Sign Languages and Linguistics Convergence Research
Vol. 1. No. 2 (2024) pp.287~330

Blending in Spoken/Written Languages and in Sign Languages*

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Brdar-Szabó, Rita & Brdar, Mario. 2024. Blending in Spoken/Written Languages and in Sign Languages. ***Sign Languages and Linguistics Convergence Research,*** *1*(2), 287-330. The division of morphological processes into two general categories in spoken/written languages, into concatenative and non-concatenative ones, can with some due reservations also be applied to sign languages, assuming there is a certain degree of correspondence between sequentiality and concatenative process on the one hand, and between simultaneity and non-concatenative patterns on the other. This correlation is far from being perfect, but largely holds. Both concatenative and non-concatenative morphology is present in sign languages, but there is, generally, far more non-concatenative morphology than in spoken/written languages. We might hypothesize that we should therefore expect to see more lexical blending as a non-concatenative word-formation pattern in sign languages than in spoken/written languages. In view of the available data, examples of blending in sign languages are relatively rare, especially when it comes to its canonical forms. What is considered as a frequent type of blending in sign languages is very similar in nature to multimodal constructions involving text and image integration. This phenomenon is brought here into connection with finger-spelling and initialization in sign languages.

Key Words: Linearity, Sequentiality, Simultaneity, Lexical Blending, Text-image Integration, Metonymy

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* This publication is a result of the project PID2023-146582NB-I00, funded by MCIU/AEI/10.13039/501100011033/FEDER, UE.

1. Introduction

1.1. Linearity/sequentiality vs. non-linearity/simultaneity

De Saussure (1916/1972, p. 67) posits two "primordial characteristics" of linguistic signs. In addition to the arbitrariness of the link between the signifier and the signified, he also mentions the linearity of the signifier. This feature of language is for him fundamental:

> 'While [the linear nature of the signifier] is obvious, apparently linguists have always neglected to state it, doubtless because they found it too simple; nevertheless, it is fundamental, and itsconsequences are incalculable.' (1916/1972, p.70)

It is obvious that a speaker can utter just a phoneme at a time, not two or more, putting them into s string to produce just a single word at a time, etc. Conversely, listeners recognize certain sounds as phonemes in the same fashion, one by one, and segment a string of phonemes into just a single word at a time. Similarly, we can also produce letters in writing in a sequence, one by one, even if they may be linked by ligatures. Readers, on the other hand, also recognize letters linearly, one by one, whether from left to right, from right to left, from above downwards, or the other way around, as in a word sleuth puzzle.

This ubiquity of linearity or sequentiality is the base for assuming syntagmatic relationship in language. De Saussure was, nevertheless, also aware of the other basic dimension, viz. paradigmatic relationship. There is, however, an important difference as far as these two dimensions are concerned. The former, the syntagmatic ones, can be observed in presentia. The latter, the paradigmatic ones are always in absentia, i.e. they are only potentially or virtually there, and cannot be a part of a linguistic utterance as such.

Linearity or sequentiality is the precondition for isomorphy as a transparent, one-to-one relation between a complex expression and its meaning, i.e., between word forms and concepts (Geeraerts, 1989, p. 91), e.g., when a suffix or a

prefix has only one meaning. Compositionality in language also presupposes linearity. We do not find only isomorphy in language, but also a considerable amount of anisomorphy, which is a lack of one-to-one correspondence, resulting in polysemy and homonymy, and consequently diminishing compositionality. Anisomorphy is in certain cases the result of non-linearity, i.e. of simultaneity. Languages come with a mix of the two, in varying proportions. There is a natural tendency in human languages to strive for isomorphy, but this comes with a price. Isomorphy increases the burden on storage, as it leads to an increase of lexical and sublexical items that have to be stored in the mental lexicon. Anisomorphy, on the other hand, relieves this burden but increases the cost of the processing of ambiguity.

The publication of Stokoe (1960) marks the beginnings of the recognition of sign languages as fully-fledged natural languages exhibiting their own internal structure. In this ground-breaking work, he made it clear that sign languages are very similar to spoken/written language in that they also exhibit, among other things, a phonological component. Signs are broken down into features that are conducive to a systematic description by means of three parameters: handshape (DEZ), location (TAB) and movement (SIG). He listed 19 handshapes, 12 locations and 24 movement. In most current accounts of the phonology of sign languages, two more parameters, palm orientation and non-manual signals or features (NMS or NMF) are added. Altogether, five parameters are distinguished, but timing is also considered to be a formational parameter in some approaches. Although he draws parallels between spoken/written languages and sign languages at all levels of analysis (with some due differences of course, he thus suggests the terms chereme and allocher as the equivalents of phoneme and allophone, respectively, a suggestion that was later more or less disregarded), he is aware of a fundamental difference concerning the organization of the two:

> The sign-morpheme, however, unlike the word, is seen to be not sequentially but simultaneously produced. Analysis of the sign cannot be segmented in time order but must be aspectual. (Stokoe 1960, p. 45)

As a consequence of this, each sign is a bundle of values for the above

features realized simultaneously.

Discussing this point of difference, Klima and Bellugi (1979), stress that

> ... the lexical items of ASL and all other primary sign languages we know of appear to be constituted in a different way from those of spoken languages: the organization of signs is primarily simultaneous rather than sequential. (1979, p. 39)

They, however, also note the sequential nature of finger-spelling but this does not undermine the simultaneous character of sign languages as wholes.

Liddell (1984) argues against the view that sign languages are strictly simultaneous at the sublexical level. His empirical analyses suggest that it is possible to distinguish between holds and movements that would roughly correspond to consonants and vowels, respectively. Similar proposals were forwarded by Peng (1976) and Kegl and Wilbur (1976). Peng contrasts signs that involve contact with the body with those not involving it. The former are for him consonants, the latter are seen as vowels. For Kegl and Wilbur hands are vowels, while non-manuals (viz. facial expressions) are consonants. What all these proposals imply is that sign languages exhibit syllables, which in turn is compatible with sequentiality.

Nevertheless, in spite of all these proposals, the status of simultaneity as the major organizing principle in the phonology of sign languages remains unquestionable. The organization of sign languages above the lexical level, i.e., at the syntactic level, is of course very similar to that of spoken/written languages-it is mostly sequential.

The remaining question is which principle is dominant in the morphology of sign languages, especially in light of the particular type of the interplay of linearity/sequentiality and non-linearity/simultaneity that can be observed in the morphology of spoken/written languages.

1.2. Concatenative vs. non-concatenative morphology (in spoken/ written languages)

Broadly speaking, morphological processes can be divided into two general categories: concatenative and non-concatenative ones.This distinction is based on whether two or more distinct and overt morphological elements are joined in the course of a morphological operation in a more or less straightforward way or not. In the former case they are termed concatenative processes, in the latter they are considered to be non-concatenative ones. According to Haspelmath and Sims (2010, p. 34), morphological processes are concatenative if "two morphemes are ordered one after the other," i.e., linearly. Non-concatenative morphology is negatively defined as "everything else" apart from patterns in which we witness linear ordering of morphemes. In the case of non-catenative processes a single lexical element may be modified internally, i.e., a covert element may be added, or we witness subtraction-systematic elimination of parts of a lexeme-, or a combination of these. Non-concatenative morphology is also called discontinuous morphology or introflection.

Concatenative morphological patterns are more common in the languages of the world (Haspelmath and Sims 2010, p. 40). It is present in both inflectional and derivational morphology. A phenomenon that seems to be widely attested across languages is the so-called portmanteau morph. The first part of the term is a borrowing from French, where it nowadays primarily refers to a coat hanger or a coat rack. This French word is a compound of porterto 'carry' and 'manteau 'cloak, following the V+N pattern, very frquently found in Romance languages, but also in Slavic languages. *Portemanteau* in French originally denoted a person, specifically a servant carrying the prince's mantle. Nowadays it is primarily used to denote a coat hanger or rack, but in the period from the 17th to the 19th century, it was used to denote a large travelling suitcase, opening into two parts of equal size, one for hanging clothes, and the other for items that could be folded, similar to chifforobe.

The term was introduced into linguistics proper by Hockett (1954, p. 333), who defined it as the simultaneous exponence of "two (or, theoretically, more) morphemes, and have simultaneously the meanings of both." A simple example

is the English *-s* added to verbs in order to express the 3rd person singular of the present simple tense. In Croatian, *žena* 'woman' consists of the stem, *žen-*, and a portmanteau morph -aexpressing gender (feminine), number (singular) and case (nominative). *Žene*, on the other hand, is feminine, singular and genitive, or feminine, plural and nominative. Note that the combination of feminine, plural and genitive of the same noun is marked by the portmanteau suffix -aand simultaneously by the change of the pitch accent in the stem from the short falling ë in the singular to the long rising é (pitch accents, combinations of vowel length and tone, are normally not marked in writing). This means that the plural of feminine nouns in the plural genitive is additionally marked by a suprasegmental change, which takes place simultaneously with the addition of the portmanteau morph. MacWhinney (1985) describes the mergers of the plural suffix and possessive suffix on Hungarian nouns as portmanteaus: the plural of *kor* 'age' is *korok*, the 1st person possessive is *korom*, the 3rd person is *kora*, and following the agglutinative logic of Hungarian, dominating the language, the plural of the 1st person possessive should be **korokom*, and of the plural of the 3rd person possessive should be **koroka*, but are actually *koraim* and *korai*, respectively. While this may be reinterpreted as complex case of the allomorphy of the plural marker, the relationship involving a 1st person singular subject and the 2nd person object is expressed on the verb by an exponent *-lak/-lek*, a much better example of a portmanteau morph: *Lát-lak*(téged), 'see 1sg→ 2sg(pron.2sg.acc)' (Ortmann and Gerland 2014). Kenesei et al. (1998: 70) refer to this form as "second person object" suffix.

Portmanteau as a label for the result of a particular word formation process was first proposed by Lewis Carroll in his novel Through the Looking Glassin 1882. One of the characters, Humpty Dumpty comments on words like *slithy*, which is said to mean *lithe* and slimy, saying that "it's like a portmanteau-there are two meanings packed up into one word." Portmanteau as a paramount example of non-concatenative morphology clearly involves overlap and simultaneity in both inflectional and derivational morphology.

When it comes to derivational morphology, or word-formation, we can say that generally concatenative processes happen to be the most important ones in English in terms of their productivity. In other words, compounding and

affixation belong therefore to major word formation processes in English in the sense of the classification proposed in Quirk et al. (1985, p. 1520). Most non-concatenative word formation processes, such as blending, clipping reduplication or conversion, have a minor role as far as English is concerned, but may be extremely important in other languages, especially reduplication and/or conversion. Reduplication notably plays an important role in inflectional morphology in a number of languages.

It must be stressed at this point that the correspondence between sequentiality and concatenative process on the one hand, and between simultaneity and non-concatenative patterns on the other, is far from being perfect. What is more there also appear to be some gradation within the two general morphological patterns, but especially within the non-concatenative one. While compounding, suffixation and prefixation as concatenative patterns are clearly sequential, there are also complex words that are the results of the simultaneous application of prefixation and suffixation, e.g. the English verb *embolden*, from the adjective *bold*. While reduplication in spoken/written languages, which can be exact or inexact, partial or full, may be more or less close to compounding, conversion, with or without formal modification, if recognized as a word-formation pattern, is clearly simultaneous and non-concatenative. Clipping or truncation in spoken/written languages, which is by definition non-concatenative, cannot be seen as being sequential. Blending or contamination is somewhere between being concatenative and non-concatenative because phonological material is eliminated and combined together, often exhibits more or less phonological overlap. The combination inherent in it gives the impression of sequentiality, but it occurs at the same time as truncation, i.e., simultaneously with it. Overlap is also something that is more compatible with simultaneity.

Needless to say, just as in spoken/written languages, we find both concatenative and non-concatenative morphology in sign languages. Aronoff et al. (2005: 335) make an interesting observation concerning the two types of morphology in sign languages. Considering that sign languages share a number of properties with creoles, both being relatively young systems, they point out a paradoxical situation: ign language exhibit highly complex signs and a high

degree of simultaneity in the creation of new signs or their grammatical modification-a fact that is normally absent from creoles. Further, they claim that simultaneous or non-concatenative morphology is very similar across sign languages. Concatenative or sequential morphology, on the other hand, tends to be idiosyncratic and specific to particular sign languages.

Pfau and Steinbach (2023) report that investigations into a wide number of sign languages reveal that inflectional processes are either simultaneous in nature or involve reduplication. Instances of word formation processes, i.e., of derivational morphology, that are basically sequential are relatively rare. They go on to stress that most "derivational processes are in fact also realized by changing the internal composition of a sign instead of attaching an affix before or after it" (Pfau and Steinbach 2023, p. 1447). In other words, derivation is simultaneous.

Spoken/written languages, which are organized linearly/sequentially, predominantly make use of concatenative morphology. As indicated by the research mentioned above, sign languages, which are characteristically organized simultaneously at the phonological level, appear to exhibit far more non-concatenative morphology than we find in spoken/written languages. The question in the focus of this article is whether we should therefore expect to see more non-concatenative word-formation across the board in sign languages, including lexical blending. The remainder of this article is organized as follows. We first give an overview of lexical blending as a word formation method in spoken/written languages, mostly in English, in Section 2. We than turn to blending in sign languages in Section 3, showing that, paradoxically (or not), canonical examples of blending in sign languages are relatively rare, especially when it comes to canonical forms of blending (from the point of view of spoken/written languages). We exclude from our considerations part of what Brennan (1990) refers to as "mix'n'match" signs-simultaneous combinations of items from the core lexicon and polymorphic predicates or classifiers (Brentari and Padden, 2001, p. 89. Since classifiers are considered to belong to grammar, that their combinations produce portmanteau constructions is just what is expected. A closely related construction that is also is considered to be a frequent type of blending in sign languages is, we claim in the concluding part

of Section 3, to be very similar in nature to multimodal constructions involving text and image integration. This phenomenon is brought into connection with phenomena ubiquitous in sign languages such as finger-spelling and initialization.

2. Lexical blending in spoken/written languages

Lexical blending or morphological blending (Ungerer and Schmid, 1996; Cacchiani, 2011) is one of the quirkiest phenomena of derivational morphology. It is a method of the formation of new lexemes from parts of two or more other lexemes by clipping or telescoping them, often disregarding morphological boundaries, and then joining them. In other words, this method of the formation of new words truncates certain outward parts of the words, the final part of the first and the initial part of the second, and then compounds the remaining parts. It is simultaneously a subtractive and an additive way of creating new lexemes. This process in illustrated in the following English constructions:

(1) a. stay+ vacation→ *staycation*
b. Trump+ apocalypse→ *Trumpocalypse*
c. balloon+ lunacy→ *balloonacy*
d. friend +enemy → *frenemy*
e. breath+ analyser→ *breathalyzer*
f. picture + dictionary → *pictionary*
g. chair + wardrobe → *chairdrobe*

Three or more words as the input for lexical blends are relatively rare (*Thanksallowistmas*, from *Thanksgiving* + *Halloween* + *Christmas; turducken fromturkey, duck* and *chicken*), but possible. In fact, it seems that there is no upper limit for the number of words thus combined, at least in theory. In practice, however, the more complicated a blend, the worse it comes off. Many blends are based on phonological overlap, as the two source words share a syllable or a part of a syllable. Because the degree of the overlap is variable it is also possible for one or both input words to remain intact and be actually

present in the blend in its/their full form.

There is at present no real consensus on how blends should be defined.Cannon (2000, p. 952) defines this way of creating new words as "a process of word formation in which two (or rarely, three) separate source items are telescoped into a new form, which usually exhibits overlapping and retains some of the meaning of at least one of the source items." As noted in Brdar-Szabó and Brdar (2008, p. 175), one of the problems of this definition is that the whole burden rests on an undefined notion of telescoping. If we understand it in the sense of intercalative formations, then infixation and discontinuous affixation may be seen as special cases of blending, or one could suppose all the three to be instantiations of a yet to be labelled more general type of affixation. Beliaeva defines a lexical blend as "a lexical item formed by merging together two (or more) source forms, so that 1) only part of their orthographical and/ or phonological material is preserved, and 2) they have not been formed by concatenation of morphs" (2014, p. 30).

There is no principled way of excluding on formal grounds combinations of two reduced forms in which both elements exhibit reduction of their right-hand segment, and not even those combinations where only the second element's right-hand peripheral segment is truncated, as in *sitcom*(→ *situation* + *comedy*), or *hi-fi*(→ *high* + *fidelity*), which are actually clipped compounds. Gries (2004, p. 215) calls these complex clippings. Bauer (2006: 502-503) classifies blends into syntagmatic and paradigmatic ones. Paradigmatic blends are those where the source words "are in a paradigmatic relationship with each other", as in *smog* (*smoke* + *fog*), while in syntagmatic blends their source words are "in a syntagmatic relationship to each other", as in *motel*(*motor* + *hotel*).

It appears therefore, as claimed in Brdar and Brdar-Szabó (2008), that we are in fact dealing with a cluster of related phenomena exhibiting family resemblance. There are core cases of blending, i.e. prototypical blends to which a much stricter definition applies: the input words are shortened at their seam, i.e. the end of the left-hand item and the initial segment of the right-hand item, or/and they share a phonological segment, while in semantic terms they are co-hyponyms of their inputs, like *brunch* or *stagflation*, are co-hyponyms of *breakfast* and *lunch*, and *stagnation* and *inflation*, respectively.It is evident that

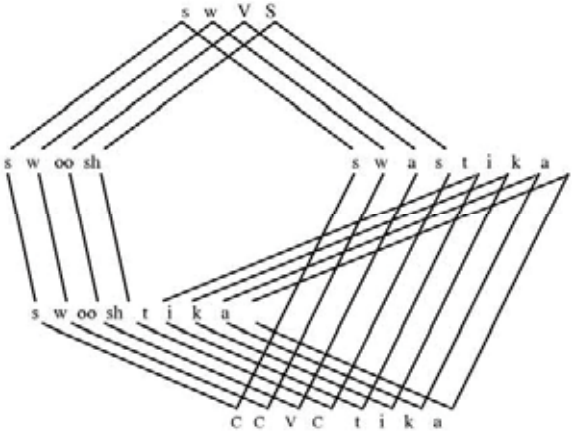
such blends exhibit an obvious parallel with coordinative compounds. If, on the other hand, the two input words fail to qualify as co-hyponyms, then we have determinative-compound-like blend, with or without overlap, as in *warphan*(→ *war* + *orphan*), or *shamateurism*(→ *sham* + *amateurism*).

If we concentrate on core instances of blending, we see that they aresubject to most stringent restrictions.First, both source words must belong to the same word class. Secondly,the productivity of blends is also clearly restricted in pragmatic terms: they tend to have concrete referents that are unique because they are collective units, mixes or something that is halfway between the entities denoted by the source words, etc. These are often hybrid animals or plants (*zonkey* or *zedonk* from *zebra* and *donkey, zebrule* from *zebra* and *mule*, *pizzly* from *polar bear* and *grizzly*, *pluot* from *plum* and *apricot*), dishes or drinks (cronutfrom croissantand donut, sushirritofrom sushiand burrito), pairs of closely related people(*Billary* from *Bill Clinton* and *Hillary Clinton*, *Merkozy* from *Merkel* and *Sarkozy*, *Kimye* from *Kanye West* and Kim *Kardashian*), etc. They are also at the core of the category of blends because they often exhibit diagrammatic iconicity in the sense that semantic overlap tends to be accompanied by phonological overlap.The reduction in the conceptual distance between the input words is signalled by the reduction of their phonological distance, i.e. by their fusion.

It is therefore no wonder in view of this reduction of conceptual distance that accompanies this sort of blends that lexical blending has recently been recognized as one of the instances of conceptual blending or integration (cf. Turner and Fauconnier, 1995; Fauconnier and Turner, 1996, 1998). The theory of conceptual blending is a dynamic model of human cognitive processing that shares a number of assumptions with other brands of cognitive linguistic models, but there are some significant points of difference. Its distinctive properties and mechanisms can be best illustrated if its workings are presented in contrast with an alternative cognitive model. In Lakoff and Johnson's (1980) account of conceptual metaphors and metonymies, mappings take place directly. In the case of metaphor, elements are mapped across two distinct cognitive domains, while in the case of metonymy a single mapping is assumed to take place within a single domain or within a domain matrix.

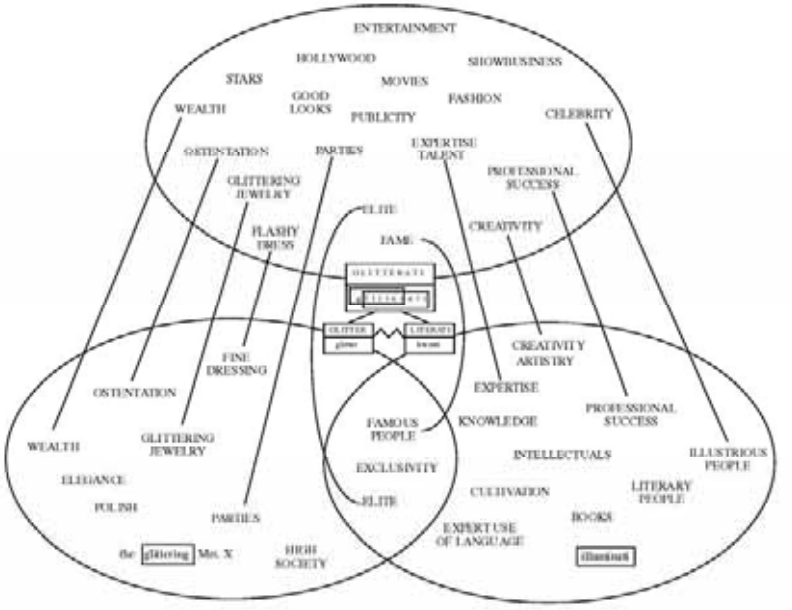
These cognitive domains roughly correspond to Fauconnier's (1994) mental spaces. The difference between the two models boils down to the fact that Fauconnier and Turner assume that in the case of metaphor not only two domains or mental spaces are at work, but at least four domains or spaces. In addition to Lakoff and Johsnon's source and target domains, there is also a generic space, as well as a blended or integrated one. In fact, what Lakoff and Johnson (1980) see as source and target domains, is here treated as source or input. What is more, there can be more than just two such source or input spaces or domains. The input spaces contain a number of elements of conceptual organization that are projected onto the generic space, and there may obtain correspondence links between elements from distinct input spaces. In other words, metaphor inherits common or corresponding elements from both/all input spaces. The generic space thus justifies or motivates the mappings between input domains or spaces. That lexical and conceptual blending are intimately related has been noted by a number of researchers, e.g. Ungerer and Schmid (1996), Kemmer (2000, 2003), Brdar and Brdar-Szabó (2003), Brdar (2006), and Brdar-Szabó and Brdar (2008).

Analyzing swooshtika(from *swoosh*, which is a slang label for Nike's logo, and *swastika*), Kemmer (2000, p. 12) establishes the following phonological relations between the inputs of this blend:



[Figure 1]

In her analysis of the blend glitteratifrom glitterand illuminatiKemmer (2000: 14) identifies a number of corresponding elements in the input spaces, resulting in the following multi-space network:



[Figure 2]

Lexical blending is a relatively productive word-formation process in the sense that new instances of blends are continually created, either spontaneously or intentionally, the latter case becoming more and more frequent. Bryant (1974), more than 50 years ago, claims that blends are increasing for a number of reasons. Crystal notes that "blending seems to have increased in popularity in the 1980s, being increasinglyused in commercial and advertising contexts"(1995, p. 135). However, most of blends remain protologisms i.e., nonce-formations, never becoming entrenched enough to stay. A number of blends remain current for a period of time, and then fall into disuse, only a handful of them becoming permanent additions to the lexicon (e.g. *spam*, *smog* or *brunch*).

In spite of the impression which one may get in light of the above, blends are not totally unsystematic (Peña-Cervel2022, p. 276), and can become integrated into complex derivational networks or word families. First of all, they can be input for other word formation processes and exhibit more than one order of derivation (cf. Körtvélyesi, Bagasheva and Štekauer, 2020). The coroneologism (note that this term is itself a blend, cf. Roig-Marín, 2021, and Brdar, Brdar-Szabó and Gradečak, 2021) covidiot, from *COVID* and *idiot*, serves as the base for the derivation of suffixations and prefixations like *covidiocy*, *covidiotism*, *anti-covidiot*, *mega-covidio*t, and *super-covidiot*. Iti s also the head of compound like *covidiot rave*, *covidiot partyor covidiot shaming*. The adjective *covidioticis* the base for *covidiotical*, which can be further modified to produce the adverb *covidiotically*.

Secondly, individual blends can also prompt the creation of other, often playful, analogical formations based on the same semantic type of input words, either the left-hand source word or on the right-hand one. In addition to covidiot the source word COVID has also been used to coin *CovIdentify*(*COVID* + *identify*), *covidual*(*COVID* + i*ndividual*) 'an individual who has or had COVID', *covincidence*(*COVID* + *incidence*), *covidient*(*COVID* + *obedient*), *covidence* (*COVID* + *evidence*), used to refer to evidence for or symptoms of COVID like cough, shortness of breath, loss of smell or taste, etc., *convincident*(*COVID* + *incident*), *covident*(*COVID* + *confident*), *covidant*(*COVID* + *confidant*), *covidante*(*COVID* + *confidante*), *covidiosyncracy*(*COVID* + *idiosyncracy*) 'a puzzling innovation in using protective gear', *covigilance/covigilante*(*COVID* + *vigilance/vigilante*), *covidiscipline*(*COVID* + *discipline)*, the examples coming from http://pendemic.ie/covid-19-lexicon-new-words-by-kathryn-a-hill/. There are also some COVID blends with three source words, such as covincidentidiot(*COVID* + *incident* + *idiot*), or *coedvidence*(*coed* + *COVID* + *evidence*). 'alarming COVID symptoms 14 days after new roommate moves in'. This last example is especially intriguing as evidenceis simultaneously blended with the other two source words in addition to coedbeing blended with COVID. Note further covideityand covidentiality, as used in the following text:

(2) A measure of how the ongoing pandemic has upended the world is how

> the name - COVID - has lent itself to a string of adjectivaluses. The two coinages which I find most fetching for describing our recent experience of return from the US to our home town are 'covideital' and 'covidential.' While the latter can be easily seen as a dystopic spin on providential, the former needs some explaining.
>
> 'Covideital' is a word that conjures for me overtones of gloom and doom. In these surreal and bleak times that record horrendous numbers of deaths from across the world on a daily basis, fatalities that the mind cannot even fathom, 'covideital' looks well set to replace fatal. Hence my recourse to the two words, learned, I must say, courtesy Prof Ashok Mahapatra of Sambalpur University, to reflect on our - me and my wife's - 'covideital' journey by air from the US to Bhubaneswar. The fact that I am alive to narrate does not take away the close, 'covidential' shave it was. I say 'covidential' in preference to providential because there is no closure that escape stories - think of the two famous escape movies *The Great Escapeand Escape to Victory* - are normally predicated on. In journeying home we have not merely exchanged one Covid hotspot - US - for another that is fast emerging - India. We are currently in self-isolation in our home in Chandrama Apartment for 14 days.

Covidential can actually be traced back to two different right-hand source words, in addition to providentialit can also be based on confidential, a situation which thus makes *covidential* something of a partial homophone.

Finally, one of the input words, viz. its remaining form (splinter, in the sense of Bauer 2006: 503), can ultimately become reinterpreted as an affix, like -gate, based on Watergate(*Contragate, Whitewatergate, Ubergate, Billygate, Irangate, Monicagate, Gategate, Partygate, Travelgate*), *-burger* based on *hamburger*(*cheeseburger, fishburger, beefburger, vegaburger, veganburger*), -(a/o)*nomics*, based on *economics*(*Nixonomics, Johnsonomincs, Reaganomics, Carteronomics, Clintonomics, Bushonomics, Obamanomics, Bidenomics, Kamalanomics, Trump(o)nomics*), or *Mc-*, based on *McDonald's*(*McChurch, McJob, McMansion*).

3. Blending in sign languages

3.1. Do lexical blendings carry across from spoken/written language to sign language?

One might (naively) expect that lexical blends used in spoken/written languages would find their correspondents in sign languages realized as blends. *Brunch* and *smog* are fairly frequently used and highly conventionalized lexical blends in English, and have also become internationalisms, i.e., they have been borrowed into many languages, including sign languages.

As it happens, the equivalent of brunchin ASL is a complex consisting of th ree signs, the sign for BREAKFAST, which is a compound of EAT and MORN ING, the sign for LUNCH, which is a compound of EAT and NOON, rounded off with the sign COMBINED/MATCH (https://www.youtube.com/watch?v=lRTtM cx6rSM). This means that the sign language counterpart of the blend is of seque ntial nature.



[Figure 3] BREAKFAST (EAT + MORNING)



Figure 4. LUNCH (EAT + NOON)



[Figure 5] COMBINED/MATCH

WORKAHOLIC is another compound sign. The first element is the sign for WORK (shaping both hands into fists, facing the palms downward, and tapping the dominant hand against the wrist of the non-dominant hand), followed by the sign for ADDICTED/HOOKED (pressing the tip of an X handshape into the cheek near the corner of the mouth and pulling it to a side, like a fish being hooked.



[Figure 6] WORK



[Figure 7] ADDICTED/HOOKED

MOTEL is usually fingerspelled in ASL, so again we do not find a blend as a counterpart, while some other frequent English blends are rendered by some

synonymous or unrelated signs.

By way of interim conclusion, it appears that there is no direct transfer between spoken/written languages and sign languages when it comes to lexical blending. In other words, sign language counterparts of blends in spoken/written languages are not blends. This is not surprising in view of the fact that the creation of complex lexical signs in sign languages follows somewhat specific logic. As pointed out by Makaroğlu, "[c]ross-modal comparisons of blends are challenging because of the varied criteria and terms mostly based on spoken languages"(2021, p. 142).

An indirect indicator of different strategies for closing lexical gaps in spoken/written languages and sign languages is a comparison of the types of neologisms related to COVID. We have seen in Section 3 that a large number of these coroneologisms coined in English are blends, in fact whole networks. On the other hand, as shown by Vale and McKee (2022), COVID-related innovation in New Zealand Sign Language included paraphrases, hypernyms, semantic extensions, etc., but do not mention cases of blending in any sense of the term. It should also be pointed that Peña-Cervel (2022, p. 280) reports that 199 items (27.83%) in her corpus of 715 English neologisms created between 2016 and 2020 were blends. Only compounding was more productive (53%).

Besides, the creation of sign languages blends is subject to certain limitations. Specifically, a sign language counterpart of *workaholic* would be very difficult to truncate in any way that would still be meaningful. The first constituent of the compound is a bimanual sign. It is not possible to reduce it to a monomanual sign, the movement of the dominant hand would become meaningless, moving its location is also questionable. The second constituent crucially depends on the movement close to the face. Therefore, a compound sign seems to be a more economical solution in this case.

3.2. Genuine cases of blending in sign language

What we find here are combinations of signs that differ from compounds. These are combinations exhibiting limited phonological features of the input signs that are always monomorphemic forms, and do not exhibit any trace of

sequentiality. Before we proceed, let us just outline the possibilities of sign combinations in light of the limitations on simultaneity, as discussed in Napoli and Sutton-Spence (2010).

As is well known, signs can be monomanual or bimanual, the latter occasionally being simplified to become monomanual if they are symmetrical. In addition to the two hands, signers can also use non-manual articulators such as facial expression, eye gaze, moth and body posture (Baker and Padden, 1978; Hwang et al., 2017). What is more, two hands can be used to produce two distinct lexical signs simultaneously (Meir et al., 2010), as well as for a range of other discoursal and referential functions (Perniss, 2012; Liddell, 2003; Engberg-Pedersen, 1994).

Starting from the number of hands involved in signing, we get two possible combinations, as producing two bimanual signs simultaneously is physically impossible. Theoretically speaking, symmetrical bimanual signs could be blended in such a way that they are reduced to monomanual signs, but this may result in the irrecoverability of one of both of the original signs. In other words, in theory, we are left with just two possible types of blends of complete lexical signs, without truncation, viz. reduction:

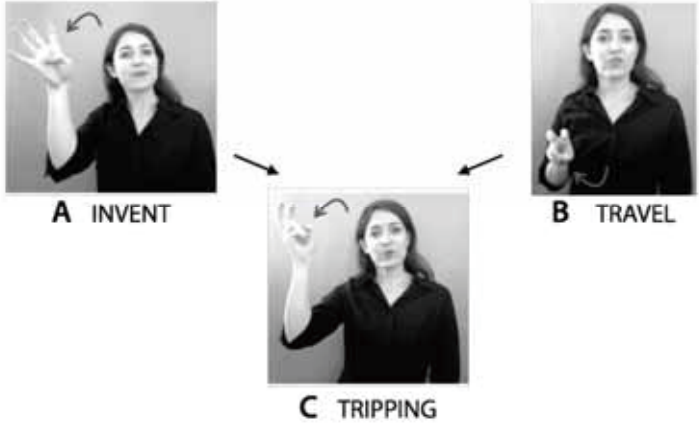


[Figure 8] Possible types of blends of complete signs

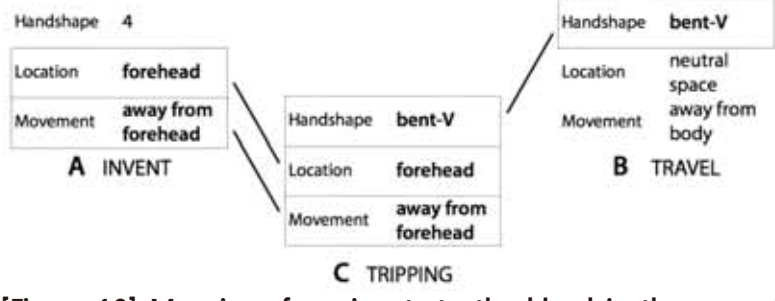
In practice, however, such blends without phonological modifications are actually unattested in sign languages. Rather, we find that part of the phonology of one sign “replaces” in the blend the equivalent part of the other sign. Such combinations are referred to by Makaroğlu (2021, p. 143) as “complete blends”. Again, we find the above two possibilities, as well as the combination of two symmetrical bimanual signs, although the majority of examples appear to involve two originally monomanual signs. Two symmetrical bimanual signs may blend into a non-symmetrical bimanual sign. Note that two monomanual signs may produce a bimanual blend, but apparently not the other way around.

3.2.1. “Complete” blends

These may be considered core examples of lexical blends in sign languages, coming closest to lexical blends in spoken/written languages. They are best seen as incorporating the segmental phonological sub-constituents from one word into the overall prosodic frame provided by another.An example of the combination of two monomanual signs with mixed phonology is TRIPPING ‘to be on drugs’, from the signs for INVENT and TRAVEL, as discussed in Lepic (2016, p. 101-102).



[Figure 9] The blended structure of TRIPPING



[Figure 10] Mappings from inputs to the blend in the case of TRIPPING

TRAVEL and TRIPPING are articulated with the same the bent-V handshape (as opposed to the 5 hand of INVENT), while INVENT and TRIPPING share the location (forehead) and movement (away from the body).

A combination of a bimanual sign blended with a monomanual sign in ASL is described in Brennan (1990) and Sutton-Spence and Woll (1999, p. 103). TTY, Tele Typewriter, sometimes also called TDD, or Telecommunication device for the Deaf, is a device consisting of mechanic typewriter paired with a communication channel, most frequently a phone line.



[Figure 11] Tele Typewriter

The ASL sign for TTY can be simply the three letters finger-spelled:



[Figure 12] TTY finger-spelled

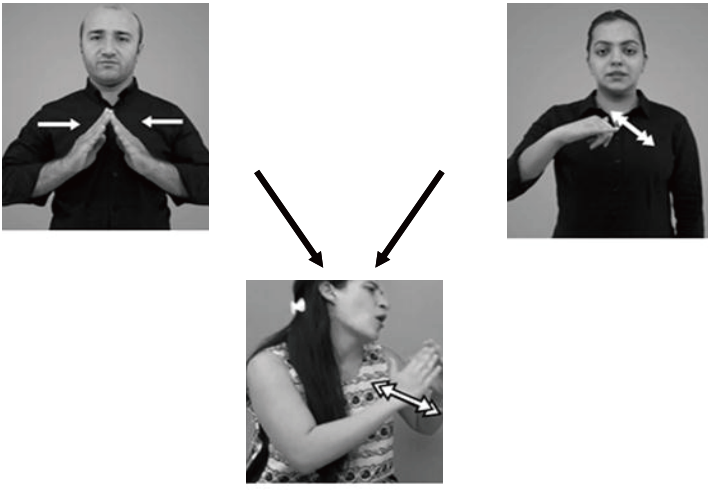
Brennan (1990) reports a that a combination of the monomanual sign for TELEPHONE, which is the Y-handshape located close to the ear, with the simplified sign for KEYBOARD, which originally uses two 5-handshapes with

palms down that mimic the activity of typing, can be used to refer to TTY. In this blend, the dominant typing hand is dropped, and the TELEPHONE is placed above the KEYBOARD hand in the neutral location in front of the lower chest.



[Figure 13] TTY

A similar case in Turkish Sign Language is described in Makaroğlu (2021, p. 143-144). The bimanual sign for HOME is combined with the monomanual sign for CLOSE.



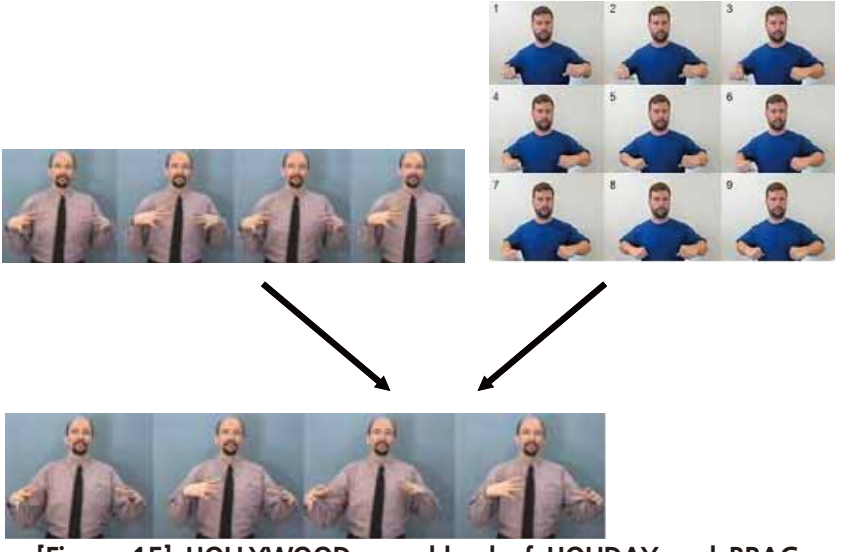
NEIGHBOUR

[Figure 14] NEIGHBOUR

The two B-handshapes touching at the finger tips, change their movement pattern to away from the body (repeatedly), while keeping the neutral position. The I-handshape of CLOSE is truncated. There is no reduction of the bimanual sign in the sense of its replacement by a monomanual sign, because it would make the blend virtually irrecoverable.

Finally, a blend may be based on two bimanual signs. One subtype retains the symmetry of handshapes, the other results in two different handshapes, accompanied by other phonological changes. The latter is singled out by Makaroğlu(2021) as simultaneous blending.

The former can be illustrated on the ASL sign for HOLYWOOD. It is a blend of the sign for HOLIDAY, poking the upper chest area twice with the thumb tips of relaxed 5-hands, withthe sign for BRAG, i.e. two A handshapes, thumbs pointing towards the abdomen, tap the sides of the abdomen with the thumbs two times in an alternating fashion.



[Figure 15] HOLLYWOOD as a blend of HOLIDAY and BRAG

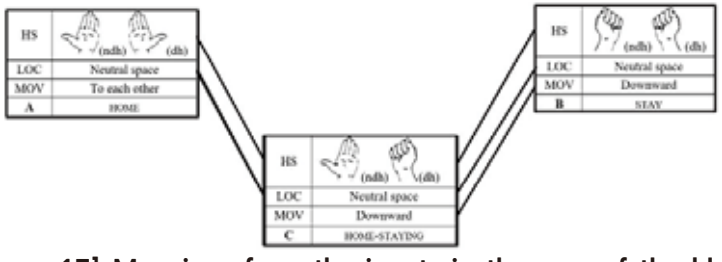
As an illustration of the latter type, with simultaneous bimanual blends as input that are each reduced to a single hand, consider the Turkish Sign

Language sign for HOME-STAYING from Makaroğlu(2021, p. 149). The downward movement comes from the dominant hand of STAYING. As predicted by Hendriks (2007),

> It is not allowed (and articulatorily almost impossible), for instance, to produce a sign with up-and-down movement and simultaneously produce a sign with a side-to-side movement on the other hand.
> Thus, when one hand produces a sign with a certain inherent movement, the other hand can only produce a sign that has symmetrical movement, or no movement, or a very simple phonetically inserted movement from one location to another (i.e. not a lexically specified movement). (2007, p. 241)



[Figure 16] HOME-STAYING



[Figure 17] Mappings from the inputs in the case of the blend HOME-STAYING

The type of simultaneous constructions discussed in this subsection, which might be considered core instances of blending in sign languages, again does not seem to yield a model that is profusely used in the creation of new signs. Examples are, as Meir (2012, p. 101) puts it, "exceedingly rare."

3.3. Initialized blends in sign language as integrated text-image constructions

Van Leeuwen (2005) developed a two-way system of text and image interdependency, where one mode can either specify/explain the other or have a similar/different/ complementary meaning. In the former case, either the text or the image may be dominant, while in the latter case, they run parallelly. In either case, he claims, they are loosely integrated. However, they can be very tightly integrated, so as to permeate each other and form a whole. Such tightly integrated text-image interactions in which the two are blended can be of two types. In one of them images are used as parts of a text, replacing words or graphemes (these are what McCloud (1993) calls montage, while Zakia and Nadin (1987, 1988) refer to such mixes as alpha-pictorial elements or components. In the other type, it is the other way around, words are treated as parts of the image itself, i.e., words or graphemes (or even their parts) form an image.

The former type can be illustrated by the following examples. The case of an image replacing a grapheme is described in Brdar-Szabó and Brdar (2023). It is the logotype of a Croatian restaurant located in the vicinity of Osijek (it actually calls itself restaurant and ball room, sometimes a resort, and advertises itself as a perfect place for wedding parties):



[Figure 18] The logotype of a restaurant with the letter Dreplaced by an image

Letter D is replaced in the logotype by a partial image of an apple. The fact that it is a fruit can be asserted, and the type of fruit identified, thanks to the presence of the stem and a leaf, and red colour of the outline of the apple, as well as its curved shape. It will be seen that only part of the apple, the outline of one half, is actually presented. We metonymically fill in the missing parts in order to arrive at the whole (part for whole). This half apple outline exhibits partial overlap in shape, or similarity with the grapheme D. If the apple were whole, the similarity in shape would disappear, or would be much more difficult to recognize and maintain. Note also that the grapheme is also incomplete, lacking the vertical stroke. This is also metonymically filled in (part of form for the whole form).

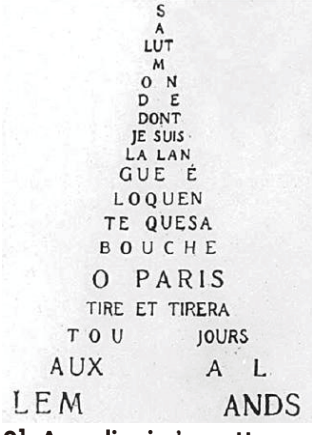
A variation on this is the logotype of the Hungarian bakery chain *Lipóti*. The swoosh ascender, with a repeated swoosh and the descender-turned-leftward-ascender that project from the initial capital L suggest the image of a loaf of bread.



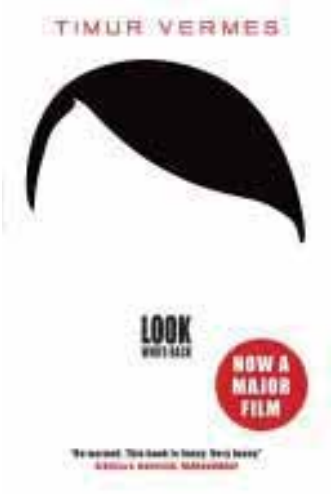
[Figure 19] The logotype of a Hungarian bakery chain

An image can replace a whole word, as in the case of the so-called I♥X construction, where the heart pictogram replaces the verb love. This replacement is again based on a series of metonymic shifts.

The latter possibility is illustrated by Apollinaire's concrete poetry, e.g. ina pattern poem dealing with Paris in the form of the Eiffel Tower in *Calligrammes*(Figure 20), or by the cover page for Timur Vermes' satiric novel about Hitler in the 21st century Germany, titled Er *ist wieder da*('He is here again') or *Look Who's Back* in English translation, where the words of the title are arranged in such a way that they resemble Hitler's moustache.



[Figure 20] Appolinaire's pattern poem



[Figure 21] The title page of Vermes' novel in English translation

Brdar-Szabó and Brdar (2022) describe the use of diacritic sign that is integrated into an image functioning as a logotype, specifically the logotype of the Cervantes Institute (Instituto Cervantes).



[Figure 22] The logotype of the Cervantes Institute

The logotype, created by Enric Satué, is very simple and consists of two pairs of lines, such that the two horizontal stripes touch two vertical sticks that run parallel to each other, topped by a wavy line in the middle. This wavy line is the diacritic called tilde, which appears in Spanish over the letter n, as ñ, called *eñe/enye/* in Spanish. Note that this diacritic is present in the Spanish word for Spain, España. The tilde in the logotype is thus a metonym for the Spanish language, and the language is further used metonymically to convey the concept of Hispanidad'Spanishness', the Spanish-speaking world and its culture.

It is also possible for a single grapheme to become so stylized as to become an image. The original logotype of Lasta, a bakery company from Čapljina in Bosnia and Herzegovina, contained two images of swallow, which is the meaning of lasta, and its longer variant, lastavicain Croatian.



[Figure 23] Logotype 1 of Lasta

In 2022, the company changed its logotype to a simpler one, with just the letter L whose descender and the upright stroke together with its loop ascender outline the body of the bird:



[Figure 24] Logotype 2 of Lasta

It is precisely this last example of the latter type of text-image integration, i.e., the letter-image integration that runs parallel to the majority of signs in sign languages that may be considered to belong to blends in a broader sense of the term (cf. also Nicolau, 2016).

However, we also find another type of the bimodal integration of elements from spoken language with elements of a sign language. It is present when a signer produces signs and simultaneously mouths corresponding words. Since the syntax of sign languages is often radically different from the syntax of spoken/written languages (ASL and BSL are not at all just signed versions of American and British English, respectively), not everything or anything in a sign language is mouthed. According to Proctor and Cormier (2022), mouth activity of signers may originate in the surrounding spoken language or be inherent to the sign language used. The former is referred to as mouthing, the latter as mouth gesture. Mouthing is mostly tied to lexemes of the spoken language, but the correspondence is not perfect. A sign may correspond to more than mouthed word, etc. This type of bimodal integration is of less interest in the present context, as it does not produce anything that may be called a blending.

What we focus on is the phenomenon of initialization in sign languages or the use of the finger-spelled first letter of a word. That this is really an instance

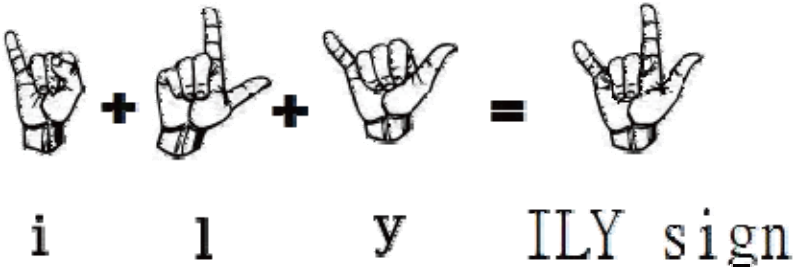
of image and letter integration, although in a very peculiar way, can be illustrated on the Italian Sign Language sign for DVD (Santoro 2018, p. 71).



[Figure 25] DVD in Italian Sign Language

This is a symmetric bimanual sign with the D-handshape. Since this is an acronym borrowed from English into Italian and then into Italian Sign Language, what is initialized are the first and the third letter of the acronym. However, the two finger-spelled Ds put together as in the above figure create a visual image of letter V (note that the finger-spelled V is ✌).

Another unique case of finger-spelled integration in which three signs, actually a whole sentence, are produced simultaneously using a single hand is the so-called ILY sign or the I-Love-You sign.



[Figure 26] The ILY sign

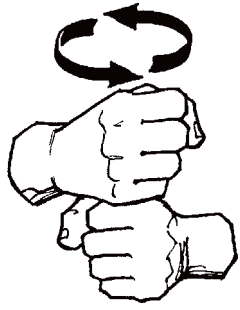
This is made possible by a lucky coincidence stemming from the way that these three letters are finger-spelled in ASL. Letter Y overlaps with both I and L. This sign has become very popular and has spread outside sign language, becoming something of an internationalism among gestures.

Blend-like cases of text-image integration come in two major varieties. Most of the time, it is simply the introduction into the sign of an element that denotes the first letter of the written counterpart of the sign. The sign for coffee in BSL (unlike its ASL counterpart) appears to resemble the activity of holding a cup of coffee and moving it close to the mouth. However, the handshape used is the C-handshape, which is luckily close enough:



[Figure 27] BSL sign for COFFEE

There are sign languages that keep the metonymy but also initialize simultaneously. Austrian Sign Language, Croatian Sign Language and Hungarian Sign Language use the coffee grinding sign, but both hands are apparently formed into K-handshape (which differs from ASL K handshape by being rotated by 90º). Letter K initializes *Kaffee*, kavaand *káve*, the equivalents of coffee in these spoken/written languages, respectively.



[Figure 28] The sign for COFFEE with K-handshape

According to some cognitive linguists (Barcelona, 2012, p. 260; Bierwiaczonek, 2013), this may be another metonymy because the initial letter stands for the whole lexeme (PART OF FORM FOR THE WHOLE FORM)

Finger-spelled C is also used when producing the most recent version of the sign for CELL PHONE in ASL. The slightly compressed C-shape is tapped twice on the side of the cheek.



[Figure 29] ASL for CELL PHONE

In all the above cases of finger-spelled letter integrated into a sign, we see that the letter is inherent to the sign, i.e. it is the initial letter of the written version of the corresponding word. However, the initialization may stem outside the original sign, which is the second variety we announced above. These can

be considered to come closer to prototypical cases of blending in sign languages. Our first example is the ASL sign for RETIREMENT. It is that same as the sign for VACATION/HOLIDAY (lightly jabbing the thumbs into the chest twice), but with the R handshape inserted into it instead of the 5-handshape:

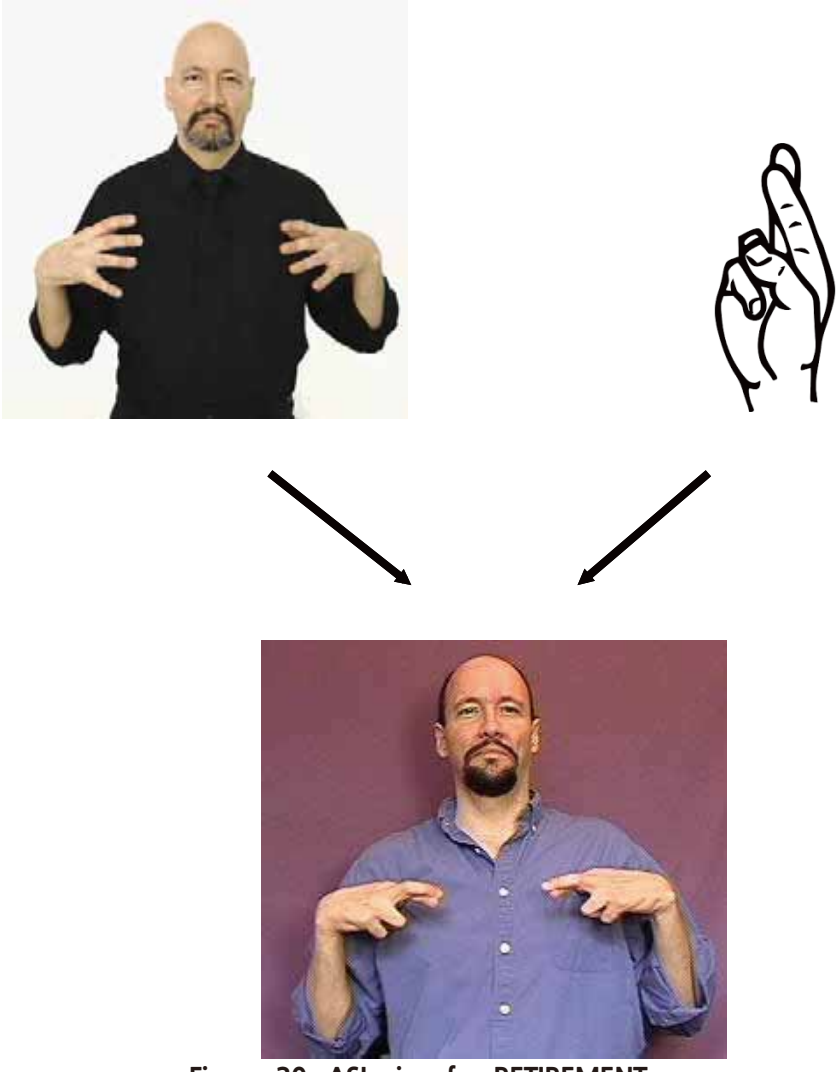


Figure 30. ASL sign for RETIREMENT

A number of similar examples are described in Mirus et al. (2012) and Loos et al (2022). The sign for NOSE, for example, is made by touching the nose with the 1-handshape, while the sign for BROWN is an initialization: the B-handshape moving down the side of the face. The sign BROWN-NOSE has a B-handshape moving down the side of the nose. We see that the general location comes from NOSE, but we now use the side of the nose rather than the tip. The handshape and movement are from the sign for BROWN.

An interesting case detailed in Makaroğlu (2021, p. 150) is a blending of two initialized signs, one of which is bimanual. Part of the phonology of this bimanual sign, finger-snapping, undergoes a deletion. The resulting blend consist of two monomanual signs, changing one finger-spelled initial from İ to I. Note that in the Turkish Sign Language alphabet, 20 out of 29 letter signs are always bimanual, two have bimanual and monomanual variants, and only seven are always monomanual (Zeshan, 2003), unlike ASL in which all the 26 are monomanual, or BSL in which all the 26 are bimanual.

Lexical signs can be coarticulated with initializing handshapes not related to these lexical signs, and actually not being specifically related to any particular item. Lepic (2016, p. 106) demonstrates this on some “U-initial” signs. Makaroğlu (2021) also identifies the same phenomenon in Turkish Sign Language. It must be, however, stated that it is difficult to accept these as cases of blending because one input is extremely underspecified, its contribution becoming clearer only in particular combinations. In this respect, this look more like an equivalent of affixation in spoken/written languages, disregarding, of course, the difference between simultaneity and sequentiality.

A variation on this theme are what Makaroğlu (2021) calls root blends.Unlike his “complete blends”, these are “formed with the structural fusion of a fully lexicalized sign and an abstract root (i.e. location) with specific meaning” (2021, p. 144). This is demonstrated in Lepic (2016: 103) on HEARING-MINDED ‘to uncriticallyembrace the values of the hearing majority’ and related signs such as WEAK-MINDED, MENTAL SCAR, or COMMIT TO MEMORY. HEARING-MINDED is based on HEARING, which is signed by rotating slightly the index finger in front of the mouth.



[Figure 31] HEARING in ASL

HEARING-MINDED is the same as HEARING, but articulated at the forehead.



[Figure 32] HEARING-MINDED in ASL

It is claimed by Lepic (2016, p. 103) that related signsHEARING-MINDED, WEAK-MINDED, MENTAL SCAR, and COMMIT TO MEMORY form a family of words. Makaroğlu (2021: 145) lists a whole series of Turkish Sign Language signs, such as EMPTY, QUESTION, MAGIC, or IMPORTANT, that when articulated at the head change their meaning to 'GOOFY', 'UNCERTAINTY', 'DREAM' and 'PROFESSOR', respectively. The sign EMPTY, when articulated at the nose, comes to mean 'DISAPPOINTMENT', REVERSE located at the eye becomes ILLUSION, while LOCK articulated at the mouth becomes SECRET. Santoro (2018, p. 138) cites SMALL changing to IGNORANT when located at the head in French Sign language.

4. Discussion and conclusions

Simultaneity is recognized as the major organizing principle in the phonology and morphology of sign languages, while sequentiality dominates in spoken/written languages.

The division of morphological processes into two general categories in spoken/written languages, into concatenative and non-concatenative ones, can with some reservations also be applied to sign languages, too, assuming there is a certain degree of correspondence between sequentiality and concatenative process on the one hand, and between simultaneity and non-concatenative patterns on the other.

This correlation largely holds, but is far from being perfect. Both concatenative and non-concatenative morphology are present in sign languages, but there is, generally, far more non-concatenative morphology than in spoken/written languages. We might therefore extrapolate that we should therefore expect to see more lexical blending among other word-formation phenomena in sign languages than in spoken/written languages. This, however, does not seem to be corroborated by data. On the contrary, canonical examples of blending in sign languages are relatively rare. We also show that what is suggested in the literature to be another frequent type of blending construction in sign languages is very similar in its nature to multimodal constructions involving text and image integration. This phenomenon has been brought here into connection with finger-spelling and initialization in sign languages.

We have also shown that in certain cases these marginal types of blending may be considered to partake in analogical networks of a kind, but their complexity pales in comparison with what we have seen at work with English blends in Section 2. What is more, it would be difficult to identify anything here as splinters in sign languages. What is suggested in the literature as putative splinters actually behave more like affixes because of their underspecification.

Further, it should be pointed out that the semantics of spoken/written language blends do not overlap to a significant degree with the semantics of what has been suggested to be sign language blends. In particular, there does

not seem to be much iconicity in the latter. In the case of what might be considered core cases of blending in sign languages, there is generally very little phonological overlap, sometimes it is just the location of articulation, which in terms of informativeness necessary for the recognition of blends approximates zero. And there is absolutely no phonological overlap whatsoever to be discovered in the case of so-called initialized blends and so-called root blends.

Finally, also on the formal side, although there are no obvious structural obstacles, we have not seen any putative blends that would have three of more input words, unlike blends in spoken/written languages.

Putting it into a nutshell, lexical blending in spoken/written languages and what was described as (lexical) blending in sign languages are two quite different phenomena. Coming a full circle, we may refer to the sequentiality/linearity of some non-concatenative processes in spoken/written languages. While the border-line between the two in sign languages is fairly discrete, discounting some smooth transitions, anticipations, etc., the situation in spoken/written languages is quite different. Some non-concatenative morphological processes may be absolutely sequential (total reduplication), or fairly sequential (partial reduplication, truncation/clipping operating in tandem with suffixation, or blending), coming occasionally closer to concatenative morphology.

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Received on Nov 30, 2024
Revised version received on Dec 11, 2024
Accepted on Dec 27, 2024