
Part 3: Lexicon

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Chapter 0 Preliminary considerations

0.1 What is the lexicon?

Broadly speaking, the lexicon is the collection of words that a speaker of a language knows, or in the case of sign languages, the collection of signs that a signer knows. The lexicon includes information about how words are pronounced (their form), what they refer to (their meaning), and also what functions they serve (their grammatical category or part of speech). The distinction between the lexeme (the conceptual representation of meaning), the word form (the phonological manifestation of the lexeme), and the grammatical word (a description of the morphosyntactic makeup of the word) provides different degrees of abstraction and offers a basic framework for thinking about how form, meaning, and function are instantiated phonologically and morphologically.

Generally, the lexicon is distinguished from knowledge of the rules, or grammar, of a given language. Traditionally, descriptive grammars do not include a dedicated section on the lexicon but rather focus on providing a thorough description of the rules of the language. However, sign languages present unique properties in the lexicon which are not found in spoken languages and which may be unfamiliar to researchers used to working with spoken languages who encounter a sign language for the first time. These properties are fundamental to understanding the language as a whole and also relevant to various aspects of the grammatical system proper. Consequently, this part of the Blueprint deals with the lexicon.

The first step when examining the lexicon is to establish what counts as a lexical item or sign. Splitting up a stretch of signing into individual signs is largely motivated by syntactic considerations: “a word is the largest chunk of a sentence which cannot be interrupted by the insertion of new material” (Cruse 2001: 140). Thus, exploring the ways in which signs may be combined and ordered as separate units is a useful diagnostic for identifying word boundaries. Here we are concerned with word forms as the phonological manifestation of lexemes, but other types of basic unit are used at different levels of analysis: for example, a prosodic word is a prosodic unit which considers the element’s intonational properties and whose boundaries may not necessarily coincide with those of a word form (see Prosodic word [Phonology – Section 2.2.1]).

Distinguishing between words and individual (bound) morphemes can be an issue since a productive morpheme may show up in different settings and look like an independent sign. Again, the inability to insert intervening material (between the morpheme in question and its stem) and semantic/syntactic regularities in the neighboring material indicate that this morpheme is not a free morpheme. Similar problems may arise with compounds, and attention must be paid to the phonological form of the sign to decide whether it constitutes one word or two (see

Phonological and prosodic characteristics of compounds [Morphology – Section 1.4], and also ASL examples in Sandler & Lillo-Martin (2006: 156f)). The predominance of non-concatenative morphology in sign languages means that many morphemes are assembled not sequentially but rather in a simultaneous or templatic manner. This may make it less likely to misidentify such morphemes as words, but the possibilities of simultaneous articulation at the sentence level may make it more difficult to distinguish between separate signs that are co-articulated (normally one on each hand). This issue is dealt with when we address simultaneous constructions and use of the non-dominant hand [Lexicon – Section 1.3.3].

Related to the issues of simultaneity and co-articulation is the matter of non-manuals. As described in the section on non-manuals [Phonology – Section 1.5], elements other than the hands may be an integral part of a sign's form. It is important to distinguish between lexical non-manuals, which serve a phonological role, and those which operate at the levels of morphology (see, for example, non-manual derivation [Morphology – Section 2.2] and agreement [Morphology – Section 3.1]), syntax (see the various sections dealing with non-manual marking in the Syntax Part [Syntax]), or discourse (see, for example, the sections dealing with non-manual marking for definiteness [Semantics – Section 2.1.2]), and thus do not form part of the lexical entry *per se*.

For sign languages, there are various ways to categorize the lexicon, the broadest being native [Lexicon – Chapter 1] versus non-native lexicon [Lexicon – Chapter 2]. While non-native forms are derived from or show influences from the words/signs of some other language, native forms belong to the language itself (or at least have been a part of the language long enough for the non-native origin to be obscure: the English word *beef*, for instance, is of French origin, but it is clearly native compared to the more recent borrowing *mangetout*). Obviously, this native/non-native distinction is also relevant to spoken languages, but is especially important for sign languages since they normally exist in very close contact with at least one spoken language. Furthermore, the use of fingerspelling systems (to represent the written form of spoken language words) opens up a means of borrowing that is channel-specific and unattested in spoken languages.

Deciding whether a given sign is part of the native lexicon of the language may be difficult, especially as very few sign languages have historical documentation which could indicate how established a lexical item is in the language. Experienced language users may have intuitions about whether or not a given sign is native, but folk etymologies are common, particularly in sign languages, for which apocryphal visual motivations are often conjured up to explain the origin of a sign. Borrowings or influence from the spoken language may be easier to identify, but a researcher who is proficient in the spoken language in contact with the sign language may be prone to overlook calques or borrowings. For borrowings from other sign languages, similarity in form and meaning does not necessarily indicate a shared origin: certain signs (such as pointing to the lips for the sign RED) may share similar or even

identical forms but this may be due to visual motivation rather than contact and borrowing between languages. For more details on identifying non-native forms, see Non-native lexicon [Lexicon – Chapter 2], and the methodological challenges described there.

0.2 Organization of the Lexicon Part

This part covers three broad areas: (i) the native lexicon, dealing with the characteristics of the lexicon in sign languages and distinguishing between the core lexicon and the non-core lexicon; (ii) the non-native lexicon, dealing with lexical items from other languages, both signed and spoken, and also from gestures; and (iii) parts of speech, dealing with the different word categories that appear in the lexicon. This structure is aimed at thinking about different aspects of the lexicon, but alternatives are possible: parts of speech, for example, could be incorporated into the native lexicon. More fundamentally, grammar writers need to decide whether or not to include any of this part in the final descriptive grammar they are producing. This issue is discussed in the following section.

0.3 How to use the Lexicon Part

This part is designed to point out to the grammar writer issues that will be relevant when studying a sign language, particularly when it comes to identifying the different elements that make up a given stretch of signed discourse. Traditionally, the lexicon is not usually dealt with in descriptive grammars, and many of the topics dealt with in this part are more akin to the work of the lexicographer and the task of compiling a dictionary of a given language. However, we decided to include this part on lexicon as it seemed necessary to provide information about the lexicon that is relevant to the structure and grammar of the language. As such, much of this part may be treated as observations and guidelines that should be kept in mind when analyzing a sign language, especially for grammar writers who are working with a sign language for the first time.

In this sense, grammar writers may choose not to include the sections in this part in the structure of their descriptive grammar but rather to use this section as a reference section to guide their work. Indeed, it is hard to envisage how certain sections could be fleshed out for a descriptive grammar of a specific sign language: the parts of speech section, for example, could provide examples of the different word classes but it would probably be more useful to hone in on specific issues, such as noun-verb alternations or the existence of different verb classes. Indeed, most of these issues are dealt with elsewhere in the Blueprint (such as the section on derivational markers [Morphology – Chapter 2] in the Morphology Part). Thus, this

part provides background information for the grammar writer that is not so relevant for the grammar reader and may not need to appear as a separate section. Alternatively, certain sections could be maintained, such as the section on the non-native lexicon, which could provide interesting connections with phonological processes [Phonology – Chapter 3]. It is up to the grammar writer to decide how much of the information presented here may be integrated into other sections of the grammar and what merits a specific section of its own.

Chapter 1 The native lexicon

1.0 Definitions and challenges

1.0.1 What is the native lexicon?

The native lexicon includes all signs developed within that language. A combination of formal and sociolinguistic criteria may be used to define native signs, which should conform to the phonological repertoire of the language, and their use should be agreed upon by a sufficient number of signers of the language. Thinking about the difference between the English words *beef* and *mangetout*, the latter fails to meet the test since it contains a phoneme /ɔ̃/, which is not in the phonemic repertoire of English. A word or sign may be considered native if it has formed part of the language long enough to obscure its non-native source. Essential to obscuring foreign origins is the process of nativization [Phonology – Section 3.1.6] / nativization, by which a word changes in form to conform to the phonology of the new host language. This is the case for *beef*, and a similar process may occur in the sign modality when a language adopts a foreign sign with a handshape, for instance, which does not exist in the native repertoire and then changes the handshape to one that does exist in the recipient language.

In order to study the native lexicon of a sign language, it is necessary to have a basic understanding of the language's phonology, and much of this work will be covered in the phonology [Phonology] Part of the grammar. For sign languages with a dictionary, this is a good place to start to analyze the phonological categories present in the language, as described in sublexical structure [Phonology – Chapter 1], and it also provides a readymade list of segmented lexical items. If no dictionary is available, recordings or observation of signing provides a way to collect signs, but it is important to work with native signers in order to make sure that individual lexical items are properly parsed. Bear in mind that writing a descriptive grammar of the type set out in this Blueprint does not entail creating a dictionary of the sign language. Compiling a dictionary is an equally worthy task, but one which requires considerable resources

and which comes with its own considerations and methodological issues. (See How to use this part [Lexicon – Section 0.3] for discussion of how much of this part should end up in the structure of a final descriptive grammar of a given language.)

Within the native lexicon, a further distinction may be drawn between the core lexicon [Lexicon – Section 1.1] and the non-core lexicon [Lexicon – Section 1.2], sometimes also characterized as the established or frozen lexicon versus the productive lexicon. This distinction is specific to sign languages, and relates to their spatial and gestural nature. The core lexicon refers to the lexicon proper: those word/sign forms which are a manifestation of a given lexeme. (This should not be confused with the term “core vocabulary” which is used to refer to a subset of the lexicon made up of basic vocabulary items which show specific properties, such as resilience to language contact.) Conversely, nearly all sign languages make use of mechanisms which involve the combination of phoneme-like units (hand-shapes, locations, movements, etc.) but the resulting form is not a “word” or lexical element. This is the case for classifier constructions [Lexicon – Section 1.2.1], pointing [Lexicon – Section 1.2.2], and simultaneous constructions [Lexicon – Section 1.3.3], all of which are explained in this section of the Blueprint.

A series of properties characterize and differentiate the core and non-core lexicon, based on phonological, morphosyntactic, and semantic criteria. Johnston & Schembri (1999) propose the following list for Auslan:

Table Lexicon-1: Properties that characterize signs in the core and the non-core lexicon (adapted from Table 1 in Johnston & Schembri (1999:136))

Core lexicon	Non-core lexicon
Phonologically restricted in parameters and structure (subject to phonological constraints, e.g. the dominance condition).	Makes use of a wider range of parameters and frequently violates phonological constraints.
Space is exploited as the phonological parameters of location of movement.	Space and movement are used topographically/ isomorphically.
Subunits are discrete and categorical; variation is allophonic.	Forms exhibit gradience: variations in form create changes in meaning.
Tend to be monomorphemic and monosyllabic.	Normally polymorphemic and may have no clear syllabic structure.
Meaning may be largely unrelated to form but is clear out of context.	The form is visually motivated by the meaning, which depends upon the discourse context.
The form of a given lexeme may show dialectal and cross-linguistic variation.	Less variation across dialects and even across languages.
May belong to any part of speech.	Frequently predicative in nature, although occasionally nominal.
Eye gaze normally directed at addressee.	Eye gaze often follows hand(s).
May be accompanied by spoken language based mouthing.	Any activity on the mouth is more likely to be a mouth gesture.

While this list was developed for a specific sign language, and some of the points may not hold for (or even be applicable to) other sign languages, the properties mentioned give a good idea of the division between an established, linguistically bound lexicon (the core) and a more visually-motivated, productive set of mechanisms which exploit the visual nature of sign languages. The non-core lexical level seems to involve or interact with gesture, and the role of gesture in sign languages has sparked a great deal of debate in the field of sign language research. Whatever the case, this non-core lexical level forms an important and prevalent part of sign languages which merits the attention of a descriptive grammar.

Any given stretch of spontaneous signing will normally contain a mixture of core lexical and non-core elements, and there may be no clear formal markers which distinguish between the two. Furthermore, there is some crossover between the two types of signing through lexicalization on the one hand (see lexicalization processes [Lexicon – Section 1.3.1]) and modification of core-lexical signs on the other (see the discussion of modification of core lexicon signs [Lexicon – Section 1.3.2] and simultaneous constructions and the use of the non-dominant hand [Lexicon – Section 1.3.3]), further blurring the distinction. The difference between core lexical items and non-core strategies depends upon a thorough understanding of the phonological constraints which exist in the language and awareness of the properties which characterize each part of the lexicon.

Furthermore, the use of non-core strategies is exacerbated by the fact that, as minority languages with restricted domains of use, most sign languages lack a fully developed vocabulary in many semantic fields. The need to create neologisms to express certain concepts often gives rise to compounds by combining core lexical items, but also by combining core and non-core items, especially size-and-shape-specifiers (SASS), as described in sequential compounds [Morphology – Section 1.1.1.3]. Once more, both the form of the resulting sign and the constraints it obeys give an indication as to whether or not the sign is a single lexical item.

1.0.2 Methodological challenges

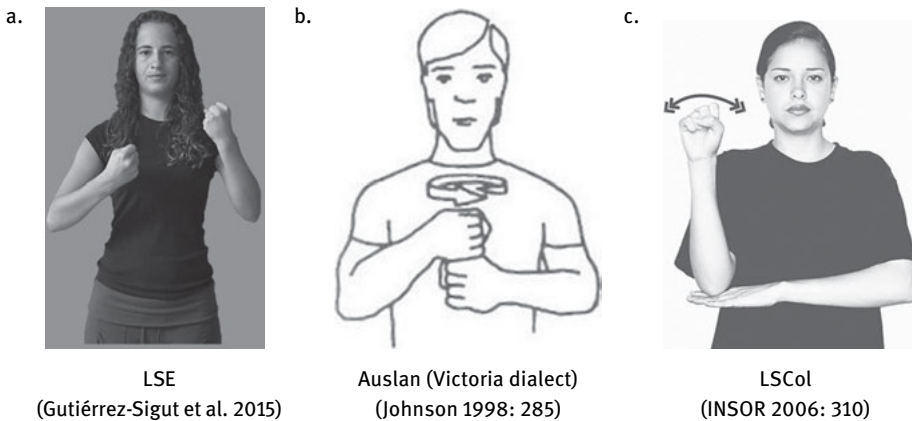
When working with the lexicon (be that the native or the non-native lexicon), the general methodological considerations for sign language research must be kept in mind. The danger of being led astray by the use of glosses is especially relevant since the use of a written word to represent a sign encourages the temptation to treat the sign as equivalent to the spoken language word. Needless to say, different languages code concepts in their own way, and there is rarely a one-to-one correspondence between the vocabularies of different languages. The way in which non-core productive lexicon is glossed may reflect underlying assumptions about the lexical status of those signs which the grammar writer should at least be aware of.

The possibilities of simultaneity afforded by the visual channel can also complicate the issue of isolating individual signs: co-articulation may involve a combination of core lexical elements, may consist of non-core lexicon, or may be a mixture of both. As always when working with a sign language, paying attention to non-manual activity can be critical to understanding the intricacies of a phenomenon, and the lexicon is no exception.

Finally, the presence of variation in sign languages makes it essential to find regularities in the data in order to describe the system. In the lexicon, especially the core lexicon, variation may be rife. Documentation of such variation is best left to lexicographers. For a descriptive grammar, the variation displayed by the language may be turned into a useful resource to discover the phonological constraints and properties of the lexicon.

1.1 Core lexicon

The core lexicon contains the established lexicon and is typically what forms the basis of the vocabulary provided in dictionaries. These are “listed in the signer’s mental lexicon as single meaningful units and are thus equivalent to free morphemes in a language such as English” (Johnston & Schembri 2007: 159). Although the signs in the core lexicon may show a greater or lesser degree of iconicity and visual motivation, their sublexical structure [Phonology– Chapter 1] draws from the phonological inventory available in the language. The signs meaning ‘car’ in LSE, Auslan, and LSColombiana may have varying degrees of transparency, but each makes use of a handshape, location, movement, orientation, etc., available in the respective sign language.



The sign CAR in three different sign languages.

Signs in the core lexicon can be classified by various means. From the point of view of the manual articulators, a sign may be one- or two-handed. Within the two-handed signs, symmetrical signs can be distinguished from asymmetrical signs (for details see two-handed signs [Phonology – Section 1.4]). This distinction is important as each type of sign is subject to different phonological constraints (Battison 1978; Brentari 1998). The Symmetry Condition applies to symmetrical signs and states that if both hands move independently, then both hands must have the same handshape, the same location, the same (or symmetrical) orientation, and the same (or alternating) movement. The Dominance Constraint applies to asymmetrical signs and states that if the hands have different handshapes, then one hand articulates the movement while the other is passive and has a handshape that belongs to a restricted set.

Another distinction for signs in the core lexicon is whether they are simple or compound. Compounds are single words composed of two or more base words (see the chapter on compounding [Morphology – Chapter 1]) and as such have a more complex internal structure than simple signs. Although reduction and assimilation processes may reduce the phonological complexity of compounds, making them look very similar to simple signs, they continue to be polymorphemic and thus are not subject to constraints which operate at the level of the morpheme.

A final distinction to be made for signs in the core lexicon is the level of phonological specification. Many signs are fully specified, that is, all the features in the phonological matrix (such as handshape, movement, and location) have a specific value. A change in one of the specified features will most likely give rise to a change in meaning, forming a minimal pair of signs. The LSE signs *SILLY* and *FEAR*, for instance, are both fully specified and differ only in the handshape (leaving non-manual features aside for the moment).



SILLY



FEAR

Fully specified signs which form a minimal pair in LSE. (Images taken from the LSE-Sign data base – see Gutierrez-Sigut et al. 2015 for a description.)

Other signs, on the other hand, are incompletely specified in the sense that one or various of the sublexical features does not have an assigned value. This is the case of agreement verbs (see subsection in the section on verbs [Lexicon – Section 3.2.2]), which are normally specified for handshape, movement and orientation, but not for the location slots in their phonological matrix (these slots are specified when the verb agrees with its arguments).

The specification of a sign is relevant to the notion of citation form. Core lexical items have a clear citation form, intuitively the form one would expect to find in a dictionary for that sign. In the case of fully specified signs, the citation form is provided by the complete specification of all the sublexical units of the signs. For incompletely specified signs, the underspecified features are “missing” and so the default specifications are used. With agreement verbs, for instance, default locations associated with a first person subject and a neutral or default location in the signing space are inserted into the empty slots so that the phonological matrix is complete and the citation, or default, form can be articulated.

The signs of the core lexicon are characterized by a set of properties, as set out in the table in the section “What is the native lexicon?” [Lexicon – Section 1.0.1]. It should be stressed that these properties are based on one specific sign language (Auslan), though many have been reported for other languages as well (such as ASL, BSL, LSE). When working on a specific sign language, it is essential to ascertain which properties hold and which do not, in order to create a language-specific set of diagnostics for delimiting the core lexicon.

The properties can be grouped as pertaining to the (morpho-phonological) form, to the meaning of the sign, or to the interaction between the two. The phonological properties mainly refer to restrictions on the form of the signs. Signs from the core lexicon are made up of sublexical units [Phonology – Chapter 1] (handshape, movement, location, etc.) that are categorically defined in the phonology of the language as a restricted set of options. A sign language makes use of a set of contrastive handshapes [Phonology – Section 1.1.1], and these are the ones that appear in the core lexicon. Equally, the movements and locations present in core lexicon signs belong to a restricted set of options, which may be defined in terms of specific values, such as [arc] or [restrained] for movement [Phonology – Section 1.3], and [head] or [contralateral] for location [Phonology – Section 1.2]. The discrete nature of these phonological units means that space is used in an arbitrary, abstract manner: particularly, movement and location are not isomorphic representations of real space (which usually is the case for non-core strategies). Certain changes in the form of a sign represent allophonic variation with no change in meaning: the LSE sign FEAR is articulated in its citation form with the -handshape, as shown above, but may also be articulated with a slightly different handshape with flexion of the base joint of the fingers, with no change in meaning. However, if the change crosses the categorical boundary between different values for a sublexical unit, the meaning of the sign changes radically, as can be seen in the minimal pair SILLY/FEAR above.

Additionally, continuing at the level of sublexical units, core signs are often accompanied by lexical non-manual components, in particular mouthings derived from spoken language words. The extent to which a given sign language uses mouthings is variable, so this criterion may or may not be useful for identifying core lexical items. In the realm of non-manuals, but not at the lexical level, a common observation is that eye-gaze during core-lexical items tends to be directed at the addressee and not at the hands themselves (conversely, for non-core signs, eye-gaze follows the hands).

Beyond the constraints on the individual sublexical units which make up core lexicon signs, there are also structural constraints. At the beginning of this section, we saw that two-handed signs are subject to the constraints of Symmetry and Dominance, which limit the possibilities for each hand. In addition, there are constraints which operate at a different level of structure. At the morpheme level, the Selected Finger Constraint and the Place Constraint limit the specification for selected fingers [Phonology – Section 1.1.1.1] and location [Phonology – Section 1.2] to one per morpheme. At the syllable [Phonology – Section 2.1.1] level, the Hand Configuration Constraint limits the number of finger configurations [Phonology – Section 1.1.1.2] or orientations within a syllable to two. Furthermore, the timing of these features is aligned with the syllable edge (just as lexically specified non-manual movements are).

Given that most core lexical signs tend to be monomorphemic and monosyllabic, the above constraints mean that such a sign may have only one location and one set of selected fingers, which may change position (and orientation) just once from the beginning to the end of the sign. Note that this is not the case for signs with more than one morpheme or syllable, such as compounds. However, taking into account the morphemic and syllabic structure of a sign may provide an idea of what changes are permitted according to the structural constraints described above.

Turning to the meaning of core lexical signs, such signs have a clear, stable meaning that is apparent from the citation form of the sign. The meaning of the sign does not depend to a large degree on the discourse context, contrary to what occurs with non-core lexicon, although clearly context can provide further levels of meaning and disambiguation (thus, in English, the *head* on my shoulders is different from the *head* of a procession). Importantly, the relationship between meaning and form in core lexical signs is often assumed to be arbitrary and non-componential: the sublexical units which make up the sign (generally) have no given meaning which contributes to the meaning of the sign. Although specific phonological values may have associated meanings, especially for the location feature (the forehead is associated with cognitive functions such as thinking or remembering; the mouth is associated with communicative functions such as saying or asking), the meaning of the sign should be unpredictable or more specific than any underlying componential meaning.

Finally, core lexicon signs may show variation within a sign language with more than one possible form for the same meaning. Even more notably, core lexicon signs show marked differences across different sign languages, as would be expected when comparing vocabularies cross-linguistically (compare the different signs CAR from different sign languages shown at the beginning of this section).

These properties contrast with those of the non-core lexicon, as described in the next section.

1.2 Non-core lexicon

Complementary to the core lexicon [Lexicon – Section 1.1], any sign language lexicon also includes elements inherent to the visual nature of sign languages that exploit the spatial properties of the three-dimensional space for the realization of concepts. These elements do not display the same morpho-phonological characteristics or arbitrary meaning of items of the core lexicon. Such types of entries include classifier constructions [Lexicon – Section 1.2.1], pointing [Lexicon – Section 1.2.2], buoys [Lexicon – Section 1.2.3], and simultaneous constructions [Lexicon – Section 1.3.3].

In the context of the distinction between core and non-core lexicon, these non-core elements are characterized primarily by the fact that they use the signing space in an isomorphic and non-categorical manner to provide spatial descriptions and/or by the violation of the phonological constraints present in the core lexicon. These basic characteristics give rise to a series of properties of the non-core lexicon, summarized in the table comparing core and non-core lexicon in the section “What is the native lexicon?” [Lexicon – Section 1.0.1]. The isomorphic use of space, especially in the case of classifier constructions and pointing, means that these forms are visually motivated, and as a result, small changes in form may have corresponding changes in meaning, and sublexical units (handshape, location, orientation, etc.) may be gradient rather than categorical in nature. The visual motivation also breaks – or at least weakens – the arbitrary form-meaning relationship found in the core lexicon; the general meaning of these elements can be more transparent (e.g. ‘a flat round object’), and yet the specific meaning is more dependent on discourse context (‘a clock’, ‘a coin’, ‘a biscuit’). The iconicity inherent in these signs also makes their forms more stable and less variable, both within a given sign language, and across different sign languages. This contrasts with the ample variation in form for the core lexicon.

While classifier constructions, pointing, buoys, and simultaneous constructions may, on the surface, look like core lexicon signs, they are structurally more complex. Indeed, buoys and simultaneous constructions may be considered discourse-level phenomena, and they are included here to point out to the grammar writer that what looks like a simple sign can actually be well beyond the lexicon. The seeming simplicity of these forms is betrayed by the fact that they do not conform to the phonological constraints of the core lexicon, especially with respect to the limitations on the number of locations and handshapes possible in a given sign (see the different constraints described for the core lexicon [Lexicon – Section 1.1]). Furthermore, the form is often accompanied by specific non-manual elements: eye gaze will follow the hands in non-core signs, and an accompanying mouth movement is more likely to be a mouth gesture than a mouthing. Since the movement of the sign may be iconically motivated, it can be difficult to ascertain the syllabic structure of these non-core

elements (whereas the core lexicon has a strong monosyllabic preference). At the same time, such non-core signs tend to be polymorphemic in nature (in contrast to the largely monomorphemic core lexicon), and this complexity is reflected in the fact that they are frequently predicative in nature.

This list of properties of non-core lexical items gives a set of guidelines to the grammar writer for distinguishing between the core lexicon and more complex, productive mechanisms which have been observed in most sign languages studied to date. No single property can be used as a necessary or sufficient condition for classifying a given sign, and certain features may be more or less relevant in a specific sign language. It is up to the grammar writer to ascertain which features are significant for the sign language being described, and our aim here is to point out these productive mechanisms that are peripheral to the core lexicon.

1.2.1 Classifier constructions

Broadly, classifier constructions are used to give spatial and motion descriptions of objects. For a full description of classifier types and forms, see the chapter on classifiers [Morphology – Chapter 5]. The following example from DGS shows typical use of a classifier construction to provide a spatial description of two objects, providing the position and orientation of the objects relative to each other and relative to some point of view.



(Scene described.)



dom: MAN BROWN HAT CL(man)_{right}

n-dom: TREE CL(tree)_{left}-----hold-----

‘The man with the brown hat is to the right of (and facing) the tree on the left.’

A classifier construction in DGS (Perniss 2007: 78)

In using (signing) space to provide spatial descriptions, classifier constructions create a continuous, isomorphic mapping of the referents which offers an extremely productive means to convey information about (relative) location and movement. However, classifier constructions are not mere pantomime, and are subject to clear restrictions both in form and structure. Classifier handshapes are drawn from a closed set and differ from one sign language to another; equally, the use of movement is not completely unrestricted and rules govern the use of different movement types. In this sense, the form of classifier constructions combines the arbitrary with the visually motivated. In terms of structure, classifier constructions interact with argument structure and certain types of classifiers are used for specific types of verbs. A classifier may refer to the subject of an intransitive clause or the object of a transitive clause, and this conditions the handshape employed. For example, in a sentence like ‘The book fell onto the table’ a flat B-hand configuration () may be used, whereas for ‘She picked up the book’, a grasping handshape () can be used to depict the book. (See the section on argument structure alternations [Syntax – Section 2.1.1.5] in the Syntax Part for full examples.)

The classifier system makes use of basic sub-lexical units (handshapes, movements, locations, etc.) but combines them in ways which go beyond the basic core lexicon, creating structures which may be morphologically and semantically rich. Classifier constructions provide a highly efficient and economic means of conveying spatial descriptions. Although alternative mechanisms exist within the core lexicon for expressing locative information, the result is often uneconomic and obscure, and most sign languages studied resort to some sort of classifier construction to express spatial information (Zwitserslood 2012).

1.2.2 Pointing

Pointing is very common in sign language discourse and is undoubtedly the type of manual activity that looks most like the sort of gesture that non-signers commonly use to indicate deictically or demonstratively. However, pointing in sign languages fulfills a wide range of functions, and has been associated with various linguistic elements, including pronouns [Lexicon – Section 3.7], determiners [Lexicon – Section 3.6], demonstratives [Syntax – Section 4.1.2], locative adverbials [Syntax – Section 6.4.2.3], and agreement markers [Lexicon – Section 3.3.4].

Distinguishing between these different functions may involve paying attention not only to the syntactic contexts in which a given point may (or may not) occur, but also looking carefully at the form of the sign. Differences in handshape and orientation may set apart different types of point; additionally, movement, in terms of direction, length, repetition and quality (tensed or lax, for example), may also give an indication that a point is of one type or another (Pfau 2011).

In addition to manual points, directional indicating may also be carried out by non-manual means, such as eye gaze, head tilts, or even lip pointing. These non-manual markers may take on the same grammatical functions as manual pointing.

For the grammar writer, it is important to be aware that a given instance of pointing may serve one of a multitude of functions. In some cases, the point may be similar to a co-speech gesture but the fact that it is produced by the same articulators as the signed discourse obviously makes it much harder to classify.

1.2.3 Buoys

In certain discourse contexts, sign languages often employ a specific strategy to keep track of the referents: buoys (Liddell 2003; see the section on buoys in the Pragmatics Part [Pragmatics – Section 2.2.3] for further information). This involves keeping the non-dominant hand in a stationary configuration while the dominant hand continues to sign. This means that the two hands are not subject to the constraints that normally operate for lexical signs, since using a buoy involves doing two different things with each hand at the same time.

A common type of buoy construction is a list buoy, which occurs in situations with a small set of referents (normally between two and ten) belonging to the same class and which involves using the non-dominant hand to distinguish each referent. For example, when talking about her siblings, a signer may associate each sibling with a different finger on the non-dominant hand. While the description for a given sibling is provided, the corresponding configuration of the non-dominant hand (roughly equivalent to ‘first’, ‘second’, ‘third’, and so on) is held in place to indicate which sibling is being talked about.

The use of the non-dominant hand in buoy structures makes it possible for backgrounded information to remain present during the rest of the discourse, and allows for the simultaneous presentation of different linguistic elements. This mixture of elements may be made up of different core lexical elements (or may include other non-core elements, such as classifiers) but is not subject to the same constraints as a single item from the core lexicon.

1.3 Interaction between core and non-core lexicon

The distinction we have made between core and non-core lexicon is a real and important characteristic of the lexicon of sign languages. However, these two types of lexicon do not represent completely separate, independent parts of the language system. Firstly, the two systems are in constant use and appear side by side in any stretch of signed discourse. A given sign language sentence will typically alternate between core and non-core lexicon and, as described in simultaneous constructions

and use of the non-dominant hand [Lexicon – Section 1.3.3], both types may occur simultaneously. (See the DGS classifier construction in the section on classifier constructions [Lexicon – Section 1.2.1] for an example of a sequential and simultaneous mixture of core and non-core lexicon.) Although certain registers or styles may tend to use one type of lexicon more than another (for example, formal registers may include more core lexicon whereas poetic registers tend to make greater use of the expressive possibilities of non-core lexicon), signed discourse will inevitably exploit both types.

More fundamentally, the distinction between core and non-core lexicon is not clear-cut since there is interaction which blurs the boundary between each type. This interaction is two-way: non-core lexicon may undergo a process of lexicalization to join the core lexicon, and items from the core lexicon may be modified such that they behave more like non-core lexicon. The following sections examine each of these phenomena in turn.

1.3.1 Lexicalization processes

Lexicalization is the process by which a new lexical form is created such that its formal and semantic properties cannot be fully derived from the constituent elements. The new lexical item emerges to encode a specific meaning, normally because there was previously no single item to express that concept. The new word/sign may be created through various processes, such as compounding, conversion, and derivational affixation. Respectively, these processes combine other lexical items (e.g. *watermark*) or modify an existing lexical item by changing its grammatical category (e.g. *text* as a verb, meaning to send somebody a text message) or by adding affixes (e.g. *disambiguation*), and additionally, new lexical items may also be created *ad novo* (e.g. *google*).

In the case of sign languages, the lexicalization process may draw not only from existing (core) lexical items but also from the non-core lexicon. Generally, classifiers [Morphology – Chapter 5] appear to undergo lexicalization very readily, and many lexical items may have their origins in some sort of classifier form. Pointing may also enter the lexicon, although the transparent and gestural appearance of pointing often makes it difficult to be sure that a form involving pointing has lexicalized. Finally, lexicalized buoys rarely show up, although some core lexical items appear to be derived from the buoy mechanism.

In compound formation [Morphology – Chapter 1], classifiers may be one (or more) of the elements which make up the compound. A common sequential compounding process in sign languages is the combination of a (nominal) lexical item with a Size-and-Shape-Specifier / Size-and-Shape-Specifier [Morphology – Section 5.2], as can be seen in the LSE compound meaning ‘bullet’.

GUN[^]SASS(small object)

(LSE)

Different types of classifier constructions may also occur in simultaneous compounds, as in the combination of a handling classifier (normally used to represent a writing implement) and a size and shape classifier (to represent a flat rectangular object) in the LSE sign BLACKBOARD:

Dominant hand:	CL(writing implement)	
Non-dominant hand:	CL(flat rectangular object)	(LSE)

For more information, see the section on simultaneous compounds in the Morphology Part [Morphology – Section 1.1.2], and the section on simultaneous constructions and use of the non-dominant hand in this part [Lexicon – Section 1.3.3].

Conversion [Morphology – Section 2.0.2], the process by which an item undergoes no change in form but appears in a new word class, is also a common means by which non-core items may enter into the core lexicon. (Strictly speaking, conversion involves a transformation from one word class to another, but in the case of non-core lexicon, it is often unclear what word class a given item has in the first place. Nevertheless, the preservation of form provides motivation to treat this as a case of conversion.) Classifier constructions may be lexicalized to encode a stable, specific meaning, as is the case for WHITE-COFFEE in LSE, which is derived from a classifier construction with the more general meaning of ‘pour two liquids into the same place at the same time’ (image taken from the LSE-Sign data base – see Gutierrez-Sigut et al. 2015 for a description):



WHITE-COFFEE

(LSE)

Pointing may also be lexicalized. This most commonly happens in the case of deictic pointing on the body, for signs such as NOSE, EAR, or ELBOW, for which the location is specified by the body part in question. Pointing into space may be also lexicalized for locational meanings (for many sign languages, the sign GOD involves pointing

upwards) or temporal meanings (in LSE, the sign TODAY is a downward point very similar to what one would expect for 'here').

Buoys / buoys [Pragmatics – Section 2.2.3.] may undergo lexicalization, and often form part of a lexicalization process such as compounding. One possible example of a form which is (almost) identical to a buoy is the LSE sign SURNAME, which involves tapping the thumb with the middle finger. Used in a buoy construction, this form (typically on the non-dominant hand) would mean 'the second of two things'.

Derivational affixation [Morphology – Chapter 2.1] is normally associated with the sequential morphological process of adding prefixes or suffixes to a given form; this type of process is not generally common in sign languages. However, simultaneous derivational processes [Morphology – Section 2.1.2] are possible, along the lines of the template morphology characteristic of Semitic languages, in which the base form itself is modified (rather than added to). This type of simultaneous morphological process is much more common in sign languages, and is frequently attested in the distinction between verb and noun pairs, which differ in the movement of the sign (see the section on common nouns [Lexicon – Section 3.1.1]). As far as lexicalization of non-core elements by means of derivational processes is concerned, the picture is unclear: derivational processes which have been described apply to core lexical items (see derivation [Morphology – Chapter 2]). If a non-core item displays such derivational morphology, it may well be because it has already entered into the core lexicon through some other process.

Although a better understanding of derivational processes in sign languages is needed before we can identify more mechanisms which transform non-core lexicon into core lexicon, there are clearly some core lexicon items which derive in some sense from non-core mechanisms. This can be seen with lexical signs that make use of the frameworks exploited by the non-core lexicon. In the case of pointing, the concept of time may be expressed by means of an underlying spatial map: thus, in several sign languages, the signs TOMORROW and YESTERDAY are identical in form except for the direction of the movement (forwards and backwards, respectively – see section on time lines [Morphology – Section 3.2.1]). The buoy system associates separate referents with different fingers of the non-dominant hand, and this is reflected in various quantifier signs such as HOW-MANY (in various sign languages). Buoy structures often establish ordered lists, and an analogy of this can be seen in the BSL sign LAST, which involves the dominant hand contacting the extended little finger of the non-dominant hand.

In summary, various scenarios for the lexicalization of non-core elements are possible. For instance, a usual path for their assimilation may begin with their compliance with phonological requirements, initially through combining with another core lexical sign or an assimilated mouthing to form a compound sign. Alternatively, non-core lexical signs may stand alone in a phrase after deletion of their expected lexical precedent, and ultimately substitute for it; that is, they lexicalize.

An important feature of lexicalization is that the new item gains autonomy at the expense of the component parts, whose individual meanings are less important for the meaning of the resulting item. This semantic transformation occurs with non-core elements that have undergone lexicalization, as the new core lexical item has a specific (and stable) meaning which is more limited than the more general meaning of the original non-core item ('white coffee' versus 'two liquids poured into the same place'; 'god' versus 'something up there'; 'surname' versus 'the second of two things', etc.). Consequently, lexicalized signs can stand on their own, and their meaning remains clear, whereas the underlying non-core form would depend on the context for its meaning.

However, the transformation from non-core to core also involves restrictions on the form of the sign and of the relationship between form and meaning. The core lexicon is subject to restrictions on form that do not apply to non-core lexicon (see the table in What is the native lexicon? [Lexicon – Section 1.0.1] for an overview of the differences between core and non-core lexicon).

Thus, the lexicalization process coerces classifiers, buoys, and pointing to conform to the morpho-phonological requirements of the specific language, and the outcome is usually a monosyllabic sign with a simple movement and direction path in its base form. For instance, core lexicon signs are subject to the Symmetry and Dominance Conditions [Lexicon – Section 1.1]. In the example of the lexicalized classifier construction WHITE-COFFEE in LSE, the underlying classifier construction could be modified to show how more of one liquid is poured in, or the order in which the liquids are added; however, the core lexical sign as a bimanual sign is subject to the Symmetry Condition, and both hands move at the same time in a symmetrical fashion.

Furthermore, for lexicalized signs that form part of the core lexicon, the relation between form and semantics may also become more opaque and arbitrary, with less visual motivation, and the isomorphic mapping between the sign form and actual space can be lost or severely degraded. Thus the classifier structure for pouring two liquids into one place is strongly iconic and may convey spatial information directly (such as the height from which the liquids are poured), whereas the lexicalized sign WHITE-COFFEE is somewhat arbitrarily derived from a constrained form of the underlying classifier structure.

The process of lexicalization constrains both the form and meaning of an item. In the following section, we look at the reverse process, in which core lexical items break these restrictions to exploit non-core mechanisms.

1.3.2 Modification of core lexicon signs

Just as a sign may move from the productive, gradient dimension of non-core lexicon into the more arbitrary and categorical core lexicon, the reverse process, a sort of delexicalization, may also occur. This transformation typically involves the signing

space taking on topographic meaning, so that the location/orientation of the sign is isomorphic with the location/orientation of the referent.

Typically core-lexical signs which are most likely to delexicalize are those whose origins lie in non-core lexicon, especially classifier structures. So, for example, a sign like **FILM**, based on the classifier for a video camera, could modify its location in order to describe the angle of the shot and/or its movement to express the motion of the camera. For two-handed signs based on classifier constructions, such as the LSE sign **BLACKBOARD** (see example in lexicalization processes [Lexicon – Section 1.3.1]), the relative position of each hand may be modified to include information about the size of the referent (‘a large blackboard’) or the relative position of the elements that make up the referent (‘write at the top of a blackboard’). In addition to the productive modification of the location and movement features during delexicalization, the configuration of a sign may also change in a motivated manner. For example, the LSE sign **TREE** shown below may be modified from its citation form by bending the fingers in order to express the idea of withered or gnarled branches (image taken from the LSE-Sign database – see Gutierrez-Sigut et al. (2015) for a description).



TREE

(LSE)

The delexicalization process involves the activation of the isomorphic space which characterizes the non-core lexicon, but in the context of core lexicon items. Signs which are derived from non-core mechanisms lend themselves well to “returning” to this visually motivated dimension. Although other core lexicon signs may also undergo this delexicalization, generally the process is restricted to signs whose phonological form will allow such meaningful modifications, namely signs which are not articulated on the body and so can be moved around the signing space. The transformation

of core lexicon signs is an important mechanism for expressing nuanced information (both spatial and – through metaphorical extension – in other conceptual domains), and is put to great use in poetic and narrative genres.

For the grammar writer, delexicalization means that signs that have been identified as core lexicon may show more variation in form than expected. Identifying what non-core mechanisms are at play in the sign language being described and when they are at work will help to isolate the citation form of core lexicon items and thus to characterize the phonological constraints that apply.

1.3.3 Simultaneous constructions and use of the non-dominant hand

The availability of two manual articulators in sign languages opens up the possibility of many sorts of simultaneous structures. Here we are concerned with the lexicon, and though simultaneous constructions are generally beyond the lexicon and operate at the level of syntax or discourse, a simultaneous structure may become a specific lexical item through the process of lexicalization or simultaneous compounding, as described in lexicalization processes [Lexicon – Section 1.3.1]. The components that make up these lexicalized simultaneous structures are frequently classifier constructions, but may also be buoys or core-lexicon items. The following are LSE examples of lexicalized simultaneous constructions with classifier components:

INSOMNIA	[non-dominant hand represents flat surface of the bed; dominant hand represents person tossing and turning]	
COMPUTER	[non-dominant hand represents computer screen; dominant hand represents hand typing at keyboard]	(LSE)

Simultaneous constructions are dealt with elsewhere in the Blueprint (see, for example, the simultaneous expression of various adverbial clauses [Syntax – Section 3.5] and simultaneous manual articulation [Syntax – Section 4.1.1.2] within the noun phrase), but we mention them here to point out to the grammar writer that what may look like a simple bimanual sign may in fact be a simultaneous construction operating well beyond the scope of the lexicon. In this sense, simultaneous constructions allow core-lexicon items to become more productive, in a similar way to what happens when they delexicalize by adopting non-core mechanisms.

The use of the non-dominant hand in simultaneous constructions, particularly with classifiers or points that are used to background a given referent, bears parallels with the use of buoys, which also appear on the non-dominant hand in simultaneous constructions. Again, these structures involve the layering of not only lexicon but also discourse and information structure and should not be confused with simple lexical items.

Elicitation materials

For eliciting lexical items, word and picture lists have been used. While many word lists exist from the field of spoken language research (such as the Swadesh lists), it may be more worthwhile to choose a list that has been adapted and used with other sign languages, in order to allow cross-linguistic comparison. (The Swadesh lists have been adapted for sign languages: see Woodward 1978, 1991, 1993; Hendriks 2008.) The lexicon elicitation list for the ECHO project has been used with several European sign languages, and both the list and the results are freely available on the project website (<http://sign-lang.ruhosting.nl/echo/>). For elicitation work with sign language users who are not proficient in the written language, it is more appropriate to use picture stimuli. Various picture stimuli are freely available, such as the Roisson & Pourtois object set (based on a classic set of pictures for which extensive normative data exists) (<http://www.nefy.ucl.ac.be/facecatlab/stimuli.htm>). For other picture sets, this compilation is a good place to look: <http://www.cogsci.nl/stimulus-sets>. Obviously, all word/picture sets should be adapted to be culturally appropriate for the language users participating in the elicitation sessions.

Elicitation techniques using word lists or pictures to collect lexical items may produce established core lexical signs but also non-core elements, especially classifier constructions. In some cases, these items may be lexicalized, in which case the forms will be subject to certain constraints (see core lexicon [Lexicon – Section 1.1] and lexicalization processes [Lexicon – Section 1.3.1]). Although one might also expect a lexicalized form to present greater uniformity across different informants, the core lexicon displays the same high degree of variation found throughout most sign languages (in most dimensions: geographic dialect, age, gender, etc.).

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Chapter 2 The non-native lexicon

2.0 Definitions and challenges

2.0.1 What is the non-native lexicon?

The native lexicon [Lexicon – Chapter 1] of a language, whether it is signed or spoken, consists of forms that have developed naturally through the usage of that language among native speakers, by employing the morpho-phonological resources of the language, and independent of any external influence. Besides that, all natural languages contain forms that are borrowed as a result of the contact between a language and the surrounding languages, individual contacts, or linguistic engineering (deliberate attempts of individuals or administrative institutions to introduce new (foreign) words).

The majority of sign languages are in contact with surrounding spoken languages including the dominant spoken language of the region that they are used in. Thus, the lexicon of sign languages is likely to contain forms that are borrowed from a spoken language. In addition, contact with other sign languages results in borrowing forms from other sign languages. Consequently, the non-native lexicon of a sign language consists of items that are either borrowed from (surrounding) spoken languages or other sign languages.

2.0.2 How to decide whether a particular form is borrowed

Any item in a language that can be traced to a form in another language (the donor language) counts as a borrowing (or a loan word/loan form). Some items, such as those containing fingerspelling [Lexicon – Section 2.2.2] / fingerspelling or mouthing [Lexicon – Section 2.2.3] / mouthing, are easy to identify as borrowed from spoken languages. However, beyond these two phenomena, it may not always be easy to identify the origin of a particular sign. Sometimes a form may resemble a form in another language, but may nevertheless be native in origin and may have the same or a similar form for other reasons (see also the section on loan compounds

[Morphology – Section 1.2]). Iconicity, for instance, is a factor that is fundamental to the expression of linguistic items in sign languages. Crucially, the iconic potential of sign languages may lead to phonological similarities across sign languages that do not result from borrowing. Therefore, when describing the non-native lexicon, it might be safer to stick to prototypical borrowings (fingerspelled forms and mouthings), unless the origin of a particular form is known for sure.

Taken together, there are various types of borrowed forms, and the grammar writer has to decide which of these exist in the sign language under question. The borrowed forms may or may not conform to the morpho-phonological structure of the native lexicon (see next section for discussion), and may not be traceable to a source. Thus, it is up to the grammar writer whether or not to indicate a form as borrowed when its origins are either not clear, or when the form fully complies with the phonological and morphological structure of the language.

2.0.3 Morpho-phonological marking of borrowed forms

Some borrowed forms have the same morpho-phonological properties as native forms. Thus, although traceable to a foreign origin, they may be morpho-phonologically indistinguishable from native items. But in some languages, borrowing has its morpho-phonological markings. To give an example from a spoken language, in Japanese, Chinese loan morphemes never have more than two syllables (Haspelmath & Simms 2010: 122). In ASL, non-native forms tend to allow more types of morphological affixation than native forms (Brentari & Padden 2001). Thus, in order to understand whether a particular item is borrowed, one has to have a good understanding about the morpho-phonological properties of the sign language in question.

2.0.4 When should a borrowed form be considered part of the lexicon?

Lexicalization is the process whereby a particular item is used in a new way to denote an entity, action, or state of affairs, as a result of which that item enters the lexicon of the language. Brinton & Traugott (2005: 96) define lexicalization as “the change whereby in certain linguistic contexts speakers use a syntactic construction or word formation as a new contentful form with formal and semantic properties that are not completely derivable or predictable from the constituents of the construction”.

Borrowed or native, it is not always easy to determine whether a form is productively used and recognized by native language users, and whether it is recurrent in the language or rather a one-off usage (hapax legomenon or nonce form), created on the spur of the moment and thus never entering the lexicon of the language. In order for this to be understood, corpus studies have to be conducted, but the general view

is that unless a form is used and recognized consistently in corpora, it should not be considered to be part of the lexicon.

Code-switching is another process that aggravates the identification of a form as being part of the lexicon or not. Forms from other languages that are used in code-switching may also be cases of hapax legomena.

2.0.5 Methodological challenges

As already mentioned above, the identification of borrowed forms is faced with a number of methodological challenges. First of all, the grammar writer should be very cautious about including forms in a list of borrowed items that are clearly iconic – although there may be iconic forms that are borrowed (as has been claimed, for instance, for the ASL sign *TREE* found in other sign languages).

Iconicity may also complicate the identification of initialized forms (see initialization [Lexicon – Section 2.2.2.1]. In particular, a sign may have a handshape that is iconically motivated but which coincidentally corresponds to the handshape from the manual alphabet representing the first letter of the corresponding word from the spoken language (e.g. the ASL sign *CUP* has a C/-handshape and the NGT sign *VORK* ('fork') has a V/-handshape). In addition, a sign may simply have a highly frequent handshape corresponding to the first letter of the word. Imagine, for instance, the sign *SIT* being signed with a S/-handshape. The grammar writer may want to be as conservative as possible when determining the status of a sign as being initialized.

There is also a methodological issue concerning mouthing [Lexicon – Section 2.2.3]. Caution should be taken as to whether a particular movement or configuration of the mouth should indeed be classified as a mouthing (i.e. whether it mimics (part of) the word corresponding to a particular concept in the spoken language) or rather a mouth gesture. It is known that mouthings may be reduced to the extent that they resemble a mouth gesture (Bergman & Wallin 2001).

2.1 Borrowings from other sign languages

The most typical lexemes borrowed from other sign languages are proper nouns [Lexicon – Section 3.1.2], in particular, toponyms (i.e., names of geographical locations, countries, towns, villages, rivers, mountains, etc.) and name signs of (famous) people. These terms are usually (but not always) the lexemes used in the sign language of the country where the respective location is found or the person lives, for example, most European sign languages use the sign for *UGANDA* borrowed from USL. Also, the ASL name sign for Barack Obama has been borrowed in other sign languages.

Fingerspelling may also be borrowed from other sign languages. For example, there are borrowed fingerspellings from ASL and Australasian Signed English used in Auslan (Johnston & Schembri 2007).

2.2 Borrowings from (neighboring) spoken language

There are various types of loan forms in sign languages, some typical (e.g. calques) and others less typical.

2.2.1 Calques/loan translations

Calques are loan items where a complex form is translated into the sign language part-by-part. These are usually forms made up of two stems, that is, they are typically compounds [Morphology – Chapter 1] / compounds. It is possible that other morphological items may be borrowed as calques but, to our knowledge, these are not attested in the literature.

The borrowed forms may be endocentric [Morphology – Section 1.1.1.1.1] or exocentric [Morphology – Section 1.1.1.1.2] compounds. An example of an endocentric compound borrowed from English can be found in Auslan: SUPPORT[^]GROUP (Johnston & Schembri 2007). An exocentric compound borrowed from the Turkish expression *kap+kaç* ‘snatch+run.away’ is seen in TİD: SNATCH[^]RUN.AWAY ‘snatch-and-run thief’.

In addition, idiomatic expressions might be borrowed, but again, this topic has only received very little attention to date.

2.2.2 Lexicalization of fingerspelling

Fingerspelling refers to the usage of the orthography of the spoken language (a letter/ letters from the spoken language) to express a concept, and is a common form of borrowing from a spoken language (see the section on the manual alphabet [Phonology – Section 1.1.3]; the grammar writer may wish to repeat the manual alphabet here for the reader’s convenience). Fingerspelling may be used in different ways:

- (i) One-by-one fingerspelling: This is the spelling of the whole word. This type of fingerspelling is sometimes used when expressing a concept (especially, but not exclusively, proper nouns) for which there is no corresponding sign (e.g. D-A-V-I-D). There is no need to discuss fully fingerspelled forms in the grammar, but see (iv).
- (ii) Initialization [Lexicon– Section 2.2.2.1]: The handshake associated with the first letter of the corresponding spoken language word forms part of the sign, e.g. ‘W’ in the sign WATER in ASL and ‘V’ in the sign VEGETARIAN in NGT and other sign languages.

- (iii) Single manual letter signs (SMLS): The handshape associated with the first letter of the corresponding spoken language word is used, possibly with repetition of the movement, e.g. ‘D’ (‘daughter’) in BSL.
- (iv) Multiple-letter signs [Lexicon – Section 2.2.2.2]: In these signs, more than one letter from the corresponding spoken word is used. There are various subtypes, which differ in the number of letters represented and in their phonological integration.
- (v) Fingerspelling + sign: These are cases where a fingerspelled form is used before, after or simultaneously with a sign; e.g. the TİD sign K[^]SPRINKLE (‘cumin’ from Turkish *kimyon*); such examples are discussed in the section on compounds with fingerspelled components [Morphology – Section 1.3], but the grammar writer may wish to (also) include a brief discussion of such cases in this section.

In addition to the above, fingerspelled items may be used as nonce forms in a particular communicative setting to refer to an entity that does not have a lexicalized sign (a lexeme). Imagine a situation, for instance, in which signers talk about Chardonnay wine. At first mention, the form would be fully fingerspelled, but subsequently, the signer will probably choose to reduce it C-H (or maybe C-Y). Use of this form, however, is limited to this particular discourse context and is therefore sometimes referred to as “local lexicalization”.

It is pointed out in Meir (2012: 102) that initialization in sign languages with a single-handed spelling system (a system where each letter is formed by one hand) is much more common than in languages where fingerspelling involves two hands, such as BSL, Auslan, and NZSL. This is due to the complexity of these systems, that is, the complexity of two-handed signs incorporating movement and location (see Cormier, Schembri & Tyrone 2008). However, languages with two-handed alphabets do lexicalize fingerspelling, in the guise of single- or multiple-letter signs. In any case, sign languages vary greatly in their usage of fingerspelling (see e.g. Machabée 1995 for LSQ; Ó’ Baoill & Matthews 2002 for Irish SL; Brentari & Padden 2001 for ASL; Sutton-Spence 1998 for BSL; Taşçı 2012 for TİD; see Carmel 2004 for an overview of different manual alphabets). Sign languages in contact with spoken languages that use non-alphabetic writing systems also have mechanisms for depicting the written form, such as the character signs that exist in Taiwanese Sign Language (Ann 1998) and handshape-movement combinations that represent syllables in Ethiopian Sign Language (Duarte 2010).

2.2.2.1 Initialization

The term “initialization” is used in different ways in the literature. Some researchers use the term only when an existing sign adopts a handshape from the manual alphabet, while others apply the term more broadly to refer to all signs in which the handshape represents the first letter of the corresponding spoken word. In the following,

we will use the term in the broader sense. The grammar writer, however, may wish to distinguish between the two types in the grammar.

In the first type, in which the handshape of a base sign is substituted by a handshape from the manual alphabet, the fingerspelled letter in a sense assimilates/incorporates features of the base sign to yield a meaning that is semantically related to that of the base sign. Consider the following examples from NGT (left image) and TİD (right image).



WINE (NGT): the sign has all of the features of the base sign **DRINK**, except for the handshape, which represents 'W' (☞).



PSYCHOLOGY (TİD): the sign has all of the features of the base sign **THINK**, except for the handshape, which represents 'P' (Taşçı 2012: 60–61).

Note that there may be cases in which it is impossible to clearly identify a base sign. For example, in ASL, the handshapes corresponding to the letters 'B', 'Y', and 'G', when combined with a particular location and movement mean 'blue', 'yellow', and 'green', respectively (Brentari & Padden 2001). In these cases, a generic sign (which may be underspecified for handshape) adopts a letter handshape and thus fingerspelling is used for semantic differentiation. Similarly, for the NGT sign **VEGETARIAN**, it is difficult to identify a base sign. The sign is articulated with a V/☞-handshape at the chin. Clearly, the location is iconically motivated, as the sign is articulated close to the mouth, but there is no particular base sign from the same semantic field that shares with **VEGETARIAN** all the features other than the handshape.

The grammar writer should be aware of the fact that the types of initialization attested in a sign language may depend on the type of fingerspelling used. In lexicalization of fingerspelling [Lexicon – Section 2.2.2], we already pointed out that initialization is less frequent in two-handed fingerspelling systems. Another case of initialization are single manual letter signs. In these signs, a handshape representing

a letter is articulated in neutral signing space, often with some movement. This kind of initialization is commonly observed in two-handed systems.

The TID system is special, as it features one-handed and two-handed letters, and all one-handed letters are articulated by the non-dominant hand. Interestingly, when a letter forms part of a sign, we observe hand reversal, that is, the letter is articulated by the dominant hand. For example, the letter 'L' in TID is articulated by the non-dominant hand, but the word LYCEE ('high school') is a single manual letter sign using the letter 'L' and is articulated by the dominant hand (Kubuş 2008: 52; Taşçı 2012: 42). Hand reversal (affecting only one-handed letters) is a tendency and is not without exceptions; however, where it occurs, it may be considered the phonological marker of borrowed forms.

2.2.2.2 Multiple-letter signs

This group contains various subtypes. In the following, we present these in the form of a list, but the grammar writer may wish to introduce corresponding separate sub-sections.

Acronyms and abbreviations. The difference between acronyms and abbreviations (alphabetism) is that the former are pronounced like words (e.g. NATO (/neɪtəʊ/) in English) while in the latter, each letter is pronounced separately (e.g. USA (/ju:eseɪ/) in English). It is unknown whether this difference is somehow reflected in sign language, for instance by means of different prosodic patterns. Below we do not make this distinction, but the grammar writer is cautioned to be aware of this possibility.

Frequently, in a fingerspelled form, certain letters are reduced or deleted. For instance, in Auslan B-W-C-K is used for Brunswick. Other examples include C-O ('company') and A-D-V ('advertisement') in Auslan, J-L ('July') in NGT, and B-B ('baked beans') in ASL and BSL. The examples illustrate that there are various options for the selection of letters. Crucially, this reduction is not tied to a particular discourse situation (as is the case of local lexicalization); rather, it is consistently used and should thus be considered fully lexicalized.

In addition, sign languages may, of course, make use of two- or multi-letter abbreviations that are the same as in spoken language (e.g. T-V or U-N-E-S-C-O).

Simultaneous forms. In some interesting cases, letters are partially or even fully simultaneously signed. As for the latter, they are rare because it is articulatorily difficult to simultaneously represent letters. The following two examples illustrate the phenomenon.

- The sign meaning *lui* ('lazy') in NGT: thumb and index form the 'L', index and middle fingers form the 'U', pinky forms the 'I'.
- The sign meaning *roi* ('king') in LSQ: index and middle fingers form the 'R', thumb and ring finger form the 'O', pinky forms the 'I' (Miller 2001: 157).



ROI ('king')

(LSQ)

Given the availability of two manual articulators, letters may also be expressed simultaneously on the two hands, sometimes in combination with a movement. In the ASL sign *TOTAL-COMMUNICATION*, for instance, the dominant hand assumes a -handshape while the non-dominant hand has a -handshape. As the alternating movement and the place of articulation (in front of the mouth) are the same as in the sign *COMMUNICATION* (an initialized sign with -handshape on both hands), *TOTAL-COMMUNICATION* is, in a sense, at the same time initialized (one initial on each hand) and a simultaneous multiple-letter sign.

Nativized fingerspelled loans. Certain fingerspelled words may undergo a process of reduction (deletion of certain letters), and/or a combination of simultaneous and sequential elements. Examples include the following:

- The sign meaning *WC* in NGT: thumb, index, and middle fingers form the 'W', they repeatedly bend to resemble the 'C' (see left image below).
- The sign meaning *blauw* ('blue') in NGT: the sign is sequential in the sense that the B/-handshape changes into the L/-handshape; this change is accompanied by an orientation change of the palm that corresponds to the orientation change that characterizes 'U'.
- The sign meaning *Van* (name of a town in Turkey) in TİD: the sign begins with a combination of the letters 'V' and 'A', followed by 'N' (see right image below).



wc (NGT)



VAN (TİD)

The grammar writer is encouraged to look for similar forms, as there may be many different ways to simultaneously combine letters.

2.2.3 Mouthing

The term mouthing refers to mouth patterns that are derived from spoken languages, i.e. the (silent) articulation of (a part of) of a word from the spoken language simultaneously with the sign (other terms that have been used in the literature are “spoken component” and “word pictures”).

Sign languages vary in the extent to which mouthing is used. For example, ASL is considered to have less mouthing than European sign languages (Sandler & Lillo-Martin 2006). Still, it seems likely that at least some mouthings are used in almost every sign language. When describing and analyzing mouthings, the biggest challenge is to determine whether a particular mouthing is part of (the lexical description of) a sign or whether it is rather used inconsistently within and across signers (see Bank (2015) for NGT). Indeed, there is an ongoing debate about this issue in the literature (see articles in Boyes Braem & Sutton-Spence 2001). It is up to the grammar writer to decide whether she/he wants to enter this discussion or whether she/he rather wants to present an overview of the attested options, possibly in combination with a discussion of selected cases in which a (full or reduced) mouthing is consistently used, that is, appears to be obligatory and can thus be considered a phonological building block of the sign (see the section on mouthings [Phonology – Section 1.5.2] in the Phonology Part).

2.2.3.1 Full forms

Some mouthings involve the full form of a spoken word. Full mouthings may be redundant in that they do not add any meaning to the manual sign (which thus would also be understandable without the mouthing), or they may disambiguate the meaning of manual homonyms or polysemes. For both types, in the sign languages studied to date, signs accompanied by mouthings are nouns in the majority of cases (Adam 2012).

As for redundant cases, the DGS sign FLOWER might, for instance, be accompanied by the mouthing of the German word /blu:mə/ (‘flower’). This mouthing would be redundant, as the sign is not ambiguous – it has no other obvious meaning but ‘flower’. Still, there might be situations, in which a signer wishes to refer to a specific flower for which no dedicated sign exists, e.g. a geranium. In this case, the signer might use the sign FLOWER in combination with the German mouthing /gera:njə/, and the mouthing would thus be disambiguating rather than redundant. Similarly, in SSL, the sign HOUSE can mean ‘foundation’ when accompanied by the appropriate mouthing.

Clearer examples of disambiguating mouthings include cases in which the sign by itself has a very general meaning. In NGT, for instance, there is a sign that could be glossed as *SMALL-OBJECT*. Depending on the accompanying mouthing, the sign may assume meanings like ‘pea’, ‘pearl’, and ‘detail’.

While nouns are most commonly accompanied by mouthings, other lexical elements, and even functional elements, may also be accompanied by mouthings. In TİD, for example, the verb *SAY* is usually accompanied by the mouthing /de/ (the stem of the corresponding Turkish verb) in reported utterances. If other word classes appear sufficiently frequently with mouthings, the grammar writer may wish to distinguish between different word classes within this section.

2.2.3.2 Reduced forms

Often mouthings are reduced. When only part of the spoken word is retained, this is usually the first part of the word, often the first syllable. This is true, for instance, for the NGT sign *MOTHER*, which may be accompanied by the mouthing /mu:/, the first syllable of the corresponding Dutch word *moeder* (‘mother’). Reductions may be motivated by the fact that non-manual activity tends to be synchronized with manual movements (one movement, one syllable; e.g. the NGT sign *MOTHER* has one movement), but there are also exceptions to this. For the sake of synchronization, reduction occasionally goes hand in hand with reduplication. The NGT sign *HOLIDAY*, for instance, which is lexically specified for two short movements, is often accompanied by the mouthing /fafa/, the reduplicated first syllable of the Dutch word *vakantie* (‘holiday’).

As a final note, we wish to point out that it may at times be difficult to distinguish reduced mouthings from mouth gestures [Phonology – Section 1.5.1].

2.2.3.3 Mouthing and fingerspelling

In some sign languages, mouthing can accompany, and potentially disambiguate, fingerspelling (e.g. Auslan, Johnston & Schembri 2007). In TİD, the combination of fingerspelled *K* with the mouthing /mee/, for instance, yields the meaning ‘lamb’: *K* is the first letter of the Turkish word *kuzu* (‘lamb’) while /mee/ is the onomatopoeic form for bleating in Turkish. If cases like these exist, the grammar writer may want to add such a section.

2.2.4 Other marginal types of borrowing

Below, we provide a non-exhaustive list of further borrowing phenomena that may or may not exist in the sign language under investigation. This list is meant as an invitation to the grammar writer to explore further idiosyncratic cases of borrowing, some of which may not even have been previously described.

“Word pictures” on the hand or on the face.

In these, the handshapes by themselves, or in combination with a body part, mimic the way a written word (from the spoken language) looks. An example is the sign for WC in TİD, which consists of flexed thumb and index finger without contact, representing the ‘C’, plus the rest of the fingers extended, which resembles the ‘W’ (Kubuş 2008).

Borrowings based on the phonological similarity of forms in the donor language.

If two forms are homophonous in the spoken language, they might be translated by a single form into the sign language. Kendon (1988: 195) reports that in Warlpiri Sign Language, a secondary sign language of Central Australia, the sign for ‘shoulder’ is the same as the sign for ‘medical sister’ (tapping the ipsilateral shoulder with middle finger) because in spoken Warlpiri, the word *jija* also has both these meanings.

This type of borrowing thus results in forms which look alike despite being semantically unrelated. The similarity might be based on the written forms, or on lipreading. An example of the latter motivation is the sign for MATCHSTICK and CYPRUS in TİD; phonologically the two corresponding Turkish words, *kibrit* (‘matchstick’) and *Kıbrıs* (‘Cyprus’) are not that close, but the mouth configurations observed in lipreading are very similar (Demir 2010: 6).

Rare, idiosyncratic forms of borrowing.

We end this section with a form for which it is not even clear whether the term borrowing is suitable. Nevertheless, we add it here to once again alert the grammar writer to the possible presence of rare items. In TİD when oralism was the standard teaching in schools for the deaf, to produce the nasal [m] the students were asked to put their index finger on the nose of the instructor (for nasality). This then became a representation for the letter ‘M’ in a few forms where the corresponding Turkish word begins with ‘m’. Today, in some registers, it is part of the sign DIRECTOR, which is *müdür* in Turkish.

2.3 Borrowings from conventionalized gestures

In all languages, spoken or signed, speech is sometimes accompanied, simultaneously or sequentially, by gestures (co-speech gestures). Co-speech gestures may be articulated manually or non-manually. In spoken languages, manual and non-manual gestures are for the most part, but not exclusively, articulated simultaneously with the vocal utterance (e.g. ‘palm-up’ gesture or shoulder shrug). In contrast, in sign languages, only non-manual gestures commonly occur simultaneously with a string of signs, as signs and manual gestures employ the same articulators. Many such gestures are cross-cultural, but some are language-specific (Kita 2009). In this section, we do not discuss gestures as such, but highlight those that have become conventionalized, that is, have become part of the vocabulary of a sign language,

be it as a content word (through lexicalization) or a functional item (through grammaticalization). These forms, by virtue of originally belonging to the gestural system, are thus part of the borrowed vocabulary. For more information about identifying a specific form as a gesture in a sign language, rather than a lexicalized part of the vocabulary see Özyürek (2012) and Janzen (2012).

An important distinction when classifying gestures concerns the origin of gestures: gestures may be language- or culture-specific, or they may belong to the set of gestures shared by (almost) all languages irrespective of modality. Crucially, both types of gestures may assume lexical and/or grammatical functions in a sign language.

2.3.1 Lexical functions

To the best of our knowledge, all gestures identified to date that entered the lexicon of a sign language with a lexical function are manual gestures. An example is the TİD sign GOOD/NICE. This sign, which is articulated with a Baby-O () handshape is borrowed from the Turkish gesture. The corresponding Turkish gesture also means ‘good/nice’, but in TİD, the sign is used compositionally and is integrated into the structure of the phrase. Other examples are ‘good’ (‘thumbs up’ gesture) and ‘tasty’ in NGT, which have been borrowed from Dutch co-speech gestures and have been lexicalized as the signs GOOD and TASTY. In these cases, we are thus dealing with the lexicalization of so-called “emblematic gestures”.

Gestures that are less culture-specific in nature may also assume a lexical function. The clearest example is the deictic (pointing) gesture, which is commonly used for deixis (see also the section on pointing [Lexicon – Section 1.2.2]). In many sign languages, pointing signs are used to refer to body parts (e.g. pointing to ear for EAR) or for colors (e.g. pointing to lips for RED). As the use of such gestures in a sign language may be abundant, it is up to the grammar writer to decide how many examples she/he wishes to include in this section. A general note on the possibility of using pointing signs with lexical meaning may be sufficient.

2.3.2 Grammatical functions

In sign language, manual and non-manual gestures may be used to fulfill grammatical functions, that is, they may grammaticalize (Wilcox 2007). As for manual gestures, consider again the pointing [Lexicon – Section 1.2.2] gesture, which, across sign languages, is used in various pronominal functions: personal pronoun, demonstrative pronoun, locative pronoun, etc. (Meier & Lillo-Martin 2013). Clearly, a discussion of such uses can be brief, as they may also be discussed in detail in the section on pronouns [Lexicon – Section 3.7]. Another example is the ‘palm-up’ gesture (Open Hand Supine; Kendon 2004), which has been found to fulfill various functions across sign

languages: on the one hand, discourse functions such as turn-signal and discourse particle [Lexicon – Section 3.11.3]; on the other hand, grammatical functions such as question particle [Lexicon – Section 3.11.2], and conjunction [Lexicon – Section 3.9] (see Van Loon, Pfau & Steinbach (2014) and references therein).

Illustrative examples of non-manual gestures fulfilling a grammatical function are culture-specific head movements signaling negation [Syntax – Section 1.5] in sign languages. Most common across sign languages are a side-to-side headshake and backward head tilt. For such cases, it will be important to demonstrate that the non-manual marker indeed behaves like a grammatical element (e.g. obligatoriness, grammatically constrained distribution).

Note finally that some gestures are first lexicalized as a sign and then grammaticalized. This kind of two-step process has been argued to underlie the development of certain ASL modals (Wilcox & Wilcox 1995). The ASL modal CAN, for instance, has grammaticalized from the Old French Sign Language (Old LSF) lexical sign STRONG, which in turn can be traced back to a gesture referring to upper body strength. Similarly, it has been claimed that in Kata Kolok, the ‘thumbs up’ gesture has lexicalized as the sign GOOD, which in turn grammaticalized into a marker of possession. Should such cases exist in the sign language under consideration, then the grammar writer may want to include the discussion of the first step (gesture to lexical element) in the previous section (lexical functions [Lexicon – Section 2.3.1] and that of the second step (lexical element to grammatical marker) in this section.

Elicitation materials

There is no reason to assume that borrowed forms should be elicited in a different way than native items. Therefore, the elicitation materials that apply to all lexical items can be used for borrowings as well.

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Chapter 3 Parts of speech

3.0 Definitions and challenges

3.0.1 What are parts of speech?

Parts of speech can be detected in any language and refer to different categories of lexical items based on syntactic or morphological behavior. Typical parts of speech are nouns or verbs. In the lexicon, there is a distinction between functional words or closed-class elements (usually without a concrete meaning, generally quite short, and rather frequent) and lexical/content words or open class elements (with specific meaning, usually longer, but lower frequency). Nouns, verbs, adjectives, and usually adverbials are lexical words while pronouns, adpositions, conjunctions, numerals, quantifiers, and interjections are functional words and members of a closed class. The notion ‘closed class’ implies that it is generally possible to enumerate all such words in a given language in an exhaustive list. As in other languages, new words resulting from sign language word formation processes are first and foremost lexical words such as nouns, adjectives, and verbs/predicates. Although some basic categories (such as noun and verb) exist across all languages, there is some variation in the parts of speech present in each language.

In sign languages, different parts of speech can be found in the core lexicon [Lexicon – Chapter 1] and across the native/non-native distinction. A typical word/sign that would be classified as a noun would be a part of the core lexicon (e.g. HOUSE) but in some sign languages, a noun may be a non-native lexeme (e.g. a fingerspelled name such as M-A-R-Y or a fingerspelled sign [Lexicon – Section 2.2.2.2] such as BANK in ASL and Æ-X-L-I (‘tumor’) in ÍTM).

Differentiating between different parts of speech is notoriously difficult for sign languages, and identifying the part of speech that a given sign belongs to is not always straightforward. A noun, for instance, is semantically easy to identify if it is related to a specific object/entity in the world. Most verbs, however, usually have a nominal counterpart with the same phonological form, and it is not always easy to make a distinction between a verb and a noun with the same semantic basis in sign languages (e.g. RING-DOORBELL and DOORBELL in LSE). Obviously, this is related to the question of what may serve as a predicate [Syntax – Section 2.1.1].

A further important aspect of parts of speech in sign languages is the fact that – apart from manual elements – we find non-manual realizations for certain categories of parts of speech. Some adjectives exhibit a manual form (e.g. BIG), but may also be realized non-manually when modifying a noun. Specific non-manuals such as *puffed cheeks* can be simultaneously layered on the sign HOUSE to mean ‘a big house’. The same is the case for manual and non-manual adverbials.

Many elements listed as a category of parts of speech in sign languages may have no manual realization at all. This happens with adpositions [Lexicon – Section 3.8] in sign languages, in particular spatial adpositions, which in some cases can be expressed by a manual sign. More frequently, however, the relational information usually conveyed by an independent spatial adposition is expressed by means of relative locations in the signing space. Thus, there may be sign languages that have either manual signs as adpositions, or only spatial modification, or a combination of both.

3.0.2 Methodological challenges

When investigating parts of speech in a specific sign language, the distinction between the different categories is not always clear-cut. Thus, methodologically, it is important to bear in mind that the phonological form of a sign does not necessarily tell you something about the status of the sign. Semantics may tell you about classical common nouns such as HOUSE, but a sign glossed as CYCLE may theoretically be a noun (‘bicycle’) or verb (‘to cycle’) in certain cases.

Furthermore, as always when working with a sign language, great care must be taken to avoid undue influence from glosses and translations into the spoken language. A given sign may appear to be a different part of speech depending on the translation given to it (e.g. ‘My leg **hurts**’, ‘I’ve got a **pain** in my leg’, ‘The treatment is really **painful**’). The part of speech must be identified based on the language-internal properties of the sign, namely its syntactic (where the sign can appear in the sentence and what other signs it can or cannot combine with) and morphological properties (what inflections or modifications the sign can undergo). As we shall see in the section on common nouns [Lexicon – Section 3.1.1], various indications may help to distinguish between nouns and verbs, for instance, sentence structure, accompanying non-manual features, and inflectional marking (such as aspectual and adverbial for verbs, and plurality for nouns).

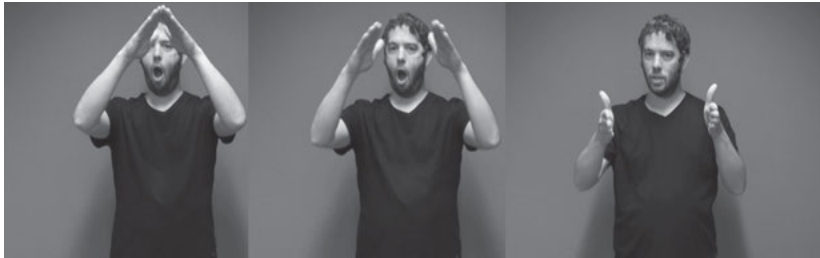
Nevertheless, there are many grey areas: the grammar writer should bear in mind, for example, that aspectual marking may appear on verbs but also on predicative adjectives; plural marking may appear on nouns but also on nominalized adjectives; and quantifiers may appear with nouns but also with verbs as adverbials. Thus, providing a list for each category of parts of speech should be treated with care.

3.1 Nouns

Semantically, a noun is a part of speech that usually denotes a person, place, entity, animal, idea/concept, etc. Formally, nouns often combine with articles and adjectives, forming a noun phrase. Nouns in sign languages – at least some of them – may inflect for number, but rarely for case and gender. In the following, we distinguish two types of nouns, common nouns and proper nouns, and we address name signs in the context of the latter group.

3.1.1 Common nouns

Common nouns are nouns that describe classes of entities, which can be concrete or abstract. The following examples are representative of common nouns, DGS HOUSE and ÍTM STUDENT being concrete, DGS IDEA being abstract.



HOUSE

(DGS)



IDEA

(DGS)

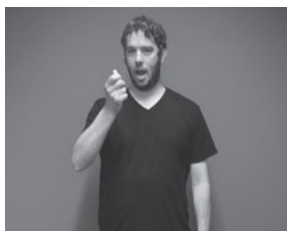


STUDENT

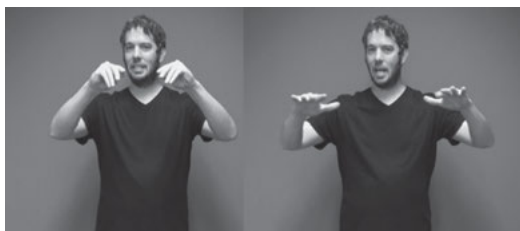
(ÍTM)

Remember from the discussion in the introduction that distinguishing between different parts of speech is often difficult in sign languages. Of the three examples given above, the first two can be clearly classified as nouns, as they are never used as verbs. As for the third example, the two sign languages differ: while the sign for STUDENT may also mean ‘to study’ in DGS, in ÍTM, this sign is specifically nominal and different from the verb ‘to study’.

As an additional categorization, within the group of common nouns, we can distinguish countable nouns from non-countable nouns – also known as count nouns and mass nouns. In contrast to count nouns (like the three nouns above), mass nouns cannot combine with numerals (and certain quantifiers) or be pluralized [Morphology – Section 4.1]. Consider, for instance, English mass nouns like *money* and *rice*, which have no plural form and which combine with the quantifier *much*, while count nouns generally take the quantifier *many*. The following examples from DGS are representative of mass nouns.



MONEY



SAND

(DGS)

Nouns in sign languages can also be used in a predicative function. Most sign languages studied to date do not exhibit copula verbs, so it is not always easy to detect clausal constructions, as shown in the following DGS example, where TEACHER functions as a nominal predicate.

POSS₁ NEIGHBOR IX₃ TEACHER
‘My neighbor is a teacher.’

(DGS)

While nouns are semantically easy to identify if they are related to a specific object/entity in the world, most verbs usually have a nominal counterpart with the same (or a very similar) phonological form, and it is therefore not always easy to make a distinction between a verb and a noun with the same semantic basis in sign languages. The following two examples illustrate this challenge.

AIRPLANE/FLY ('airplane/fly')

CHAIR/SIT ('chair/sit')

(DGS)

The noun *airplane* and the verb *fly* in DGS (and many other sign languages) are usually produced by an identical phonological form; in DGS, this is the -handshape which moves in an arc-movement across the signing space. The nominal or verbal function of the sign can only be detected in distributional terms, that is, its place of occurrence within the sentence. Thus, either the syntactic and semantic context, or in some cases also the mouthing, clarifies the difference. In contrast, in ÍTM, the same pair AIRPLANE/FLY is distinguished by a different path movement and a different mouth pattern. Thus, sign languages may vary in their way of differentiating between verbs and nouns (see section on noun-verb pairs [Morphology – Section 2.1.2.1] for further discussion).

The most important way to identify parts of speech is by looking at sentence structure. The basic sentence structure in verb-final languages, for instance, gives a strong indication of which element has a predicative status (usually verbs, but possibly also nouns or adjectives) and conversely which elements are subjects or objects (usually nouns). Furthermore, (reduced) mouthings [Phonology – Section 1.5.2] more often appear on nouns (and adjectives) than on verbs. Verbs are often accompanied by specific mouth gestures [Phonology – Section 1.5.1] or show no mouth movements at all. In addition, aspectual marking [Morphology – Section 3.3] (e.g. reduplication) and adverbial marking [Lexicon – Section 3.5] (e.g. mouth gestures, facial non-manuals) may help to make a decision in favor of a verb. Plural marking and quantification by means of numerals is indicative of (countable) nouns. In some sign languages, movement is added to the verbal sign as opposed to a reduced movement on the noun (e.g. SMOOTHING-IRON vs. IRONING in ASL).

Given the idea of ID glosses (a unique label given to each sign, a fundamental part of corpus annotation) and the fact that a single sign may very often have different functions (i.e. homonymy is more frequent than in spoken languages), it is disputable whether we should distinguish between different parts of speech at all. The general question of whether we find one or two (or more) lexical entries for such signs, as in the examples above, further adds to this debate. Thus, categorizing a given element as a noun (rather than as a verb) should be treated with care. In any case, to the extent possible, the grammar writer should provide a few representative examples of the different types of common nouns and also attempt to provide evidence for the classification.

3.1.2 Proper nouns and name signs

As opposed to common nouns, proper nouns describe specific entities rather than classes of entities. These can be country names, names of unique objects such as planets or famous monuments, people's names, brand names, etc. For toponyms (place names, such as countries and cities), a sign language may have its own indigenous sign, which may be a native core lexicon [Lexicon – Section 1.1] sign, as in the first two examples below, or may have a degree of non-nativeness [Lexicon – Chapter 2] involving fingerspelling based on the written form of the place name, as in the third example.



3_3.1.2_1_DTS_ROME

ROME (DTS)



3_3.1.2_2_LSF_LA-TOUR-EIFFEL

LA-TOUR-EIFFEL (LSF)



M-c ('Manchester')

(BSL, Fenlon et al. 2014)

As noted in the section on borrowings from other sign languages [Lexicon – Section 2.1], there has been a recent tendency for sign languages to adopt the place sign from the sign language local to that place: for example, the BSL sign for SPAIN used to be a visually motivated imitation of a flamenco dancer with castanets but has since become the less iconic sign used in LSE. There has also been a further tendency to modify toponymic signs that may be seen as politically incorrect. For example, many European sign languages have a sign for INDIA which involves pointing at the centre of the forehead; in BSL, a newer sign has appeared which traces the shape of the Indian subcontinent. Sign language users' attitudes towards an acceptance of such borrowings and changes may vary, and some signers may have strong opinions in either direction.

Name signs are a type of proper nouns. On the one hand, there are name signs for famous people (e.g. Barack Obama), and just like toponyms, these are

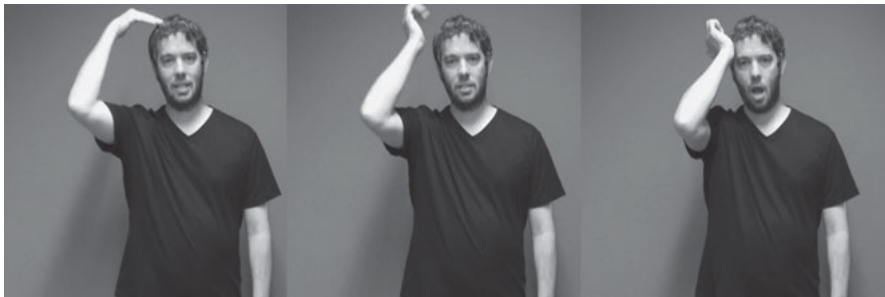
commonly borrowed from the sign language of the country where the famous person lives. On the other hand, there is also the cultural tradition of creating name signs for sign language users and people they interact with (Mindess 1990; Paaes 2010) – simply because using a sign is quicker and less cumbersome than fingerspelling a name. Within sign language communities, there are various strategies for creating personal sign names, and the grammar writer is encouraged to discuss strategies common to the sign language in this section. One is a form of metonymy, which uses the physical properties of a person's appearance (e.g. curly hair, big nose), properties of their character (e.g. blushes easily), or typical actions or behaviors (e.g. loves hiking) to denote the person. The name sign usually follows general word formation rules of the respective sign language and is more or less unique within a specific group of people. Here, name signs are glossed with the respective name in small caps to distinguish them from fingerspelled names (e.g. C-H-R-I-S-T-I-A-N). It is important to note that a name sign usually does not refer to all individuals carrying the name (e.g. to all Julias), but rather to one specific individual. If the sign language to be described behaves differently in this respect, this would certainly be worth mentioning.



3_3.1.2_4_ÍTM_JÚLÍA

JÚLÍA (sign name)

(ÍTM)



CHRISTIAN (sign name)

(DGS)

Another common strategy for creating name signs is to use the handshape of the initial letter of the written name, often adding a specific movement or location, a form of initialization [Lexicon – Section 2.2.2.1]. For instance, the sign for a specific Júlía in Iceland consists of the handshape ‘J’ moving in an arc in neutral space (like the letter J). Some name signs may incorporate two letters, such as the person's initials. Alternatively, names may be entirely fingerspelled, often resulting in a reduced form of the type mentioned in multiple-letter signs [Lexicon – Section 2.2.2.2].

3.2 Verbs

Ever since the seminal work by Padden (1988 [1983]) on the verbal system of ASL, sign language verbs are commonly divided into three macro-categories:

1. Plain verbs [Lexicon – Section 3.2.1], i.e. verbs that cannot be spatially modified to show manual agreement (but they can usually inflect for aspect [Morphology – Section 3.3]);
2. Agreement verbs [Lexicon – Section 3.2.2] (also called “directional” or “indicating” verbs), i.e. verbs the movement and/or orientation of which can be modified to target loci associated with the subject and/or (indirect) object, thereby expressing agreement with these arguments;
3. Spatial verbs [Lexicon – Section 3.2.3], i.e. verbs that can be spatially modified to target the loci associated with locative arguments.

As for the internal structure of this section, we adopt this three-way distinction. It should be noted, however, that there have been suggestions in the literature to give up the distinction between the two types of verbs that can be spatially modified, that is, agreement and spatial verbs. It is up to the grammar writer to decide how to structure this section, and also which terminology to use (e.g. “agreement verb” vs. “indicating verb”). Obviously, decisions taken here will have repercussions on the section on agreement in the Morphology Part [Morphology – Section 3.1]. It is important that terminology is used consistently throughout the Blueprint.

The goal of this section is not to provide exhaustive lists for the different verb types. Rather, the grammar writer should examine the existence of the different types, provide representative examples, and – if possible – identify patterns. It may be the case, for instance, that verbs belonging to one group show recurring phonological or semantic features. It is also worth noting that when identifying verb types, scholars often focus on transitive (and ditransitive) verbs, but intransitive verbs may also be of the agreeing or plain type. Investigating the different verb types is interesting in light of the fact that some sign languages – in particular, some shared sign languages – appear to not make this three-way distinction. In Kata Kolok, a shared sign language of Bali, for instance, verbs cannot be spatially modified (with the possible exception of the verb GIVE). If this is the case in the sign language under investigation, it should certainly be reported here.

Note that auxiliaries should not be discussed in the present section but in a separate section on lexical expressions of inflectional categories [Lexicon – Section 3.3].

3.2.1 Plain verbs

The class of plain verbs is negatively defined as the class of verbs that cannot be spatially modified to agree with one or two of their arguments. In many cases, this constraint results from the phonological specification of the sign: body-anchored

signs cannot be detached from the body location to move between loci associated with arguments. This is true in many sign languages for transitive verbs like LOVE (contact with chest) and UNDERSTAND (signed on or close to the forehead). Note that lack of path movement is not sufficient for classifying a verb as a plain verb; some verbs can express agreement with an object by means of the orientation of the hand. Plain verbs may also be intransitive, as is true in many sign languages for verbs like CRY and LAUGH (which, again, are commonly body-anchored). The grammar writer should investigate the existence of transitive and intransitive plain verbs and should attempt to identify in how far phonological features determine class membership. If, for instance, plain verbs can be identified that are not body-anchored and involve path movement, this should certainly be pointed out.

3.2.2 Agreement verbs

In contrast to plain verbs, agreement verbs can be spatially modified to mark their arguments. The prototypical case are verbs that express (concrete or abstract) transfer and involve path movement. It is commonly assumed that such verbs are not lexically specified for the beginning and the end point of the movement. The path movement can then be modified such that the beginning point coincides with the locus associated with the subject argument and the end point with the locus associated with the object argument (Lillo-Martin & Meier 2011; for more details, see the section on agreement in the Morphology Part [Morphology – Section 3.1]). The following are examples of transitive agreement verbs from two sign languages. The LSE verb EXPLAIN in (a) starts at the locus in neutral signing space associated with Rita and moves towards the signer's body, thereby expressing agreement with a third person subject and a first person object. In contrast, the BSL verb HELP in (b) agrees with third person subject and object by moving between two loci in the signing space.

- a. RITA_x EXPLAIN₁
 'Rita explained [it] to me.' (LSE)
- b. OLIVER_x HELP_y CHRIS_y
 'Oliver helped Chris.' (BSL)

In addition, a verb without path movement may agree with an object by means of the orientation of the fingers or the palm. As mentioned before, scholars often focus on (di)transitive verbs when describing sign language agreement, but it may well be the case that some intransitive verbs can also be spatially modified. In the following NGT example, the boy is localized, and the verb GROW is then articulated at this locus in signing space.

- BOY INDEX₃ GROW
 'The boy grew up (= got taller).' (NGT)

Finally, for a number of sign languages, verbs have been identified that map the grammatical categories subject/object differently on the beginning and end slot of the movement; these are the so-called “backward verbs”. In NGT, for instance, the verb *INVITE* moves from the locus associated with the object towards the locus associated with the subject.

If only a rather limited set of agreement verbs exists in the language, then the grammar writer could attempt to provide an exhaustive list. However, as before, the main goal of this section is not to provide a list but rather to scrutinize the availability of different types of agreement verbs (transitive, intransitive, backward) and to offer illustrative examples. Crucially, the realization (i.e. phonological instantiation) of agreement will not be discussed in this section but in the section on agreement [Morphology – Section 3.1] in the Morphology Part.

3.2.3 Spatial verbs

Spatial verbs, like agreement verbs, may be spatially modified to mark their arguments. In contrast to agreement verbs, however, the referents marked by spatial verbs do not prototypically participate in the argument structure of the verb since they are locative. Some authors assume that spatial verbs in sign languages take locative arguments, and as such, they can be argued to show agreement with their arguments (in the same way that agreement verbs do). The following are examples of spatial verbs. In example (a), the verb expresses movement of an object from one location to another, but the beginning and end point of the movement do not coincide with loci associated with a subject or an object. In (b), the beginning of the movement coincides with the locus established for the shelf, which again is neither a subject nor an object (note, however, that in both examples, the handshape may reflect shape properties of the manipulated or moving object [Morphology – Section 5.1]).

- a. INDEX₁ BOOK_x MOVE_y
‘I moved the book from here to there.’ (LSE)
- b. SHELF_x, BOOK_x FALL-DOWN_y
‘The book fell down from the shelf.’ (LSC)

3.3 Lexical expressions of inflectional categories

The elements we discuss in this section are signs that co-occur with lexical verbs and that, in a sense, support the lexical verb by carrying or expressing certain morpho-syntactic features, most importantly tense, aspect, modality, or agreement. These are elements that would usually be referred to as “auxiliaries” or “auxiliary verbs”, but here we refrain from using these labels, as at least for some of the elements to be discussed, it is not certain whether they are indeed verbal in nature. However, if the

verbal status of the relevant elements can be determined with some certainty for a specific sign language, then the grammar writer may prefer to adapt the header of this section accordingly. In this case, s/he might even prefer to include this section as a whole within the previous section on verbs (but maintaining the internal structure of the present section).

As for the suggested subsections, it has to be pointed out that while aspectual markers [Lexicon – Section 3.3.2] and modality markers [Lexicon – Section 3.3.3] appear to be common across sign languages, agreement markers [Lexicon – Section 3.3.4] and especially tense markers [Lexicon – Section 3.3.1] are less common (for overviews, see also Pfau et al. (2012) for tense, aspect, and modality markers, and Sapountzaki (2012) for agreement markers). The first three categories to be discussed – tense, aspect, and modality – are known to closely interact; they are therefore commonly subsumed under the acronym “TAM-markers”. It is up to the grammar writer to decide whether s/he wants to add an additional structural layer by distinguishing TAM-markers as a group (Section 3.3.1, with internal structure) from agreement markers (Section 3.3.2).

3.3.1 Tense markers

In sign languages, tense is generally not marked on verbs, that is, there is no tense inflection (for exceptions, see the section on tense in the Morphology Part [Morphology – Section 3.2]). Rather, information about tense is generally provided by temporal adverbials [Lexicon – Section 3.5.2]. Tense markers are a third option for specifying tense information; however, to date such markers have only been described for ASL (Aarons et al. 1995; Neidle et al. 2000).

Neidle et al. point out that tense markers (which they call “lexical tense markers”) may be very similar in form to temporal adverbials but that they differ from adverbials with respect to their distribution and their articulation. First, while temporal adverbials can occur in various positions within the clause in ASL (e.g. sentence-initially and sentence-finally), tense markers have a highly restricted syntactic distribution. In fact, they can only appear in the position between the subject and the verb, as shown in example (a) below for the lexical tense marker $\text{FUTURE}_{\text{tns}}$. The grammatical status of tense markers is corroborated by the observation that they take the same position as modal verbs, and that they cannot co-occur with modals – in contrast to temporal adverbials. Neidle et al. further show that tense markers cannot occur in infinitival clauses, as shown in example (b) – again in contrast to temporal adverbials which can be used in such environments.

- a. JOHN $\text{FUTURE}_{\text{tns}}$ BUY HOUSE
'John will buy a house.'
- b. * JOHN PREFER $\text{FUTURE}_{\text{tns}}$ GO MOVIE
'John prefers to go to a movie.'

(ASL, Neidle et al. 2000: 79f)

Furthermore, Neidle et al. argue that tense markers cannot vary in their articulation; in particular, they have a fixed pathlength. In contrast, the path movement of adverbials to which the lexical tense markers are related (e.g. *FUTURE_{adv}*) can be modified to provide information about distance in time. Taken together, the observations made by Neidle et al. – restricted sentential position, ban on use in infinitival contexts, and non-modifiability – could serve as tests to determine whether comparable markers exist in the sign language under investigation.

3.3.2 Aspect markers

Free aspect markers appear to be rather common across sign languages (for aspectual inflection, see the section on aspect in the Morphology Part [Morphology – Section 3.3]). Just like the tense markers discussed in the previous section may be related to temporal adverbials, aspect markers may be related to lexical verbs (e.g. *FINISH*) or adverbials (e.g. *ALREADY*). Two aspectual meanings for which free markers have been described for various sign languages are the completive and the perfective – two meanings that are not always easily distinguished.

Fischer & Gough (1999 [1972]) have described the use of the aspect marker *FINISH* in ASL. The first example below illustrates use of *FINISH* as a lexical verb. Example (b) is quite similar, but now *FINISH* occupies the position preceding the main verb. In this position, it takes on a grammatical meaning, namely that of completive aspect. Finally, in example (c), *FINISH* serves as a marker of perfective aspect. In this use, it may appear in initial, second, or final position.

- a. YOU FINISH EAT, WE GO SHOPPING
'When you('ve) finish(ed) eating, we'll go shopping.'
- b. YOU EAT FINISH, WE GO SHOPPING
'After you eat, we'll go shopping.' (ASL, Fischer & Gough 1999: 68f)
- c. FINISH EAT YOU?
'Have you eaten?' (ASL, Isenhath 1990: 203)

The fact that subtle aspectual distinctions have to be carefully investigated is revealed by the observation that Israeli SL employs two different markers for the two aspectual meanings (Meir 1999). For marking perfective aspect, Israeli SL signers use the sign *ALREADY*, the source of which is an adverb. Perfective constructions strongly imply that an action is terminated, and in most cases, this may also imply completion of the action; this, however, is by no means a prerequisite. The sentence in (a) below, for instance, could very well be uttered in a context where I got tired of writing the letter and therefore did not finish it (note that the ASL sign *FINISH* could not appear in a similar context). For marking completion, Israeli SL makes use of a sign which is also glossed as *FINISH*. Meir points out that, given its frequent occurrence in past tense contexts, it might be tempting to analyze *ALREADY* as a temporal adverbial or tense

marker. She shows, however, that ALREADY can be used in present tense and future tense contexts, the latter being shown in (b).

- a. INDEX₁ ALREADY WRITE LETTER SISTER MY
'I have written a letter to my sister (but have not finished it).'
 - b. WEEK FOLLOWING THEY ALREADY MARRIED
'Next week they will already be married.'
- (Israeli SL, Meir 1999: 51, 47)

With respect to completive/perfective markers, it may be worth investigating whether they have negative counterparts (e.g. a dedicated negative completive marker NOT-YET). In Israeli SL, for instance, the negative counterpart of ALREADY is a sign glossed as ZERO (e.g. INDEX₁ EAT ZERO 'I haven't eaten yet'). These signs can be included in this section, but they will probably make another appearance in the sections dealing with irregular negation in the Morphology Part [Morphology – Section 3.5.2] and the Syntax Part [Syntax – Section 1.5.1.1.2].

Even though the markers described so far may be the most common ones, the grammar writer should be aware that additional, less common markers may exist in the sign language under investigation. Some of these, like the NGT free durative marker THROUGH are true aspectual elements (e.g. INDEX₁ WORK THROUGH 'I worked for a long time'), while others are adverbials [Lexicon – Section 3.5] that carry aspectual meaning, for example, DGS USUALLY for habitual aspect, NGT REPEAT for iterative aspect, and DGS NEARLY and FINALLY for certain conative interpretations. Even though these elements are not true aspectual markers, the grammar writer may wish to mention them in this section and provide examples that illustrate their use. If the sign language distinguishes free markers for various aspectual categories, then the grammar writer may wish to add internal structure to this section.

3.3.3 Modality markers

Modality as a grammatical category is defined as a semantic category that conveys the attitude of a speaker or signer towards the validity of the content of a proposition (remember that in the context of sign languages, the term “modality” also refers to the channel of signal transmission). In addition, the manner of an event or state that is described by a sentence is specified. Note that what we refer to as “modality markers” is commonly referred to as “modal verbs” in the literature, but as before, in sign languages, the verbal status of some of these elements may yet have to be determined. As for the internal structure of this section, we adopt the common distinction between deontic and epistemic modality (see also the discussions of modality in the Morphology Part [Morphology – Section 3.4] and in the Semantics Part [Semantics – Chapter 4]).

3.3.3.1 Deontic modality

Deontic modality covers modal meanings such as obligation/necessity (*must*), recommendation (*should*), ability (*can*), permission (*can*, *may*), and intention/volition (*want*), thus referring to the speaker's attitude towards the necessity or possibility of an act or event. Sign languages commonly express deontic modality by means of modal verbs/auxiliaries, adverbs, nouns, and adjectives. Lexical items that have been described for many sign languages include the following.

CAN ('can')	(ASL)
MUST ('must')	(DGS)
MAY ('may')	(DGS)

For obligation and possibility in ASL, Wilcox & Shaffer (2006) distinguish between participant-external and participant-internal uses of modality markers (e.g. obligation: *We had to line up* vs. *I have to have strawberries*; possibility: *We were allowed to sign* vs. *I can lift 100 pounds*). The grammar writer may wish to also address this distinction, as it may turn out that different markers are used for these meanings. Furthermore, Wilcox & Shaffer (2006: 230) address differences between weak and strong modals and note that “weak forms exhibit a soft, reduplicated movement, while the strong forms are produced with a single forceful stroke”. Moreover, in ASL, strong forms also tend to be accompanied by non-manual markers such as brow furrow and head nod (e.g. MUST vs. SHOULD, CAN vs. POSSIBLE).

Similar to what we described above for aspectual markers, irregular negative forms have often been described for modality markers (e.g. Shaffer (2002) for ASL; Pfau & Quer (2007) for DGS and LSC). The negative forms may be irregular in that they involve cliticization of a negative particle [Lexicon – Section 3.11.1] or a suppletive form. In DGS, for instance, the negative forms of the modals CAN, MUST, MAY, and NEED involve an alpha-shaped movement pattern that is added to the base form of the modal. Again, such specific negative forms should be mentioned in this section, but will be discussed further in the sections dealing with irregular negation in the Morphology [Morphology – Section 3.5.2] and the Syntax Part [Syntax – Section 1.5.1.1.2].

In addition, it has been argued for some sign languages that deontic modality may also be expressed by nouns (e.g. OBLIGATION) and adjectives (e.g. POSSIBLE). The use of such elements should also be described here.

Syntactically, modality markers may appear in different positions vis-à-vis the verb, but word order patterns should not be described in the present section (see the section on word order in the Syntax Part [Syntax – Section 2.3.1.3]). Taken together, in the present section, the grammar writer should provide a list of available modality markers and attempt to describe the, sometime subtle, meaning nuances (including the role of non-manual markers). In addition, it may be worthwhile to also address (or speculate about) possible grammaticalization processes, as modality markers often grammaticalize from lexical signs (or even co-speech gesture; Wilcox & Wilcox 1995). For ASL, for instance, it has been argued that the deontic modal CAN can be traced

back to the Old French Sign Language (Old LSF) sign **STRONG**, while the modal **MUST** is diachronically derived from the sign **OWE** (and both lexical signs are in turn based on French co-speech gestures). While the main aim of the grammar is, of course, to present the synchronic grammar of the sign language, including such diachronic information – if available – may certainly be of interest for the readership.

3.3.3.2 Epistemic modality

Epistemic modality is concerned with the speaker's attitude towards the actual proposition, judging the truth of the sentence and evaluating the probability of the event expressed in the utterance. Thus, epistemic modality addresses what is known and believed and indicates how much certainty or evidence a speaker has for his utterance. It is an estimation of the likelihood that a certain state of affairs or an event is true/false, has been true/false, or will be true/false in a certain possible situation.

What may complicate the investigation of epistemic modality, and the identification of dedicated markers, is the fact that modal markers may have both deontic and epistemic readings. This is true, for instance, for the English modal verb *must*, as illustrated by the following examples.

- a. John didn't show up for work. He **must** be sick
→ epistemic modality: assumption
(*Given that he's not present, and knowing him, I assume he is sick.*)
- b. John didn't show up for work. He **must** be fired.
→ deontic modality: necessity
(*Given that he's not present, it is a necessary consequence for him to be fired.*)

Wilcox & Shaffer (2006) observe that in ASL, certain deontic modals, like **SHOULD** and **POSSIBLE**, can also be used to express epistemic meaning. The following example illustrates this for **SHOULD**. Note that the modal is accompanied by non-manual markers: brow furrow and head nod. The authors also note that the articulation of **SHOULD** is weaker and reduplicated. As a result, the sign indicates the speaker's positive commitment to the truth of the proposition (they further observe that the sentential position is different, as these modals typically appear in clause-final position, but remember that word order is not addressed in this section).

top	bf+hn
LIBRARY HAVE DEAF LIFE	SHOULD

'The library should have Deaf Life / I'm sure the library has Deaf Life.'

(ASL, Wilcox & Shaffer 2006: 226)

Other signs that can express epistemic modality in ASL are **FEEL**, **SEEM**, and **OBLIVIOUS** (Wilcox & Wilcox 1995). Again, when used epistemically, these signs are commonly accompanied by brow furrow and/or head nod. Also, the sign **FUTURE** that we

discussed in the section on tense markers [Lexicon – Section 3.3.1] can take on an epistemic meaning when accompanied by these non-manual markers, as shown in the following example.

bf+hn

[...] RECEIVE MONEY FUTURE
 ‘[...] I’m sure I’ll rake in the money.’ (ASL, Wilcox & Shaffer 2006: 228)

Across sign languages, epistemic modality may also be expressed by sentence adverbials such as *MAYBE* or *PROBABLY*. The grammar writer is encouraged to investigate this possibility and, if it is attested, to include cross-reference to the section on sentence adverbials [Lexicon – Section 3.5.2]. In any case, the available data suggest that a thorough analysis of non-manual markers is particularly important in the context of epistemic modality. Remember that this concerns non-manual markers that accompany manual modality markers; non-manuals that can function as modality markers by themselves, and that attach to lexical verbs or spread over (parts of) the clause, will be addressed in the section on modality inflection [Morphology – Section 3.4].

Finally, grammaticalization scenarios may also be relevant for epistemic modality markers, as adjectives and nouns may take on this grammatical function; e.g. in ASL: noun *MIRROR* > modal *SEEM* and adjective *BRIGHT* > modal *OBVIOUS* (Wilcox & Wilcox 1995).

3.3.4 Agreement markers

In the section on verbs [Lexicon – Section 3.2], we pointed out that many sign languages have been found to distinguish plain (non-agreeing) and agreement verbs. Interestingly, some sign languages have developed a strategy to express agreement in the context of plain verbs, namely dedicated agreement markers. These markers are semantically empty or weak signs, which, similar to agreement verbs, can express the agreement relation by means of movement and orientation features (see the section on agreement inflection [Morphology – Section 3.1] for details). In this sense, they support the lexical verb, and they have therefore also been labeled “agreement auxiliaries”. Sign languages differ from each other with respect to whether or not they have such markers at their disposal, and if yes, how many of them. For instance, while ASL and BSL do not employ agreement markers, NGT has been found to have one and TSL three. If more than one marker exists in the sign language under investigation, then the grammar writer may wish to introduce subsections within this section.

In the literature, different types of agreement markers have been distinguished, based on inflectional patterns, properties of their arguments, semantic contribution, and their source (grammaticalization chain) (Steinbach & Pfau 2007; Sapountzaki 2012). For illustration, consider the DGS auxiliary *PAM* (person agreement marker;

Rathmann 2000). In example (a), PAM combines with the plain verb LIKE, but it may also be used with adjectival predicates like PROUD. PAM does not carry any meaning by itself; it is only introduced to express agreement with the subject and object. It does not usually combine with inanimate arguments (e.g. *I like the book*). As for inflectional patterns, it can in principle express all person combinations (e.g. *I like you*, *You like me*, *She likes you*, etc.), but there may be articulatory constraints on its use. For instance, if the subject is localized at the contralateral side of the signing space, and the object at the ipsilateral side, performing the movement (with fingertips oriented towards the object) is rather cumbersome. In this case, subject agreement may be dropped or the signer may choose to apply dominance reversal. Note further that in DGS, aspectual inflection [Morphology – Section 3.3] / aspectual inflection cannot be realized on PAM; thus, in this respect, PAM behaves differently from prototypical auxiliaries. Finally, it has been found that PAM occasionally combines with (uninflected or inflected) agreement verbs.

- a. MOTHER IX_{3a} NEIGHBOR NEW IX_{3b} LIKE_{3a} PAM_{3b}

‘(My) mother likes the new neighbor.’

(DGS, Steinbach & Pfau 2007: 322)

/da/

- b. EXAM₃ AUX-DA₁ NERVOUS

‘The exam makes me nervous.’

(LSC, Quer & Frigola 2006)

Now consider the LSC example in (b) which contains the agreement marker glossed as AUX-DA (based on the accompanying mouthing related to the Catalan verb *dar* ‘give’). This marker differs from DGS PAM in important respects: (i) AUX-DA does not only serve as a carrier of agreement but expresses the additional meaning of causative result; (ii) it only combines with psychological predicates; (iii) it has a strong tendency to occur with a first person argument, and it excludes agreement between third person subject and object; and (iv) it can take inanimate subject arguments, such as EXAM in (b).

Both the DGS and LSC agreement markers have been argued to have grammaticalized from lexical signs: PAM from the noun PERSON and AUX-DA (as the mouthing suggests) from the verb GIVE. However, the most common source for such markers are actually concatenated pronouns; such markers consist of a -hand that connects two points in space, pointing first towards the subject locus and then performing a smooth movement towards the object locus. Other sources that have been reported in the sign language literature are the verbs GO-TO (NGT), SEE (TSL), and MEET (TSL).

Taken together, once it has been established that the sign language has one or more agreement markers, the grammar writer should investigate the following questions per marker:

- Is the agreement marker void of semantics, or does it express an additional meaning besides agreement (e.g. causation)?
- Is use of the marker restricted to certain verbs? Can it also occur with adjectival predicates?

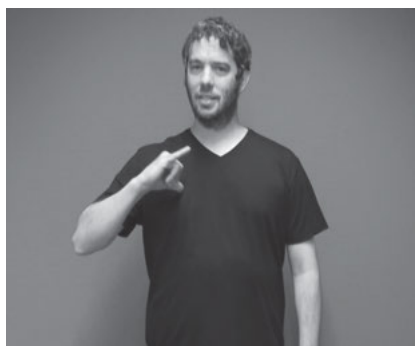
- Does the marker combine with plain verbs only, or can it also co-occur with agreement verbs? In the latter case, does the agreement verb then appear in an uninflected form, or can the auxiliary also combine with an inflected agreement verb?
- Can the marker express all person combinations?
- Can the marker inflect for aspect (e.g. by means of reduplication)?
- Can the marker combine with animate and inanimate arguments?
- If the source can be identified with some certainty, is the marker grammaticalized from a lexical sign (verb/noun) or from concatenated pronouns?

3.4 Adjectives

Adjectives describe parts of speech that usually qualify and specify a nominal element. They can combine with a noun within a noun phrase; in this case, they are called “attributive” (e.g. *a huge house*). In addition, adjectives can be used predicatively (e.g. *The house is huge*). The English examples illustrate that English makes use of a copula and that the form of the adjective is the same in attributive and predicative function. However, it may still be the case that a certain adjective can only be used in one of the functions (e.g. *former*, as in *the former president*, cannot be used predicatively). Usually, but not in all languages, adjectives constitute an open-class word category (see also the related section in the Syntax part [Syntax – Section 4.5.0.1]).

3.4.1 Attributive adjectives

The following examples are representatives of attributive adjectives.



INTERESTING (DGS)
(e.g. ‘interesting book’)

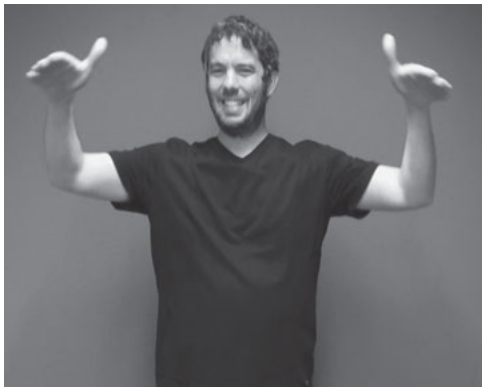


NICE (NGT)
(e.g. ‘nice movie’)



ANGRY (ÍTM)
(e.g. ‘angry person’)

Formally, in all three sign languages, the same sign may be used as an adjective or an adverbial [Lexicon – Section 3.5]. Most adjectives in sign languages exhibit a manual form, but some adjectival meanings may also be realized by non-manual markers that combine simultaneously with the noun they modify. Specific non-manuals such as *puffed cheeks* – glossed as ‘()’ in the below example – for instance, can be simultaneously layered on nominal signs like HOUSE to yield the meaning ‘a big house’ (note that in the accompanying image, the sign is also manually modified).



()
HOUSE (‘big house’)

(DGS)

As for manual attributive adjectives, it will suffice to provide some clear examples – for instance, some that are body-anchored and some that are articulated in neutral signing space. In addition, the grammar writer may wish to include in the discussion the so-called “Size-and-Shape-Specifiers” (SASS) that are often subsumed under the

morphological category classifier. Size-and-Shape-Specifiers [Morphology – Section 5.2] are signs that specify the shape of a referent by outlining (part of) its shape; e.g. TABLE SASS_{round} ‘a round table’. The translation suggests that in this example, the SASS fulfils an adjectival function.

The range of non-manual adjectives is probably rather limited, and is likely to include meanings like ‘big’, ‘small’, ‘fat’, and ‘thin’. Therefore, for these, the grammar writer may attempt to provide an exhaustive list. Note that the relevant non-manual markers may actually be part of the phonological specification of the corresponding manual adjectives (e.g. the sign BIG articulated with puffed cheeks) – if this is the case, it should be mentioned. In addition, it may be worth investigating whether non-manual adjectives combine freely with nouns. It may, for instance, turn out that they combine more freely with nouns that are signed in the signing space than with body-anchored nouns (e.g. ‘big house’ versus ‘big nose’ in DGS).

3.4.2 Predicative adjectives

It seems that, across sign languages, predicative adjectives are very similar, or even identical, in form to attributive adjectives. Consequently, given that the sign languages investigated to date do not offer clear evidence for the availability of a copula, a string like BOOK INTERESTING might either mean ‘interesting book’ or ‘the book is interesting’ (see also the discussion on methodological challenges [Syntax – Section 4.5.0.2] in the Syntax Part. If this is indeed the case, then the grammar writer may decide to do without the internal structure of this section.

However, in some sign languages, there may be syntactic or morphosyntactic cues to distinguish the two types of adjectives. For instance, if attributive adjectives generally precede the noun they modify, then word order may distinguish between attributive (e.g. INTERESTING BOOK) and predicative (e.g. BOOK INTERESTING) uses. But even in a language with post-nominal attributive adjectives, the syntax may provide clues, as is illustrated in the DGS pair below (noun phrases between brackets). Similarly, a localizing INDEX intervening between the noun and the adjective (e.g. GIRL INDEX₃ NICE) may suggest that the adjective is used predicatively (‘The girl is nice’).

- a. [BOOK INTERESTING] INDEX₁ READ
‘I read an interesting book.’
- b. [BOOK INDEX₁ READ] INTERESTING
‘The book I read is interesting.’ (DGS)

Moreover, it has been shown for a number of sign languages that some predicative adjectives behave similar to verbs in that they allow aspectual inflection (e.g. ‘repeatedly or characteristically x’). However, this will likely not apply to all adjectives, as modification of adjectives which refer to permanent characteristics is ruled out for semantic reasons: e.g. ‘I’m frequently ill’ versus *‘I’m frequently tall’ (Klima & Bellugi

1979). While the grammar writer may mention such clues here, s/he should keep in mind that the present section is about adjectives as parts of speech, not about word order or aspect [Morphology – Section 3.3]. Syntactic characteristics of non-verbal predication [Syntax – Section 2.1.4] and the order of the adjective with respect to the noun within the NP [Syntax – Section 4.5] are addressed in the Syntax Part.

3.5 Adverbials

Just like adjectives, adverbials (or adverbs) are modifying elements. While (attributive) adjectives modify nouns, adverbials modify sentences, verbs, adjectives, or other adverbials, as illustrated in the following examples (adverbials in boldface). Occasionally, one and the same adverbial may modify different types of constituents (e.g. *very quick* – *very quickly*).

- a. **Coincidentally**, he met his teacher on the plane. (sentence)
- b. I **strongly** recommend that you read this book. (verb/VP)
- c. This is a **rather** surprising development. (adjective)
- d. He edited the chapter **very** meticulously. (adverbial)

In the literature, different, rather fine-grained, classifications have been suggested for adverbials (see e.g. Parsons 1990). One possible classification considers the semantic contribution of adverbials and thus distinguishes between, for instance, manner (e.g. *quickly*), time (e.g. *recently*, *tomorrow*), frequency (e.g. *frequently*), and degree (e.g. *probably*, *maybe*) adverbials (for details, see the section on classes of adverbs [Syntax – Section 6.4] in the Syntax Part). In the following, however, we adopt a simplified two-fold classification which is based on the constituent that the adverbial modifies: the verb (or verb phrase) on the one hand and the sentence on the other hand. That is, we leave aside the types illustrated in (c) and (d) above. Obviously, the grammar writer is free to include these types in separate subsections and/or to structure this section differently, for instance, according to semantic contribution. Also, the discussion below will reveal that in sign languages, certain adverbial meanings can be realized manually and non-manually. Actually, the types we are leaving aside – i.e. adverbials modifying adjectives or other adverbials – appear to be commonly expressed by non-manual markers. Hence, this section might also be internally structured along these lines.

In some languages, adverbials are overtly marked as such by derivational affixes. In English, for instance, the suffix *-ly* systematically distinguishes between adjectives (*a happy girl*) and adverbials (*she sang happily*), while the same job is done in French by the suffix *-ment* (*une fille hereuse* – *elle chantait heusement*). But even in English, there are exceptions; consider e.g. *a fast car* versus *he drove fast* (**fastly*). It appears that in the sign languages investigated to date, no (systematic) morphological distinction is made between adjectives and adverbs, but obviously, this is something the grammar writer should scrutinize.

3.5.1 Verb-oriented adverbials

“Classical” verb-oriented adverbials (or VP-adverbials) modify the event expressed by the verb or verb phrase (see also the section on VP-adverbs [Syntax – Section 6.4.2] in the Syntax Part); they often occur within or adjacent to the verb phrase (e.g. *He painted the house quickly*; see the section on the positions of adverbials in the section on clause structure [Syntax – Section 2.3.1.6] in the Syntax Part). Besides adverbials that express a quality or manner, this group also contains adverbials that express a degree (e.g. *enough*, *rather*), frequency (e.g. *often*), or aspectual information (e.g. *frequently*, *usually*), as well as negative adverbials like *never*. Note that some of these are clearly adverbial, as they cannot combine with nouns (e.g. **a rather decision*). The examples below illustrate that elements with a similar function exist in NGT. Note, however, that in example (a), the element that functions as adverbial is not glossed as QUICKLY, as its phonological form does not distinguish it from the corresponding adjective.

- a. INDEX₃ BOOK QUICK READ
 ‘He read the book quickly.’
 b. CHILD INDEX₃ ENOUGH SLEEP
 ‘The child has slept enough.’ (NGT)

Note that aspectual adverbial meanings are commonly realized by manual modulations of the verb sign, most importantly movement modification and reduplication (see the section on aspectual inflection [Morphology – Section 3.3] in the Morphology Part). Similar to what we described above for adjectives, some adverbial meanings can be realized by means of non-manual markers that are articulated simultaneously with the verb. It appears that, for the most part, these markers are expressed on the mouth, their labels commonly related to the characteristic mouth configuration. For ASL, for instance, Liddell (1980) reports the non-manual adverbials glossed as ‘mm’ and ‘th’. In the former, the lips are kept together and pushed out a little bit; it expresses that a particular action has been done in a relaxed manner, as is true for the fishing in example (a). The latter is characterized by a slight head tilt and protrusion of the tongue through the lips; it contributes the meaning of lack of control and inattention, as illustrated in example (b).

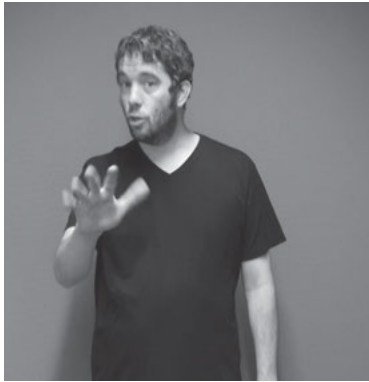
- a. mm
 MAN FISH_[continuous]
 ‘The man was fishing with relaxation and enjoyment.’
 b. th
 INDEX₁ GO-ACROSS. WRONG, ACCIDENT
 ‘I crossed (the street) carelessly. Whoops! There was an accident.’
 (ASL, Liddell 1980: 42, 50)

As with non-manual adjectives, the set of non-manual adverbials is expected to be limited. The grammar writer should therefore strive to provide an exhaustive list

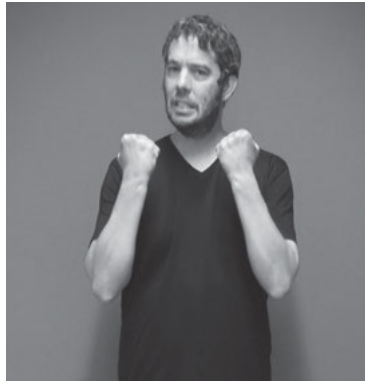
complemented by a description of the formational properties of the markers (see also the section on non-manual adverbs [Syntax – Section 6.3] in the Syntax Part.

3.5.2 Sentence adverbials

Sentence adverbials (or sentential adverbials), as the name suggests, affect the whole sentence and modify the proposition with respect to mood or the speaker's attitude. In English, these adverbials have a tendency to appear sentence-initially (e.g. *fortunately*, *perhaps*, *finally*). The following two examples from DGS are representative of manual sentential adverbials in a sign language.



PROBABLY



SURELY

(DGS)

Some of the sentence adverbials are subsumed under the label “modal adverbials”, as they contribute deontic or epistemic modal meaning, for instance, by conveying the attitude of the speaker/signer towards the content of the sentence (e.g. *probably*, which expresses epistemic modality).

Just like verb-oriented adverbials, certain sentence-adverbial meanings can be expressed non-manually. As for their scope, the corresponding non-manual features usually spread across the entire clause (in contrast, to the non-manual verb-oriented adverbials which are usually confined to the verb). Also, it is common for specific adverbial meanings to be realized by both manual and non-manual elements, as in the following DGS example (the non-manual marker that we simply gloss as ‘probably’ consists of a specific lip configuration, possibly in combination with a slight to-and-fro movement of the head).

probably

PROBABLY POSS₁ GRANDPA IX₃ LATE ARRIVE

‘My grandpa will probably arrive late.’

(DGS)

Here, we also subsume temporal adverbials under sentence adverbials (see the section on temporal adverbs [Syntax – Section 6.4.2.1] in the Syntax Part. This category includes adverbials like *yesterday*, *soon*, and *later*. It should be pointed out, however, that according to some authors, temporal adverbials cut across the two categories (Parsons 1990). If the grammar writer adopts the internal structure suggested here, it is up to her/him to decide where to treat these adverbials. If the section on adverbials is structured according to the semantic contribution of the adverbials (see the introduction to this section), then there will be a separate subsection on temporal adverbials. See also the section on sentential adverbs [Syntax – Section 6.4.1] in the Syntax Part.

3.6 Determiners

By “determiner”, we refer to a class of elements whose function is to provide information on referentiality (i.e. the relation between the noun and what the noun refers to). In grammar handbooks, determiners are often labeled “articles” (English *the/a*), and demonstratives (e.g. English *this/that*) are commonly subsumed under determiners. Traditionally, determiners are categorized into two groups: definite [Lexicon – Section 3.6.1] and indefinite [Lexicon – Section 3.6.2] determiners (see also the section on determiners [Syntax – Section 4.1] in the Syntax Part).

On the one hand, definite determiners (in English, prototypically *the*, but also demonstratives like *this*) are used when the speaker presupposes that the interlocutor can identify the referent(s) of the nominal expression. Definite determiners can be used for three different purposes (Lyons 1999): (i) to refer back to something or someone that has been previously mentioned in the discourse (e.g. ‘The cat was feeling hungry’, with the cat already introduced in the discourse); (ii) to refer to something or someone that is easily identifiable in the extra-linguistic context (e.g. ‘Could you pass me the pen?’, with the pen visible to the interlocutors); (iii) to refer to a referent that is unique in its genre (e.g. ‘the Earth’, or ‘the driver’ when talking about a bus trip).

On the other hand, indefinite determiners (prototypically *a/an*) are used when the speaker presupposes that the interlocutor cannot identify the referent(s) of the nominal expression. Indefinite determiners are used to introduce new information, specifically new referents, into the discourse (e.g. ‘Yesterday I saw a cat’, where the cat is a first-mention entity). See the section on definiteness [Semantics – Section 2.1.2] in the Semantics Part for more on this distinction.

In sign language linguistics, definite determiners are frequently identified as pointing [Lexicon – Section 1.2.2] signs, also referred to as “indexes” (e.g. Zimmer & Patschke (1990) for ASL). What the grammar writer should pay particular attention to is the linguistic function associated to indexes. As a matter of fact, in many sign languages, pointing signs are polyfunctional elements that can be used for various grammatical functions, not only as determiners, but also as demonstratives, personal

pronouns, and locatives. Therefore, there may be some confounders making it hard to pinpoint real determiners. Still, it might be the case that indexes functioning as determiners can be distinguished from the others by characteristics such as movement (single, repeated, tense), hand orientation (palm oriented down or sideways), or even eye gaze (Pfau 2011). The following list of properties may help the grammar writer in pinpointing indexes functioning as determiners (see Neidle & Nash 2012).

(i) *Isolation*

Within the noun phrase [Syntax – Chapter 4], determiners cannot be used in isolation. In other words, if the determiner does not co-occur with a noun, the output is ungrammatical, as shown for English and Italian in (a). Also, a determiner cannot appear in isolation as an answer to a question, as is illustrated in (b) (note that the Italian examples are translations of the English ones). The examples reveal that this test only works for “basic” determiners (like English *the*, Italian *il*), but not for demonstratives, as demonstratives can also function as demonstrative pronouns [Lexicon – Section 3.7.1].

- | | | |
|----|---|-----------|
| a. | I saw *the / this / him | (English) |
| | Ho visto *il / questo / lui | (Italian) |
| b. | Q: What did you see? A: *the / this / him | (English) |
| | Q: Che cosa hai visto? A: *il / questo / lui | (Italian) |

In some sign languages, there might be a slight phonological difference (e.g. hand orientation) between a pointing sign functioning as determiner and a pointing sign functioning as a demonstrative [Lexicon – Section 3.7.1] or personal pronoun [Lexicon – Section 3.7.2]. This test could be used to distinguish them: in isolation contexts, determiners are not acceptable, whereas demonstratives and pronouns are acceptable.

(ii) *Plural forms*

Determiners, demonstratives, and personal pronouns can include number information. In sign languages, to indicate plurality, they may be articulated as pointing signs accompanied by a circular or an arc-like movement in the neutral space. Conversely, locatives [Lexicon – Section 3.7.1] do not show this pattern. The test on plural forms may be used to distinguish determiners from locatives.

Noun phrases in ASL can include two co-occurring pointing signs, one in prenominal position and the other in postnominal position. The following examples show that the prenominal index can be articulated with an arc-like movement (a), but the postnominal one cannot (b).

- | | | |
|----|---|------------------------------|
| a. | IX _{PL-ARC} MAN IX KNOW PRESIDENT | |
| | ‘Those men over there know the president’ | (ASL, MacLaughlin 1997: 117) |
| b. | *IX MAN IX _{PL-ARC} KNOW PRESIDENT | |

These examples provide evidence for claiming that the prenominal pointing sign is a determiner while the postnominal pointing sign is a locative (MacLaughlin 1997).

(iii) Articulatory restrictions

Determiners are articulated by moving the pointing sign in neutral space along a fixed path [Phonology – Section 1.3.1] length. This particular type of movement cannot undergo path variation (a). Conversely, pointing signs functioning as locatives can be directed to a point closer to the signer or towards a point farther away in space in order to iconically show proximity and distance (b).

- a. * IX_[+DISTAL] MAN IX_i KNOW PRESIDENT
- b. IX_i MAN IX_[+DISTAL] KNOW PRESIDENT
 ‘The/that man over there knows the president’

(ASL, Neidle & Nash 2012: 270)

3.6.1 Definite determiners

Definite determiners are typically realized by means of a pointing sign directed to the spatial location associated with the referent(s). A sequence like HOUSE INDEX₃ could thus be interpreted as ‘the house’. While the -handshape is most commonly used for pointing, other handshapes are also possible, such as an open hand and a handshape with thumb extended (Neidle & Nash 2012). Fenlon, Schembri, Rentelis & Cormier (2013) show that in BSL, the category of determiners is particularly subject to handshape variation. The grammar writer should consider the immediate phonological environment in order to detect possible assimilation [Phonology – Section 3.1.1] patterns.

We already pointed out that demonstratives are a type of definite determiner, and that they may be phonologically very similar, if not identical, to other definite determiners. In fact, depending on the sign language, the sequence HOUSE INDEX₃ could also mean ‘that house’ (or even ‘house there’; see the section on locative and demonstrative pronouns [Lexicon – Section 3.7.1]). We encourage the grammar writer to look for phonological features – be they manual or non-manual – that distinguish different uses of pointing signs within the noun phrase.

The non-manual markers that may accompany definite determiners are: eye gaze, head tilt, raised eyebrows, and slightly raised chin. Eye gaze and head tilt are usually directed toward the location to which the index points. See also the corresponding section [Syntax – 4.1.1.3] and the section on articles expressed by non-manual marking only [Syntax – Section 4.1.1.4] in the Syntax Part.

3.6.2 Indefinite determiners

Indefinite determiners usually differ from their definite counterparts [Lexicon – Section 3.6.1] in that the pointing sign is directed upward and moves toward a broader

area, rather than a specific point in space. In ASL and in LIS, indefinite determiners require a tremoring motion (MacLaughlin 1997; Bertone 2009). Things are different in HKSL, where the indefinite determiner and the cardinal ONE are articulated similarly. Some older signers avoid homophony by producing the cardinal ONE with a slight rotation of the forearm.

The non-manual markers that may accompany indefinite determiners are: furrowed eyebrows, wrinkled nose, lowered mouth corners, and raised shoulders. In sign languages, these non-manuals are generally used to denote uncertainty. See also the corresponding section [Syntax – 4.1.1.3] and the section on articles expressed by non-manual marking only [Syntax – Section 4.1.1.4] in the Syntax Part.

Indefinite nominal expressions can fall into two categories, namely specific or non-specific (see specificity [Pragmatics – Section 1.4] for more information). The former is associated with a particular referent that is known by the sender, but not by the addressee. The latter is associated with an unspecified referent that is unknown to both the sender and the addressee. The distinction between specific indefinites and non-specific indefinites may be conveyed in different ways. In ASL, specific indefinites are marked by eye gaze directed toward the spatial location of the referent (a), whereas non-specific indefinites involve roving eyes toward an upward location (b).

- eg_i
- a. SOMETHING/ONE WOMAN_i ARRIVE
 ‘Some/a (specific) woman arrives.’ (ASL, Bahan 1996: 274)
- wandering eyes
- b. SOMETHING/ONE WOMAN_i ARRIVE
 ‘Some/a woman arrives.’ (ASL, Bahan 1996: 273)

In LSC, the distinction between specific and non-specific is conveyed by spatial location. Specificity is marked in the lower part of the frontal plane (a), whereas non-specificity is marked in the upper part (b).

- eg:contralateral
- a. IX₁ CAT WANT BUY
 ‘I want to buy a cat (specific).’ (LSC, Barberà 2012: 259)
- eg:ipsi-up
- b. CAT IX_{3PL:ipsi-up} IX₁ WANT BUY
 ‘I want to buy a cat (non-specific).’ (LSC, Barberà 2012: 261)

Taken together, the grammar writer should investigate whether indefinite determiners (if attested at all) as a group differ formationally from definite determiners, and moreover, whether in the former group, specificity may be marked by non-manual features.

3.7 Pronouns

Sign languages use sign space to refer to present and non-present referents by pointing towards the actual referent or towards abstract locations that have been established earlier in the discourse. Pointing may be done manually (with the index finger, the thumb, the entire hand, or possibly some other hand configuration), non-manually (with eye gaze, head nod, or body orientation), or some combination of these. Further discussion on pointing [Lexicon – Section 1.2.2] is given in the section on the non-core lexicon. The grammar writer should be aware of the fact that, in addition to pronominal reference, pointing may serve a variety of functions in a given sign language. Furthermore, other elements have been identified as possible candidates for pronouns. One group is classifiers [Morphology – Chapter 5], which stand in for and allow anaphoric reference to a discourse entity, as a proform does (Zwitserlood & van Gijn 2006). Another strategy is related to role shift and the use of the body (orientation) to refer to and distinguish between different referents (Kegl 2003). Finally, some researchers have claimed that sign languages make frequent use of null pronouns (Lillo-Martin 1986).

Pronominal signs can be represented in various ways in the glosses (INDEX, IND, IX, POINT, PT, ...). For simplification, it is possible to use pronouns from the spoken language, such as YOU, I, SHE, WE, ME, HIS, etc. Another strategy would be to give pronouns with different grammatical functions different labels in the gloss (e.g. INDEX(dem) for demonstrative pronoun, INDEX(pers.sg) for personal pronoun singular, INDEX(pers.pl), etc.), and a further strategy would be to describe the handshake of the sign in the gloss. The strategy followed here, and throughout the Blueprint, is to gloss a pointing sign as INDEX (or IX) and provide information on movement, grammatical categories, etc. in subscripts, such as INDEX₁ ('I'), INDEX_{3pl} ('they'), and so on. If the sign has a different handshake from the pointing sign, a different gloss is chosen, such as POSS for possessive pronouns. This is just a suggestion, but the grammar writer should adopt a consistent glossing practice that best suits the goals of the grammar being written. Whatever conventions the grammar writer adopts, it is essential to make these explicit and to explain exactly what the glossing reflects (and to point out any assumptions or limitations that the glossing system may impose).

3.7.1 Locative and demonstrative pronouns

Across sign languages, locative pronouns are expressed by pointing [Lexicon – Section 1.2.2] signs, and in some notational conventions, small letters are used as subscripts, such as INDEX_a and INDEX_b. Locative pronouns generally point to a locus – be it a previously established spatial point or an actual (absolute) location. They refer

to the place that is associated with that locus and mean ‘there’ in that case. Locative pronouns meaning ‘here’ usually point to a spatial point close to the signer’s body.

- a. GIRL LIVE INDEX_a
‘The girl lives there.’
- b. COME INDEX/HERE
‘Come here (to me).’ (ÍTM)

Temporal and locative indexicals expressed by pointing often have lexical glosses, such as TODAY and HERE. Sometimes, the gloss THERE is used, as well.

Demonstratives have already been addressed in the section on determiners [Lexicon – Section 3.6.1]. However, demonstratives can also be used as substitutes for noun phrases (e.g. ‘I want this (one), and not that (one)’), and in this case, they are referred to as “demonstrative pronouns”. In sign languages, demonstrative pronouns are very often phonologically identical to personal pronouns [Lexicon – Section 3.7.2]. However, this need not always be the case; yet, the phonological differences may be rather subtle. In at least some sign languages, the demonstrative pronoun is reduplicated and signed faster and in a tenser way (Pfau 2011). Also, ASL has been reported to have a distinct demonstrative pronoun THAT (Cormier 2012: 238).

3.7.2 Personal pronouns

A personal pronoun stands for a noun or a noun phrase (see also the discussion of pronouns [Syntax – Section 2.1.2.2] in the Syntax Part). It can be deictic, referring to a person or thing that is present in the situation, or anaphoric referring to something already established in the discourse. In most sign languages, personal pronouns take the form of pointing [Lexicon – Section 1.2.2] signs, but they can also be expressed non-manually, by head tilt and/or eye gaze. The pointing signs are directed towards present referents, like the signer or the addressee, or to locations (loci) that have previously been established in the discourse for absent referents. The following are examples of personal pronouns in ÍTM:



INDEX₁ (‘I/me’)



INDEX_{2/3} (‘you/him/her/it’)

(ÍTM)



3_3.7.2_3_ÍTM_INDEX-1PL

INDEX_{1PL} ('we')

(ÍTM)

First person pronouns are directed inwards, in most sign languages towards the signer's chest (with which they may make contact). There are exceptions to this, such as in NS, where a first person pronoun can be directed towards the signer's nose (McBurney 2002: 342).

Second and third person pronouns are directed outwards from the signer, at chest-level, toward the location of referents that are present (deictically) or, when referents are absent, toward a point (or locus) already established for that referent in the signing space (anaphorically). As with the first person pronouns, there are exceptions to this: for example, in Kata Kolok, a shared sign language used in a village on Bali, there is a preference for the use of pointing to the fingers of the non-dominant hand (similar to what happens in some buoy [Lexicon – Section 1.2.3] structures), rather than spatial locations (Marsaja 2008).

Personal pronouns can express different grammatical categories such as person [Lexicon – Section 3.7.2.1], number [Lexicon – Section 3.7.2.2], clusivity [Lexicon – Section 3.7.2.3], case [Lexicon – Section 3.7.2.4], gender [Lexicon – Section 3.7.2.5], honorific status [Lexicon – Section 3.7.2.6], and logophoricity [Lexicon – Section 3.7.2.7].

3.7.2.1 Person

The issue of whether or not sign languages encode the person feature has been heavily debated in the literature. The various claims vary from a three-person distinction similar to what is found (almost) universally in spoken languages, to a reduced two-person system, and even that sign languages do not encode person at all and show no person distinctions. Moreover, some accounts suggests that pronominal pointing involves gestural use of space.

The prevalent view in the field is that there is a two-way distinction between first and non-first person. Various researchers have defended this restricted first versus non-first person distinction (Meier (1990) for ASL; Engberg-Pedersen (1993) for DTS). The main arguments for the difference between first/non-first relate to the special status and form of the first person pronouns: (i) the form of first person pronouns is constant and stable, as well as being different compared to all other pronouns; (ii) the first person form behaves differently to other pronouns under role shift; and (iii) first person plural pronouns are not compositional in form whereas other pronouns are.

Alternatively, a three-way person distinction is upheld by some researchers who claim that the difference between second and third person is marked by accompanying non-manual features, especially eye gaze (Alibašić Ciciliani & Wilbur (2006) for HZJ; Berenz (2002) for Libras). On this view, the second person pronoun points to the addressee and eye gaze is also directed toward the addressee; in contrast, the

third person pronoun points to a locus but the eye gaze is typically directed at the addressee, that is, in a direction that does not align with that of the pointing of the hand. This non-manual marking may extend to other articulators: the head and the body orientation of the signer may also have the same direction as the eye gaze.

Finally, other authors have suggested that some sign languages may not encode person distinctions at all, and that this distinction does not form part of the grammar (related to the fact that the referent marking system is so highly indexical) (Lillo-Martin & Klima (1990) for ASL; Costello (2015) for LSE). Costello (2015) shows that the arguments for distinguishing between first and non-first person pronouns (in ASL and DTS) do not hold for LSE. Thus, although the debate is often couched in terms of the person system of sign languages in general, it is fundamental to look at the properties of each specific language.

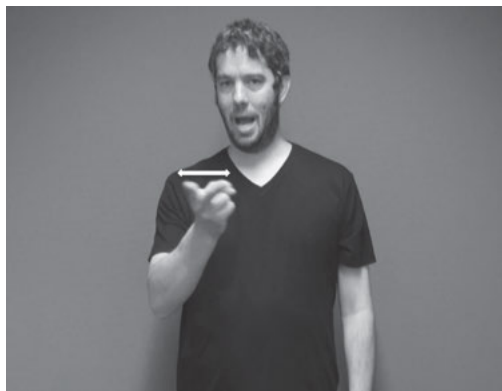
The distinction between different person values is based on differences in phonological form (and also referential behavior) of the pronouns for different referents. The grammar writer is encouraged to look carefully at the pronominal forms in the sign language under study to find distinctive properties that could justify a two- or three-way categorization.

Note finally that some scholars assume that the loci that are pointed at by pronouns do not encode grammatical (morpho-syntactic) features at all, but rather are motivated by gestural use of space – similar to what we find in co-speech gesture (Liddell 2003; Cormier, Schembri & Woll 2013). Under this view, pronominal pointing fuses linguistic and gestural properties. It is up to the grammar writer to decide which theoretical view s/he wants to adhere to. Obviously, the choice may have an impact on the header of this section, which will probably not be “Person” if the gestural perspective is followed. The same is true if the grammar writer adopts an account according to which the person feature does not play a role in the grammar of sign languages, but rather another, modality-specific feature. The choice of theoretical perspective notwithstanding, the other headers within this section can probably be maintained, as they refer to features (realized by movement and/or handshape changes) that are independent of the linguistic vs. gestural treatment of pronominal pointing signs.

3.7.2.2 Number

Sign languages generally distinguish singular, dual, and plural forms for pronouns. In the singular form of a pronoun, the index finger usually points directly at the locus associated with the referent. The dual form functions very much in the same way as the singular form, by pointing to the referents’ loci in space, but with a different handshape. The number of the extended fingers may correspond to the number of the referents. A common handshape for the dual form is a V-handshape (✋) or a K-handshape (✋), in both of which the index finger and the middle finger are extended. Another known handshape is an L-handshape, ✋, where the index finger and the

thumb are extended. The pronoun oscillates back and forth between the loci of its referents, as shown in the two examples from DGS and ÍTM below.



TWO-OF-US ('two of us', DGS)



3_3.7.2.2_2_ÍTM_TWO-OF-US

TWO-OF-US ('two of us', ÍTM)

In some sign languages, the extension of the fingers can be used to indicate up to nine referents (Steinbach 2012: 121; see also the discussion on numeral incorporation of cardinal numbers [Lexicon – Section 3.10.1.1] and numeral incorporation [Syntax – Section 4.3.4] in the nominal domain). McBurney (2002), however, points out that, at least in ASL, the dual is different from the other (incorporated) forms in that (i) the handshape (✎) is different from that of the cardinal numeral two, and (ii) use of the dual form is obligatory while the other forms are optional. These differences are something that the grammar writer may wish to address, as they imply different grammatical status of the dual (fully grammaticalized) vs. the other forms (incorporated).

Plural forms of pronouns involve a modification of the pointing signs. There are normally two different plural forms: a collective form, where the pronoun is realized with an arc-shaped or sweeping movement across the locations associated with the referents; and a distributive form where the pointing is successively directed towards multiple locations lying along an arc (compare the discussion of number markers on verbs [Morphology – Section 3.1.2] in the Morphology Part).



3_3.7.2.2_3_ÍTM_INDEX-ARC-SWEEPING

INDEX_{ARC-SWEEPING}
(‘you/they’, collective form)



3_3.7.2.2_4_ÍTM_INDEX-SHORT-POINTING-IN-AN-ARC

INDEX_{SHORT-POINTING-IN-AN-ARC}
(‘you/they’, distributive form)

(ÍTM)

3.7.2.3 Clusivity

In many sign languages, pronouns can be either inclusive or exclusive. When a first person plural pronoun, meaning ‘we’, is inclusive, the addressee is included in the

group of referents; when it is exclusive, the addressee is not one of the referents. In BSL and ASL (Cormier 2012: 233), the inclusive forms are produced at the center of the signer's chest by making a circular or a sweeping movement at that location. By changing the location of the signs, the forms can be made exclusive. The exclusive forms are produced slightly to one side (making the same type of movement as before), as illustrated below for ITM. The exclusive pronouns may exclude any referent salient for the discourse, not just the addressee.

 3_3.7.2.3_1_ÍTM_INDEX-1PL- LOCATION-AT-CHEST INDEX _{1PL-LOCATION-AT-CHEST} (‘we all’, inclusive)	 3_3.7.2.3_2_ÍTM_INDEX-1PL- LOCATION-AT-LEFT-SIDE INDEX _{1PL-LOCATION-AT-LEFT-SIDE} (‘we all’, exclusive)	(ÍTM)
		
TWO-OF-US _{LOCATION-AT-CHEST} (‘we two’, inclusive)	TWO-OF-US _{LOCATION-AT-LEFT-SIDE} (‘we two’, exclusive)	(ÍTM)

3.7.2.4 Case

It is uncommon for sign language pronouns to mark case (with the exception of the possessive [Lexicon – Section 3.7.3]). Alibašić Ciciliani & Wilbur (2006), for instance, investigated the possibility that handshapes or mouthings [Phonology – Section 1.5.2] / mouthings distinguish different cases in HZJ, but found no clear evidence for such marking. An exception seems to be Israeli SL, which has been claimed to have a case-marked pronoun grammaticalized from the noun PERSON (Meir 2003). Otherwise, there is little evidence of explicit case marking in sign languages, and grammatical relations between arguments tend to be marked either on the verb or by word order.

3.7.2.5 Gender

It is uncommon for sign language pronouns to be marked for gender. However, gender marking has been described for NS and TSL (Fischer 1996; Smith 1990), both for pronouns and classifier predicates. In these sign languages, gender can be marked by a change in handshape (♂ for male, ♀ for female) and is limited to human referents. However, the marking is not obligatory, and therefore may not be a case of grammatical gender marking but rather an optional morphological process that marks

semantic gender (McBurney 2002). If the grammar writer finds evidence of different pronominal forms for different genders, it is important to ascertain to what extent this marking is semantically driven (by biological gender of animate referents, for example) and, more importantly, how obligatory such marking is.

It is worth noting that some accounts that treat classifiers [Morphology – Section 5] as pronominal forms consider the different handshake classes as a type of gender marking, along the lines of classes in the rich multiple gender systems displayed by Bantu languages (Zwitserslood 2003).

3.7.2.6 Honorific pronouns

In many sign languages, pronouns have an honorific form. This form is marked by directing the pronoun to a spatially higher location (higher than in an unmarked form of the pronoun), indicating some kind of honorific status of the referent (based on the metaphor POWER IS UP). Other alternations for respect forms include a change in handshake (using the -hand rather than the normal extended index finger) or introducing the non-dominant hand to “shield” the dominant hand (e.g. Berenz (2002) for Libras). The use of one form or the other may depend upon the physical presence of the referent in the communicative setting. As with other grammatical categories that may be marked by personal pronouns, the grammar writer should determine how obligatory this marking is.

3.7.2.7 Logophoric pronouns

Some languages make use of a specific set of pronouns in the context of indirect discourse to mark co-referentiality with the individual whose point of view is being described. Thus, in the case of reported speech, a language like Ewe (spoken in West Africa) has a specific logophoric pronoun, *yè*, to refer to the main clause subject (a), and a normal third-person pronoun, *e*, to refer to any other individual (b). (In the examples, the change in subscript denotes that the referents are distinct.)

- a. Kofi be *yè*-dzo
‘Kofi_i said that he_i left.’
- b. Kofi be *e*-dzo
‘Kofi_i said that he_j left.’

(Ewe, Clements 1975: 142)

Sign languages do not appear to have a specific set of logophoric pronouns, but parallels have been drawn between the use of role shift [Syntax – Section 3.3.3], which has many properties of indirect discourse, and logophoric pronouns. Lillo-Martin (1995) suggests that the first person pronoun (that is, the signer pointing at herself) is a logophoric pronoun in the context of role shift. Ultimately, the classification of such pronouns will depend on the treatment that the grammar writer gives to role shift (see Lillo-Martin (2012) for further discussion).

3.7.3 Possessive pronouns

Possessive pronouns may be differentiated into two main types. The first type is a proform for the possessor (e.g. English *my*, *her*, *your*) which still requires a noun for the thing possessed ('my ruler', 'her pen'). These forms are not, strictly speaking, pronouns since they do not replace a noun, and act as adjectives or determiners (depending on the language). Consequently, they are often referred to as adjectival possessive pronouns. In contrast, a substantival possessive pronoun is a proform for both the possessor and the thing possessed (e.g. English *mine*, *hers*, *yours*). Such pronouns may act as an argument ('Mine is bent', 'I prefer yours') or as a predicate ('This pen is hers'). The two types are sometimes referred to as dependent/independent or weak/strong possessive pronouns. For more on adjectival possessive pronouns see attributive possessive pronouns [Syntax – Section 4.2.1.1] in the Syntax Part.

Some sign languages do not have a specific form for possessive pronouns and make use of personal pronouns [Lexicon – Section 3.7.2] (that is, a -hand) to express possession. However, specific forms for possessive pronouns have been described for various sign languages. Most commonly, these are directional elements that differ from personal pronouns in handshape (and orientation): thus in many sign languages (e.g. ASL, DGS, ÍTM), the handshape in possessive pronouns is B, , and the palm of the hand is directed toward the (possessor) referent. (Other handshapes have been attested for other sign languages.)



POSS₁ ('mine')



POSS_{2/3} ('yours/his/hers')

(ÍTM)



3_3.7.3_3_ÍTM_POSS-1PL

(ÍTM)

POSS_{1PL} ('ours')

Furthermore, some sign languages may distinguish between adjectival and substantival possessive pronouns: in BSL, for example, the substantival form is marked with the -handshape. If different handshapes appear for possessive pronouns, it is important for the grammar writer to look at the context and distribution of the forms in order to establish the function of each. It is possible that the sign language in question does not uphold the adjectival/substantival distinction and may differentiate, for example, between predicative and other uses. Equally, other factors may condition

the form of the possessive pronoun: in BSL, for instance, the index handshape can only be used for inalienable possession (Cormier 2012: 233).

3.7.4 Reflexive and reciprocal pronouns

A reflexive pronoun is used when the object in a sentence (direct or indirect) refers to the same person or thing as the subject of the sentence (e.g. *I scratch myself*). A reflexive pronoun exists in various sign languages (e.g. ASL, BSL, NGT, RSL), often glossed as SELF. The form of the sign differs from language to language; in some cases, the pronoun can be modified spatially, in the same way that personal pronouns [Lexicon – Section 3.7.2] can (i.e. directed toward a locus associated with a referent), while in other cases, the sign is fixed in form. Frequently, the reflexive pronoun is optional, and in the case of RSL, a personal pronoun may be used for reflexive meaning, as illustrated by the following two examples.

BOY INDEX₃ PAINT SELF

BOY INDEX₃ PAINT INDEX₃

‘The boy paints himself.’

(RSL, Kimmelman 2009: 22)

These pronouns often function as emphatic pronouns in the same way that reflexive pronouns in English can, as shown in the translation of the following ASL example.

SISTER SELF TELEPHONE OFFICE

‘My sister will call the office herself.’

(ASL)

A reciprocal relation expresses a meaning similar to a reflexive relation since co-referentiality is involved. However, reciprocity requires a plural referent so that each individual is at the same time agent and undergoer of the action (e.g. *They visit each other*). Generally, in sign languages, reciprocal relations are expressed by reciprocal markers [Morphology – Section 3.1.3] on the verb. As such, it is common for sign languages not to have a specific reciprocal pronoun. Nevertheless, such reciprocal pronouns have been described for some sign languages, such as ASL and BSL, and the forms tend to share formational features with the reflexive pronoun.

JOHN MARY EACH-OTHER WISH MERRY CHRISTMAS

‘John and Mary wished each other merry Christmas.’

(BSL)

3.7.5 Interrogative pronouns

Interrogative pronouns are proforms that are used in wh-questions [Syntax – Section 1.2.3]. They can be found in all sign languages studied to date, but their numbers vary

between sign languages (Zeshan 2004). BSL has at least six interrogative pronouns, ÍTM seems to have 13, but IPSL only has a single interrogative sign. Thus, there is a continuum from simple wh-word paradigms to highly complex paradigms. Examples of interrogative ÍTM pronouns are the following:



WHO



WHAT

(ÍTM)

Actually, IPSL is an interesting case, as it has been argued that the interrogative sign (glossed as G-WH for ‘general wh-sign’) is not an interrogative pronoun but rather a question particle [Lexicon – Section 3.11.2]; this sign may combine with certain nouns to yield more specific meanings (e.g. FACE^G-WH ‘who’, PLACE^G-WH ‘where’; cf. Aboh, Pfau & Zeshan 2005). If the sign language under investigation patterns with IPSL in this respect, then the grammar writer would have to decide where to discuss the interrogative sign – here or in the section on question particles. If the status of the sign is uncertain, then it should be mentioned in both sections.

Sign languages with larger interrogative pronoun inventories may also feature examples of compound interrogative pronouns, such as those from ÍTM and DGS illustrated below.



3_3.7.5_3_ÍTM_HOW-CHARACTERISTIC

HOW^CHARACTERISTIC
(‘what kind’, ÍTM)



3_3.7.5_4_DGS_WHO-PAM

WHO^PAM
(‘whom’, DGS)

In many sign languages, the same signs are used for interrogatives as for indefinites. Examples of this are the BSL signs for SOMEONE and WHO, which are identical in form.

3.7.6 Relative pronouns

Sign languages use a variety of strategies to mark relative clauses [Syntax – Section 3.4], including word order, manual, and non-manual markers. One option is to use a

relative pronoun, and pronouns with such a function have been described for various sign languages. ASL, for example, uses a sign glossed as **THAT** as a relative pronoun (or “relative conjunction”; Liddell 1980). DGS has two relative pronouns, one for human referents (e.g. *the man who ...*) and another for non-human referents (e.g. *the book which ...*); both can be localized in space (Pfau & Steinbach 2005). As occurs with spoken languages, the same form may be used as a relative pronoun and a demonstrative pronoun [Lexicon – Section 3.7.1]. In contrast, other sign languages do not appear to have a sign that functions as a relative pronoun, and instead use other strategies to indicate the relative clause.

3.7.7 Indefinite pronouns

Across spoken languages, indefinite pronouns often have forms similar to the nouns meaning ‘person’ or ‘thing’, or to the numeral ‘one’, and this is also the case for sign languages. There may be different indefinite pronouns for human and non-human referents, like the English *someone* and *something*. Indeed, in many sign languages, the human indefinite pronoun may be similar in form to the numeral **ONE**, often with an additional movement or a marked location in the signing space.

In some sign languages, the indefinite pronoun **SOMEONE** bears a relation to the interrogative pronoun [Lexicon – Section 3.7.5] **WHO**. In BSL, the indefinite and interrogative pronouns are identical in form; in LSC, **WHO** forms part of the indefinite pronoun.

WHO^**SOME**

WHO^**INDEX**_{3pl}

‘someone’

(LSC)

Compound signs are also attested for other sign languages: in DGS and NGT, the indefinite pronoun consists of **ONE**^**PERSON**.

3.8 Adpositions

3.8.1 Manual adpositions

Adpositions generally mark relational information between two elements, and such relations are usually expressed in sign languages by the use of sign space, especially if they are spatial in nature (e.g. *on*, *in*, *next to*). In some sign languages, there are, however, at least some manual signs for certain adpositions that can be glossed as such, as the following examples from LSE and DGS show.



UNTIL ('until')



WITHOUT ('without')

(LSE)



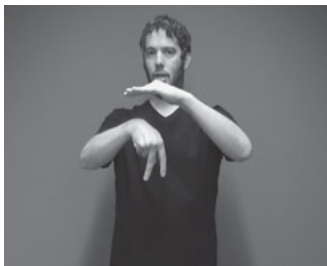
OVER ('over')

(DGS)

Note that the use of a sign language adposition may be very different and possibly more restricted than that of the nearest equivalent in the spoken language. For the given sign language, the grammar writer should check whether these elements are prepositions or postpositions.

3.8.2 Adpositions and spatial relations

In sign languages, relational information that is usually expressed by adpositions in spoken languages can be conveyed via various means involving the sign space – in particular when it comes to spatial relations. In general, spatial adpositions may be incorporated in spatial verbs and classifier constructions, that is, the movement of the verb is modified to indicate the spatial locations of and relations between objects. This strategy is illustrated by the two DGS examples below.

STAND_{under} ('stand under')

3_3.8.2_2_DGS_JUMP-OVER

JUMP_{over} ('jump over')

(DGS)

3.9 Conjunctions

Conjunctions are parts of speech connecting two or more elements of speech such as words, phrases, and clauses. Languages use a variety of mechanisms to connect constituents, and here we look at three types of conjunctions: coordinating [Lexicon – Section 3.9.1], subordinating [Lexicon – Section 3.9.2], and correlative [Lexicon – Section 3.9.3]. For more information on how clauses are conjoined, see coordination and subordination [Syntax – Section 3] in the Syntax Part (for overview, see also Tang & Lau (2012) and Pfau & Steinbach (2016); for BSL connectives, see Waters & Sutton-Spence (2005)).

3.9.1 Coordinating conjunctions

Coordinating conjunctions such as *and*, *or*, *but*, and *so* paratactically join lexical elements or clauses. In sign languages, there may be manual signs for some conjunctions, but this does not necessarily need to be the case. Established sign languages very often realize coordination via prosodic marking such as rhythmic pauses, a change in body posture, and/or other non-manual expressions. Many sign languages do not show overt manual elements for ‘and’, for instance, as can be seen in the following examples (see Davidson (2013) for ASL). In contrast, use of a conjunction BUT appears to be more common across sign languages.

EMMA APPLE BANANA GRAPE LOVE

‘Emma loves apples, bananas, and grapes.’ (DGS)

EMMA FRIEDA LOVE ÖRN SVERRIR LOVE

‘Emma loves Frieda and Örn loves Sverrir.’ (ÍTM)

It is important to describe not only single words, but also test complex sentences to gain insight in the realization of coordinate structures in naturally signed discourse. There may be manual items from manually coded speech systems that are usually not used in native signing, for instance (e.g. the sign PLUS used for ‘and’). For more information on coordination at the clausal level, see coordination of clauses [Syntax – Section 3.1].

3.9.2 Subordinating conjunctions

Subordinating conjunctions usually introduce embedded clauses or conjoin main and embedded clauses. Typical examples in English are *because*, *since*, *though*, *where*, *that*, *if*, etc. Similarly to coordinating conjunctions [Lexicon – Section 3.9.1], sign languages may have certain manual elements that are used as subordinators,

but frequently realize embedding by means of non-manual markers and prosodic structure. Based on the sign languages investigated to date – and these are only a few – the pattern that emerges is that (i) sign languages do not employ conjunctions that introduce complement clauses (complementizers like English *that*); (ii) sign languages generally have some conjunctions that introduce different types of adverbial clauses (comparable to English *if*, *because*, *so that*); and (iii) some types of adverbial subordinate clauses, such as e.g. temporal clauses and conditional clauses, can be marked by a non-manual only (even though a manual conjunction may optionally be used in addition). The two images below are examples of manual subordinate conjunctions in LSC and DGS, respectively, while the video illustrates non-manual marking of a conditional clause in DGS.



IF ('if', LSC)



WHEN ('when/if', DGS)

3_3.9.2_3_DGS_TODAY SUN RISE, IX-1PL SWIM

raised eyebrows head nod
TODAY SUN SHINE IX_{1PL} SWIM

'If the sun shines today, we go swimming.'

(DGS)

Like in spoken languages, subordination conjunctions are commonly grammaticalized elements. Compare the grammaticalization of 'be+cause' in English with the sign BECAUSE in DGS, which grammaticalized from the noun REASON illustrated in the video below. When used as a conjunction, the movement of the sign is commonly reduced.

3_3.9.2_4_DGS_BECAUSE2

REASON

(DGS)

For more information on clausal subordination, see subordination [Syntax – Section 3.2].

3.9.3 Correlative conjunctions

Correlative conjunctions consist of at least two items that assign a correlative relation to two equal grammatical units. Thus, these pairs establish parallel constructions that conjoin similar words or phrases. Examples in English are *(n)either ... (n)or, not only ... but, whether ... or, the more ... the more*, etc. In sign languages, there are certain manual equivalents to those pairs, which, however, do not necessarily include all spoken language items (see example (a) below, where BUT is not overtly realized).

- a. NOT ONLY BEER, ALSO SALAD
'not only beer, but also salad'
- b. IX₁ CINEMA GO THEATER GO PALM-UP_{RH} PALM-UP_{LH}
'I either go to the cinema or to the theater.' (DGS)

In some sign languages, the sign PALM-UP (which is related to a common co-speech gesture; see the discussion in the section on borrowing of gestures [Lexicon – Section 2.3]) may be used in correlative constructions such as *either ... or*, using one hand on the ipsilateral side of the sign space and the other hand on the contrasting side of the sign space, as illustrated in example (b). Syntactically, the correlative construction follows the two elements that are connected. More important, however, is the fact that non-manual markers such as body leans very often indicate the specific relation between the elements. In case of *either... or*, for instance, a contrasting sideward body lean on each unit is sufficient to express the correlative conjunction.

3.10 Numerals and quantifiers

Numerals and quantifiers identify the number or amount of the set denoted by the noun that they modify. Strictly speaking, a numeral is a type of quantifier in that it specifies the exact number, but we adopt the widespread practice of distinguishing between numerals on the one hand, and (non-numeric) quantifiers that give a relative or indefinite indication of quantity on the other.

3.10.1 Numerals

Generally speaking, the term “numeral” used in the nominal domain indicates an item specifying the number of entities referred to. Numerals are either words such as *one, ten, twenty-two* that are used to count and denominate numbers (cardinal numbers) or number words that relate to a specific ordering (ordinal numbers), such as *first, second*, etc.

At a closer inspection, numerals can be classified according to three main categories: cardinal, ordinal, and distributive numerals. Cardinals are used to count entities and answer the question ‘How many?’ (e.g. ‘three suitcases’). In contrast, ordinals are used to rank entities according to a certain order and provide an answer to the question ‘Which in order?’ (e.g. ‘the third suitcase’). Finally, distributive numerals specify how a certain quantity is distributed over some entities and can be used to answer the question ‘How many each?’. The distributive use is illustrated by the following Georgian example.

sam-sami čanta
three-DIST.ABS suitcase.ABS
‘three suitcases each’

(Georgian, Gil 1988: 1044)

Usually, ordinals and distributives are derived from cardinals since they combine a numerical quantity with another type of information (i.e. order and distribution). Not all languages have a distinct word class for ordinals and distributives (Dryer & Haspelmath 2013).

3.10.1.1 Cardinal numerals

For cardinal numerals in sign languages, the two manual articulators offer a direct option of counting from 1 to 10 by the use of fingers, making 10 the common base for most sign languages (decimal system). Thus, sign languages obviously draw on gestural means in their counting systems. However, sign languages are known to have quite different number systems even for counting from 1 to 10, and these systems may at times be quite different from how hearing subjects count using their hands. In DGS, signers count by separately extending one finger after the other on the dominant hand, starting with the thumb, and maintaining five extended fingers on the non-dominant hand when counting from 6-10 with the dominant hand again (two-handed number system). In ASL, however, the numbers from 1 to 10 are all expressed by one hand alone (one-handed number system). The number system of a sign language may involve handshapes that are rare, or even unattested in other lexical signs (note that the handshapes of numerals 1 to 5 or 1 to 10, depending on the type of counting system, will also be listed in the section on number signs [Phonology – Section 1.1.3] in the Phonology Part).

Strategies for forming higher numbers should also be explained. For numerals from 11 to 19, as well as for decimals 20, 30, etc., sign languages commonly combine number handshapes with specific movement patterns (e.g. circular movement, side-to-side movement); in this case, the movement simultaneously represents the numeric base 10. Just as in some spoken languages, the numbers 11 and 12 may show exceptional patterns. Higher numbers may be compositionally formed, as in DGS, or produced by juxtaposition of digits (digital strategy), as in ASL, as shown in the following examples.

FIVE-TWENTY (‘twenty-five’) (DGS)
ONE-ZERO-FIVE (‘one hundred and five’) (ASL)

As can be seen from the DGS example above, inversion may also be attested in certain sign languages (possibly due to influence from the spoken language, as is true for DGS and NGT). Some sign languages have been found to employ typologically unusual patterns in their numeral system, like a base-20 system (vigesimal system), subtractive numerals, and the like (Zeshan et al. 2013). Hence, the grammar writer should describe the numeral system, the simultaneous and sequential combinatorial possibilities, and point out typologically common and unusual patterns. Signs for higher numbers like 100, 1000, and one million, if attested, should also be included. It should also be noted that the articulation of numerals is known to be subject to dialectal variation (e.g. McKee, McKee & Major (2011) for NZSL). The position of numerals [Syntax – Section 4.3.1] vis-à-vis the noun will be described in the Syntax Part.

In the domain of numerals, sign languages have the unique opportunity to incorporate specific numerals into pronouns and temporal expressions. Examples of the former are 2-OF-US ('the two of us'), 3-OF-YOU ('the three of you'), etc. Numerals may also be incorporated into temporal expressions such as YEAR in DGS, which is usually signed with a -handshake, but in the case of 'one-year', 'two-years', etc., the number sign is combined with the specific movement of the sign YEAR (see left video below). The same process is available for signs like WEEK (see right video) or HOUR, for instance.



3_3.10.1.1_2_DGS_1-YEAR, 2-YEAR,
3-YEAR



3_3.10.1.1_1_DGS_1-WEEK, 2 WEEK

1-YEAR, 2-YEAR, 3-YEAR...

('one year', 'two years', 'three years', etc.)

1-WEEK, 2-WEEK, 3-WEEK

('one week', 'two weeks', 'three week', etc.)

Due to the physical properties of the hands, the upper limit for numeral incorporation is usually 10. Even though these cases are attested (more frequently for temporal expressions than for pronouns), sign languages more commonly apply numeral incorporation up to 5 and not beyond (also see the section on numeral incorporation [Syntax – Section 4.3.4] in the Syntax Part).

3.10.1.2 Ordinal numerals

Ordinal numerals are often derived from cardinals [Lexicon – Section 3.10.1.1]. The handshake of the cardinal numeral is usually maintained, while changes in orientation and movement may occur. In many sign languages, ordinal (ordering) numbers have a specific extra movement, indicating the difference between, for example, ONE and FIRST.

Ordinals differ from cardinals in that they do not constitute an open set of elements. Generally, they do not extend beyond TENTH. For example, in FinSL, ordinals from 10 onwards make use of a strategy based on written language that consists of combining the cardinal with the sign DOT.

TWENTY^DOT
'20th'

(FinSL, Takkinen, Jantunen & Seilola 2016: 152)

Very often list buoys [Lexicon – Section 1.2.3] are used to keep track of ordinal numbering in signed discourse.

3.10.1.3 Distributive numerals

In sign languages, the distributive reading is usually expressed through reduplication of a cardinal numeral [Lexicon – Section 3.10.1.1] in the signing space. Each reduplication is produced at a distinct location, similar to the distributive plural for number marking on pronouns [Lexicon – Section 3.7.2.2]. That is, the sign languages investigated to date do not employ dedicated lexical signs for distributive numerals but rather make use of morpho-syntactic spatial strategies to express the distributive meaning. For illustration, we provide two examples from RSL.

_____ topic
MAN INDEX BUY BEER ONE_{DISTR}
'Each man bought a beer.'

INDEX_{DISTR} EACH ONE_{DISTR} SUITCASE TWO_{DISTR}
'Each of them had two suitcases.'

(RSL, Kimmelman 2015: 13,22)

3.10.2 Quantifiers

A quantifier is an expression that identifies the number or amount of the set denoted by the noun it modifies. The following are some of the quantifiers attested in English: *no*, *some*, *both*, *few*, *a few*, *several*, *enough*, *many*, *most*, *each*, *every*, *all*. Sign languages also have quantifiers, as illustrated by the following LSC example.

_____ br
STUDENT MAJORITY EXAM PASS
'Most students passed the exam.'

(LSC, Quer 2012: 188)

Quantifiers are typically classified together with determiners [Lexicon – Section 3.6] / determiners or nominal modifiers, but quantification may also be achieved with other elements such as adverbials [Lexicon – Section 3.5] or auxiliaries. In the present section, the grammar writer should provide a list of attested quantifiers (including negative quantifiers like *no*), possibly supplemented by examples illustrating their use. See quantifiers [Syntax – Section 4.4] in the Syntax Part for more on quantifiers and quantification [Semantics – Chapter 10] for information about the different ways in which quantification may be expressed.

3.11 Particles

Particles are functional words that do not inflect and typically encode grammatical categories or discourse functions. This section looks at negative particles [Lexicon – Section 3.11.1], question particles [Lexicon – Section 3.11.2], and discourse particles [Lexicon – Section 3.11.3]. However, the grammar writer may decide to add further particle types, such as focus particles (such as English *even*, *also*, and *only*) or modal particles, if these are attested in the sign language under investigation (see Herrmann (2013) for discussion of these types of particles).

3.11.1 Negative particles

Many languages use a particle meaning ‘not’ to negate an affirmative sentence, such as *no* in Spanish or *niet* in Dutch.

Cayetana toca la trompeta. / Cayetana **no** toca la trompeta. (Spanish)

‘Cayetana plays the trumpet.’ / ‘Cayetana doesn’t play the trumpet.’

Ik zie Hans. / Ik zie Hans **niet**. (Dutch)

‘I see Hans.’ / ‘I don’t see Hans.’

All sign languages described to date have at their disposal one or more negative particles for expressing clause negation. Across sign languages, use of a basic ‘not’ particle appears to be the most common strategy, next to non-manual negation (which, in some sign languages, may negate a clause by itself). For illustration, see the LSE example below, which involves a clause-final particle (accompanied by a headshake).

	<u>hs</u>
JUANITA MEAT EAT	NOT

‘Juanita doesn’t eat meat.’ (LSE)

The interaction between the manual particle and the non-manual marking (normally a headshake, but this may vary cross-culturally; see non-manual markers of negation [Morphology – Section 3.5.1.2]) is different from language to language. In this section, the grammar writer should only list and describe the attested manual particles. The relative importance given to the manual and the non-manual component, the position of the particle, and the possible spreading of the non-manual marking with respect to the manual signs will be addressed in the section on negatives [Syntax – Section 1.5] in the Syntax Part.

Some sign languages have negative particles which carry additional semantics, e.g. emphatic negatives (‘absolutely not’), contrastive negatives, or negative imperatives (‘don’t!’) (Zeshan 2006). Such specialized particles should be included here. Other negative elements which combine negation with another inflectional category

(e.g. aspect, modality) will be treated elsewhere in the grammar, namely in the respective subsections within lexical expressions of inflectional categories [Lexicon – Section 3.3]. Also, they may make another appearance in the section on negative inflection [Morphology – Section 3.5]. Still, the grammar writer may decide to mention such negative elements here and refer the reader to the relevant parts of the grammar.

3.11.2 Question particles

Question particles normally mark polar interrogatives [Syntax – Section 1.2.1] but may also occur with content interrogatives [Syntax – Section 1.2.3]. They usually appear in a sentence-initial or -final position and may be grammaticalized from a more complex syntactic structure or a pragmatic interrogative marker such as ‘I ask you’. The *est-ce que* form in French (literally ‘is it that ...’) may be regarded as a question particle:

Est-ce que tu veux le voir?

‘Do you want to see it?’

(French)

Since polar interrogatives are most frequently marked by non-manual markers, question particles in sign languages tend to be optional (in contrast to spoken languages, where question particles, if they are used, tend to be obligatory). An example of a question particle is found in Japanese Sign Language:

y/n
IX₃ TRUE Q-PART

‘Is that true?’ / ‘Really?’

(NS, adapted from Morgan 2006: 99)

Genuine interrogative particles tend to occur in the same prosodic unit as the rest of the interrogative. If there is an intervening prosodic break, the interrogative marker may actually function as a question tag or a request for confirmation, such as *innit?* in a sentence like ‘You’re from Harrogate, innit?’ (attested in some non-standard dialects of British English). An example of a question tag is found in the following LSE polar interrogative:

y/n
IX₃ LIVE BILBAO YES-NO

‘Do you live in Bilbao?’ / ‘You live in Bilbao, don’t you?’

(LSE)

Question particles also need to be distinguished from pragmatic means of asking a question by means of a verb like ‘ask’ or a strategy based on written language such as tracing the shape of a question mark. However, both of these strategies may grammaticalize into a question particle, and the same is true for the ‘palm-up’ gesture (which has already been mentioned in the context of borrowing of gestures [Lexicon – Section 2.3.2] and correlative conjunctions [Lexicon – Section 3.9.3] and will make another appearance in the next section on discourse particles

[Lexicon – Section 3.11.3]). The grammar writer should look for evidence of semantic bleaching, inflectional rigidity, and syntactic distribution (especially word order) to justify treating an element as a grammaticalized question particle. See interrogative particles [Syntax – Section 1.2.1.3] in the polar interrogatives section and interrogative particles [Syntax – Section 1.2.3.9] in the content interrogatives section of the Syntax Part for more information.

3.11.3 Discourse particles

Certain particles do not add to the meaning of a sentence but affect its communicative intent. These particles serve a pragmatic function and help to organize and connect the different elements of the discourse, or to express the signer's attitude. For example, in English, the adverbial *well* can be used as a discourse particle to heighten the speaker's attitude, and *like* can be used to diminish the effect of exaggerated language, as the following examples show:

Well, what a cheek!
She was, like, totally wasted.

A common element across sign languages that is often translated as 'well' or 'so' is the palm-up gesture (holding one or both hands open with the palms facing upwards), and this seems to operate as a discourse marker in many sign languages. (As mentioned previously, the palm-up gesture appears to serve various functions (McKee & Wallingford 2011; Van Loon, Pfau & Steinbach 2014); therefore, the grammar writer should be careful about classifying all instances of palm-up as a single element.) Such particles that express the speaker's attitude are often treated as interjections [Lexicon – Section 3.12] and other examples are given in that section.

The structuring and organization of discourse [Pragmatics – Chapter 5] in sign languages is often achieved by the use of space [Pragmatics – Chapter 10], but there are also manual elements that qualify as discourse particles. Some particles serve to structure the discourse produced by the signer, whereas others control the discourse between interlocutors. Of the first kind, various sign languages, such as NGT or LSE, mark a change in discourse topic [Pragmatics – Section 4.2] by means of a sign that involves moving both hands (ⓘ-handshape) from the contralateral to ipsilateral side as if pushing something out of the signing space. The second type includes the use of finger-wiggles to maintain a turn in a conversation [Pragmatics – Section 10.2], similar to the use of vocalic sounds in spoken languages such as *ah* or *er* to indicate that the turn-holder is thinking of what to say and does not want to be interrupted.

The grammar writer should bear in mind that these discourse particles may be derived from items that normally have a lexical meaning but – possibly due to metaphorical extension – may be used for purely pragmatic purposes. Identifying such

discourse particles and distinguishing them from lexical counterparts can give a clearer picture of what forms an integral part of a clause and what does not.

3.12 Interjections

Interjections are exclamative words or phrases that express the speaker's emotions, sentiments or judgments, such as English *well*, *oh my god*, or *yeah*. Furthermore, English *uh* and *ahem* or German *äh* and *ach* are pause fillers and are usually also called interjections. The linguistic definition of interjections from spoken languages often includes the notion that interjections express exclamative sounds, which poses some challenges to define the respective expressions in sign languages. In general, an open mouth may be seen as an equivalent to a sound-related interjection indicating surprise such as *oh* or *ah*. In addition, there are sign language-specific interjections such as *wow* in DGS, where, in addition to a specific mouth pattern, the fist-hand-shape quickly moves from side to side in sign space.

wow ('wow')	(DGS/ÍTM)
AH-sign (multiple translations depending on the facial expressions)	(Irish SL)

The so-called “finger-wiggling” to hold on to a turn in a conversation is a relatively frequent gesture, attested in many sign languages, that can be considered an interjection. However, such elements may also be treated as discourse particles [Lexicon – Section 3.11.3]. Interjections can also be similar in form to gestures used with an interactive function by non-signers.

Since interjections express emotions or sentiments, and because such information is frequently transmitted through non-manual (especially facial) markers, interjections in sign language often involve a rich mixture of manual and non-manual material. These signs have been referred to as “multi-channel signs” and are characterized by the fact that they are difficult to translate simply into spoken language, with glosses such as *THAT'S-A-BIT-EMBARRASSING* or *I'M-ALL-FOR-IT*. However, this relative untranslatability is typical of interjections, and does not give these signs any particularly unique status with respect to their spoken language counterparts.

Elicitation materials

Rather than attempt to elicit different parts of speech individually, in a word by word fashion, it is recommended that the grammar writer tries to analyze these different grammatical categories in the context of sentences or discourse. For this reason, the grammar writer is directed to the relevant sections of the Syntax [Syntax Part] Part for recommendations of elicitation materials and techniques.

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