	2
60./burquʕ/	Y	P	P	N	2
61./ʕusˤlub/	Y	P	P	N	2
62./ħuθful/	Y	P	P	N	2
63./dʒurθum/	Y	P	P	N	2
64./θufruq/	Y	P	P	N	2
65./ħidbiːr/	Y	P	P	N	2
66./sˤahsˤaliq/	Y	P	P	N	2
67./ʃaqaħtˤab/	Y	P	P	N	2
68./sˤildim/	Y	P	P	N	2
69./dʒawqal/	P	P	Y	N	2
70./hawmal/	P	P	Y	N	2
71./banasˤr/	Y	P	P	N	2

Blend	RC SW1	RC SW2	WP feature	CON method	Level of conformity out of four
72./ʔanarkaz/	Y	P	P	N	2
73./fawsawij/	N	N	Y	Y	2
74./buħtur/	P	P	P	N	1.5
75./dʒuðmur/	P	P	P	N	1.5
76./dˤibatˤr/	P	P	P	N	1.5
77./firnub/	P	P	P	N	1.5
78./liʕnif/	P	P	P	N	1.5
79./ħajzaman/	P	P	P	N	1.5
80./bajsˤatˤrij/	N	N	P	Y	1.5
81./fawsˤawt/	N	N	P	Y	1.5
82./qabħarb/	N	N	P	Y	1.5
83./ʕasˤdʒana:ħ/	N	N	P	Y	1.5
84./ħajnaba:t/	N	N	P	Y	1.5
85./ɣimdʒana:h/	N	N	P	Y	1.5
86./ɣiʃdʒana:ħ/	N	N	P	Y	1.5
87./musdʒana:ħ/	N	N	P	Y	1.5
88./qabmiːla:d/	N	N	P	Y	1.5
89./qabta:riːx/	N	N	P	Y	1.5
90./taħʃuʕu:r/	N	N	P	Y	1.5
91./barma:ʔ/	N	N	P	Y	1.5
92./ʔarbadʒul/	N	N	P	Y	1.5
93./ħajθu:m/	N	N	P	Y	1.5
94./qitˤsar/	N	N	P	Y	1.5
95./ʃibza:l/	N	N	P	Y	1.5
96./dʒaðridʒl/	N	N	P	Y	1.5
97./ʃankabu:t/	N	N	P	Y	1.5
98./xa:madrasah/	N	N	N	Y	1
99./faqbanafsadʒ/	N	N	N	Y	1

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NOTES

[1] /planɨtɛsɨml/ < /planɪt/ and /ɪnfinɪtɛsɪməl/ (*Oxford English Dictionary*).
[2] Al-Farāhīdi (718-786 AD) was one of the earliest Arab lexicographers and philologists.
[3] The reference to "letters" reflects the strong focus on written shapes of words in traditional Arabic grammar. This in itself is an interesting historiographical phenomenon but one outside the scope of this book. I simply reproduce the relevant formulations without comment.
[4] /-ij/ is an attributive suffix present in Arabic to indicate kinship. In all similar cases of attributive adjectives cited throughout the book, this suffix does not contribute to the formation of the blend, and hence is not considered when analysing attested blends, especially in cases following the classical pattern of forming blends.
[5] /-a/ is a case marker that does not form part of the basic word pattern.
[6] The two source words *'abd al-dār* are given in their non-pausal, context position, *'abdiddār*.
[7] The term word pattern and prosodic pattern are used alternatively to refer to the vocalic pattern in Arabic.
[8] The first /u/ is a new vowel added to the response.
[9] These two responses could reflect the fact that these combinations of food are mostly eaten together.
[10] Constraint-based studies include but are not limited to: Bat-El and Cohen (2012); Arndt-Lappe and Plag (2012).
[11] These conclusions also agree with Adam's (1973: 151) findings.
[12] Pronunciation of source words is added from the *Oxford English Dictionary Online*.
[13] Bertinetto (2001) analyses this blend as being formed in a sequential manner, although elsewhere in research on blending in English it is given as an example of sandwich blends, with source words *chuckle* and *snort* (Algeo 1977: 51).
[14] Although the examples used for each type of recombination are taken from Bertinetto (2001, 67-8), he clearly cited *blunge* as an example of recombination after the overlap; the other examples are selected by the present author as showing the other types of recombination.
[15] Annotation and abbreviation are here adjusted to match the conventions used in the present study. Bat-El and Cohen (2012) referred to the source words as base words and used the term "lefthand base word" (W1) and "righthand base word" (W2) to refer to the first and second source words, respectively.
[16] σ = number of syllables.

[17] The roots and the gloss of the source words of all Arabic blends used in this book were checked in *The Dictionary of Meanings* (قآموس المعاني) accessed via https://www.almaany.com/, *The Lexicon* (المعجم) accessed via https://www.almougem.com/, *The International Corpus of Arabic website of Bibliotheca Alexandrina* accessed via http://www.bibalex.org/ica/en/About.aspx, and *The Aratools Arabic-English Dictionary* accessed via http://aratools.com/.
[18] The Arabic word pattern that is represented by this skeletal/vocalic pattern is generally called *faʿlal,* which is a derivational morpheme for most of the quadriliteral verbs and nouns in Arabic.
[19] The use of "and" under the label SWs reflects coordinates; whereas the source words that are given without "and are either genitive constructions or taken from sentences.
[20] A variant spelling for this blend that is found in the literature is /dʒaʕfal/, where there is metathesis.
[21] *Mā* meaning "what, which" is a connective, non-inflected noun in Arabic. Due to the consistent use of this noun /ma:/ with the verb /ʃa:ʔ/ "will", the two terms have both been identified and used as one lexeme in this context; therefore, they contribute their root graphemes as if they were one unit.
[22] The original pronunciation for this location is /ħasan/ and /kajf/ "a name of a person", "pleasure", so the name /ħasan/ has been modulated to become /ħiṣn/, "a fortress" to properly refer to the place after which it has been named.
[23] This word pattern is represented in Arabic as /fiʕall/.
[24] *Bi* "in" is a preposition. The preposition /bi/ and its object /ʔism/ "name" are written and pronounced as one word when followed by the word *Allāh*. These two words are collocating, and they are used frequently in Arabic especially, when reading the Holy Quran. This prepositional phrase has been used as one lexeme in this context. When looked for in the ICA under the root search option, it appeared to have the root *bsm*.
[25] This word pattern is represented in Arabic as /fahfaʕil/.
[26] A variant spelling for this blend that is found in the literature is /ħawqal/, where there is metathesis.
[27] Tetra legomena refers to a response that occurs only four times in the whole data.
[28] Tris legomena refers to a response that occurs only three times in the whole data.
[29] Dis legomena refers to a response that occurs only twice in the whole data.
[30] Hapax legomena refers to a response that occurs only once in the whole data.