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13. The noun phrase

1. Introduction
2. Characteristics of this modality with consequence for noun phrase structure
3. What's in a noun phrase? A closer look inside
4. Number: expression of plurality
5. DP-internal word order
6. Conclusion
7. Literature

Abstract

This chapter considers, within the context of what is attested crosslinguistically, the structure of the noun phrase (NP) in American Sign Language (ASL). This includes discussion of the component parts of the noun phrase and the linear order in which they occur. The focus here is on certain consequences for the organization and properties of ASL noun phrases that follow from the possibilities afforded by the visual-gestural modality;

these are therefore also typical, in many cases, of noun phrases in other sign languages, as well. In particular, the use of space for expression of information about reference, person, and number is described, as is the use of the non-manual channel for conveying linguistic information. Because of the organizational differences attributable to modality, there are not always direct equivalents of distinctions that are relevant in spoken vs. sign languages, and controversies about the comparative analysis of certain constructions are also discussed.

1. Introduction

We use the term ‘noun phrase’ (or ‘NP’) to refer to the unit that contains a noun and its modifiers, although, following Abney (1987) and much subsequent literature, these phrases would be analyzed as a projection of the determiner node, and therefore, more precisely, as determiner phrases (DPs). The NP in American Sign Language (ASL) has the same basic elements and hierarchical structure as in other languages. There are, however, several aspects of NP structure in sign languages that take advantage of possibilities afforded by the visual-gestural modality. Some relevant modality-specific characteristics are discussed in section 2. Section 3 then examines more closely the components of NPs in ASL, restricting attention to singular NPs. Expression of number is considered in section 4. Section 5 then examines the basic word order of these elements within the NP.

2. Characteristics of this modality with consequence for noun phrase structure

2.1. Use of space to express person and reference in ASL and other sign languages

Sign languages generally associate referents with locations in the signing space. For referents physically present, their actual locations are used; first- and second-persons are associated spatially with the signer and addressee, respectively. Referential locations are established in the signing space for non-present third-person referents. See Neidle and Lee (2006) for review of ASL person distinctions, a subject of some controversy; on use of referential space for present vs. non-present referents, see e.g. Lidell (2003).

The use of space provides a richer system for referential distinctions than the person distinctions typical of spoken languages. Although referential NPs crosslinguistically are generally assumed in the syntactic literature to contain abstract referential features, sign languages are unique in enabling overt morphological expression of referential distinctions through association of distinct third-person referents with specific locations in the signing space (Kegl 1976 [2003]).

Moreover, in contradistinction to spoken languages, sign languages include referential features among the *phi*- (or *agreement*) features, i.e. those features that can be

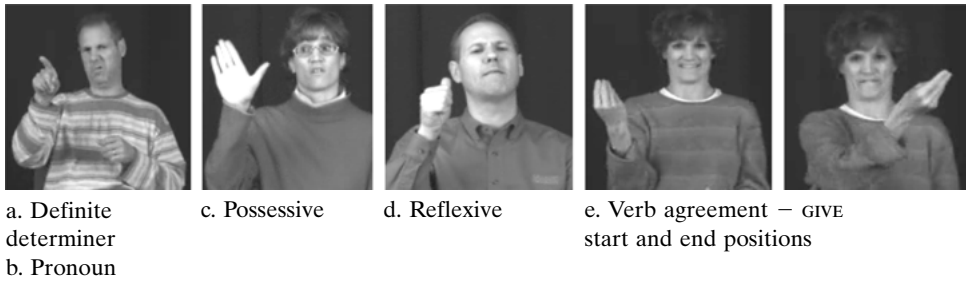


Fig. 13.1: Use of spatial locations associated with person and reference in ASL

expressed morphologically on multiple elements in an agreement relationship, either within the NP (a phenomenon frequently described as ‘concord’) or between an NP and other sentential elements that agree syntactically with the NP. For this reason, we refer to these referentially significant locations as *phi*-locations (following Neidle and Lee 2006), although not all spatial locations – and not even all types of deictic gestures – that are used in signing take on this kind of referential significance. Space is used for many distinct functions in sign languages.

ASL determiners, pronominals, possessives, and reflexives/intensifiers are produced by pointing to these *phi*-locations (for pronouns, see chapter 11). As seen in Figure 13.1, different hand shapes distinguish these functions (a phenomenon also found in other sign languages, cf. Bos 1989; Sutton-Spence/Woll 1999; Tang/Sze 2002; Engberg-Pedersen 2003; Alibašić Ciciliani/Wilbur 2006; Johnston/Schembri 2007; Hatzopoulou 2008; Hendriks 2008). These referential locations are also accessed to mark agreement with NPs by other sentential elements. Although not all classes of verbs can occur with overt agreement morphology (see chapter 7 on verb agreement), agreeing verbs such as GIVE, shown in Figure 13.1e, have start and end points that correspond to the *phi*-locations of the subject and object, respectively. We return to these elements in section 3.

2.2. NP-internal agreement relations in sign and spoken languages

The elements enumerated in section 2.1 and illustrated in Figure 13.1 for ASL correspond to those that have been observed crosslinguistically to enter into agreement relations by virtue of the potential for morphological expression of matching *phi*-features. However, there has been some contention that sign languages do not exhibit ‘agreement’. In particular, Liddell (e.g., 2000a,b) has pointed to modality differences – such as the fact that the locations in the signing space used referentially do not constitute a finite set of discrete elements, and that such referential features do not enter into agreement in spoken languages – to suggest that agreement is not involved here.

However, even spoken languages differ in terms of the specific features that partake in agreement/concord relations. In some but not all languages, gender agreement or concord may be found; there may be agreement or concord with person and/or number. Person features themselves are also indexicals, as pointed out by Heim (2008, 37):

“they denote functions defined with reference to an utterance context that determines participant roles such as speaker and addressee.” What is unusual in sign languages – attributable to the richness afforded by the use of space for these purposes – is the greater potential for expression of referential distinctions. (Number features, more limited in this respect in ASL, are considered in section 4.) However, the matching of features among syntactic elements is of essentially the same nature as in other agreement systems. Thus, we analyze the uses of *phi*-locations as reflexes of agreement.

2.3. Non-manual expression of syntactic information

There are also cases in which these same *phi*-locations that manifest agreement in manual signing may be accessed non-manually. The use of facial expressions and head gestures to convey essential syntactic information, such as negation and question status, is well documented (for ASL, see, e.g., Baker/Padden 1978; Liddell 1980; Baker-Shenk 1983, and Neidle 2000 for discussion and other references). Such expressions play a critical role in many aspects of the grammar of sign languages, but especially with respect to conveying certain types of syntactic information (see also Sandler and Lillo-Martin (2006), who consider these to be prosodic in nature, cf. also chapter 4 on prosody). Generally these non-manual syntactic markings occur in parallel with manual signing, frequently extending over the logical scope of the syntactic node (functional head) that contains the features expressed non-manually (Neidle et al. 2000).

There are cases where *phi*-features can also be expressed non-manually, most often through head tilt or eye gaze pointing toward the relevant *phi*-locations. Lip-pointing toward *phi*-locations is also used in some sign languages (Obando/Elena 2000 discussed Nicaraguan Sign Language). Neidle et al. (2000), Bahan (1996), and MacLaughlin (1997) described cases in which head tilt/eye gaze can display agreement within both the clause (with subject/object) and the NP (with the possessor/main noun), displaying interesting parallels. Thompson et al. (2006) presented a statistical analysis of the frequency of eye gaze in some data collected with an eye tracker that purports to disconfirm this proposal; however, they seriously misrepresent the analysis and its predictions.

Further investigation (Neidle/Lee 2006) revealed that the manifestation of agreement through head tilt/eye gaze (Bahan 1996; MacLaughlin 1997; Neidle et al. 2000) is not semantically neutral, but rather is associated with focus. Thus it would appear that what is involved in this previously identified construction is a focus marker instantiated by non-manual expression of the subject and object agreement features.

3. What's in a noun phrase? A closer look inside

In this section, elements that make up the NP will be discussed. The analysis of some of these elements has been a subject of controversy in the literature, and in some rather surprising cases, such as the expressions of plurality, comprehensive descriptions have been lacking. For discussion of word order within NP, we crucially restrict attention to elements occurring *within the NP* and *in the canonical word order*. ASL exhibits some flexibility with respect to word order: there are many constructions in which

deviations from the base word order occur, as is frequently recoverable from prosodic cues. Those marked orders are excluded from consideration here, as this chapter seeks to describe the basic underlying word order within NP.

3.1. Determiners – definite vs. indefinite – and adverbials

Pointing to a location in the signing space can be associated with a range of different functions, including several discussed here as well as the expression of adverbials of location. We gloss this as *ix* since it generally involves the index finger. (In some very specific situations, the thumb can be used instead. A different hand shape, an open hand, can also be used for honorifics.) Subscripts are used to indicate person (first, second, or third) and potentially a unique *phi*-location, so that, for example, *ix*_{3i} and *poss*_{3i} (the possessive marker shown in Figure 13.1c) would be understood to involve the same *phi*-location; the use of the same subscript for both marks coreference. This multiplicity of uses of pointing has, in some cases, confounded the analysis of pointing gestures, since if different uses are conflated, then generalizations about specific functions are obscured. Bahan et al. (1995) and MacLaughlin (1997) have argued that the prenominal *ix* is associated with definiteness and functions as a determiner, whereas the postnominal *ix* is adverbial and does not display a definiteness restriction.

Previous accounts had generally treated the occurrences of prenominal and postnominal indexes as a unified phenomenon. There has been disagreement about whether sign languages have determiners at all, although it has been suggested that these indexes might be definite determiners (Wilbur 1979) or that they are some kind of determiner but lacking any correlation with definiteness (Zimmer/Patschke 1990). However, analysis focusing on prenominal indexes reveals not only a correlation with definiteness, but also a contrast between definite and indefinite determiners.

An NP in ASL can contain a prenominal or postnominal *ix*, or both. In the construction in (1), the DP includes both a prenominal determiner and a postnominal adverbial, not unlike the French or Norwegian constructions shown in (2) and (3).

- | | | |
|-----|---|-------------|
| (1) | [<i>ix</i> _{3i} MAN <i>ix</i> _{loci}] _{DP} ARRIVE
'The/that man there is arriving.' | [ASL] |
| (2) | [cet homme-là]
'that man there' | [French] |
| (3) | [den mannen der]
'that man there' | [Norwegian] |

The ASL prenominal and postnominal *ix*, although frequently very similar in form, are nonetheless distinguishable, in terms of:

A. Articulatory restrictions. The determiner, occurring prenominally, has a fixed path length, whereas the postnominal index can be modified iconically to depict aspects of the location (e.g., distance, with longer distances potentially involving longer path length). This is consistent with other grammatical function words having a frozen form relative to related adverbials. (Compare the fixed path length of the ASL modal mark-

ing future, which has a relatively frozen path length, with the range of articulations allowed for the related temporal adverbial meaning ‘in the future’; for the latter, distance in the future can be expressed iconically through longer or shorter path movements, as discussed in, e.g., Neidle et al. (2000, 78). Thus there is a contrast in acceptability between (4) and (5).

- (4) [IX_{3i} MAN IX_{loc} “over there”]_{DP} KNOW PRESIDENT [ASL]
 ‘The/that man over there knows the president.’
- (5) * [IX_{loc} “over there” MAN IX_{3i}]_{DP} KNOW PRESIDENT

B. Potential for distinct plural form. Only the prenominal IX can be inflected for plural in the way to be discussed in section 4. This is shown by the following examples (from MacLaughlin 1997, 122).

- (6) [IX_{plural-arc} MAN IX_{loc} “over there”]_{DP} KNOW PRESIDENT [ASL]
 ‘The/those men over there know the president.’
- (7) * [IX_{plural-arc} MAN IX_{plural-arc}]_{DP} KNOW PRESIDENT
- (8) * [IX_{loc} “over there” MAN IX_{plural-arc}]_{DP} KNOW PRESIDENT

C. Semantic interpretation. The definiteness restriction, to be discussed in the next subsection, is found only with the prenominal IX. Compare examples (9) and (10) below (from MacLaughlin 1997, 117). Sentence (9) is infelicitous unless the man has been previously introduced into the discourse.

- (9) [IX_{3i} MAN]_{DP} ARRIVE [ASL]
 ‘The/that man is arriving.’
 * ‘A man is arriving.’
- (10) [MAN IX_{loci}]_{DP} ARRIVE
 ‘A/the man there is arriving.’

Although the postnominal index is compatible with an indefinite reading, the prenominal index is not.

3.1.1. Correlation with definiteness

Since expression of the definite determiner in ASL necessarily identifies reference unambiguously, the packaging of information is such that this determiner carries referential features, features of a kind not associated with definite articles in spoken languages. Giusti (2002) argues, for example, that referential features are associated with *prenominal possessives* and *demonstratives* (also intrinsically definite), but not with definite *articles*. By this definition, the definite determiner in ASL would be categorized as a demonstrative. There is also, however, an ASL sign glossed as THAT, shown in Figure 13.2, with a somewhat restricted usage, functioning to refer back pronominally to entities previously established in the discourse, or to propositions (which can-

not normally be designated by IX). This sign does not often occur prenominally within the noun phrase, as in ‘THAT MAN’, although this is sometimes found (possibly as a result of English influence). This sign THAT can also be contracted with ONE, to give a sign glossed as THAT^ONE, also used pronominally.



Fig. 13.2: THAT

In usage, the determiner IX is somewhat intermediate between the definite article and demonstrative of English. In fact, an NP such as ‘IX MAN’ might be optimally translated into English sometimes as ‘the man’ and at other times as ‘that man’. Since expression of the ASL determiner IX necessarily incorporates referential information, it can only be used when the NP referred to is referential, which excludes its use with generics. (As De Vriendt and Rasquinet 1989 observed, sign languages generally do not make use of determiners in generic noun phrases.) Furthermore, it can only be used for referents that already have been associated in the discourse with a *phi*-location. Thus, the use of IX in ASL is more restricted than the use of definite articles. Furthermore, the definite determiner IX is not required within a definite NP. This is a significant difference when compared with definite articles in spoken languages that have them. Van Gelderen (2007) has an interesting discussion of the transition that has occurred in many languages whereby demonstratives (occurring in specifier position) came to be reanalyzed as definite articles (occurring in the head of DP). The exact status of these definite determiners in ASL is unclear; it is possible that such a transition is in progress.

However, like articles in spoken languages (postulated to occur in the head determiner of a DP), in ASL the determiner IX carries overt inflection for the nominal *phi*-features of the language (and in sign languages, these include referential features). Also like articles, the definite determiner is often produced without phonological stress and can be phonologically cliticized to the following sign. A stressed articulation of the prenominal IX is, however, possible; it forces a demonstrative reading.

So although ASL does not have exact equivalents of English definite articles or demonstratives, it does have a determiner that (1) is correlated with definiteness; (2) occurs, in the canonical surface word order of noun phrases, prenominally; (3) can be phonologically unstressed and can cliticize to the following sign; (4) bears overt agreement inflection; (5) is identical in form to pronouns (as discussed in section 3.2); and (6) occurs in complementary distribution with elements analyzed as occurring in the head of the DP (discussed below).

3.1.2. Distinction between definite and indefinite determiners

Unlike the definite determiner, which accesses a *point* in space, the indefinite determiner in ASL involves articulatory movement within a small *region*. This general dis-

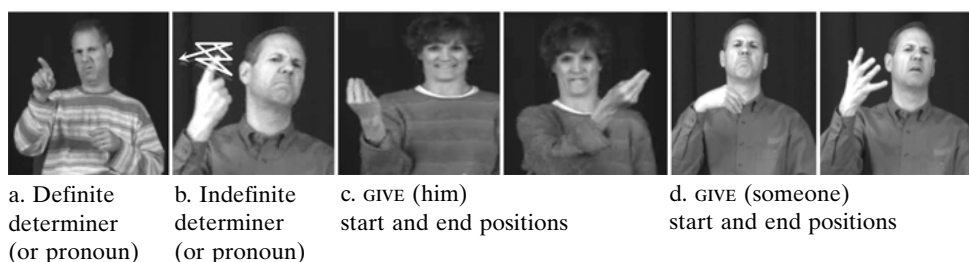


Fig. 13.3: Spatial distinction between reference: definite (point) vs. indefinite (region)

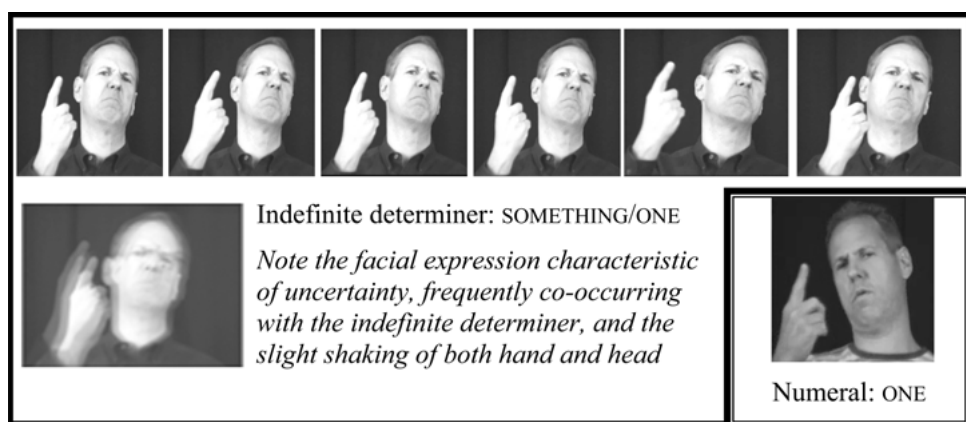


Fig. 13.4: Indefinite determiner vs. numeral 'one'

inction between definiteness and indefiniteness in ASL, the latter being associated with a region larger than a point, was observed by MacLaughlin (1997). Figure 13.3 illustrates the articulation of the definite vs. indefinite determiner. The latter, glossed as SOMETHING/ONE (because when used pronominally, it would be translated into English as either 'something' or 'someone'), is articulated with the same hand shape as the definite determiner, but with the index finger pointed upward and palm facing the signer; there is a small back and forth motion of the hand, the degree of which can vary with the degree of unidentifiability of the referent. The lack of certainty about the identity of the referent is also expressed through a characteristic facial expression illustrated in Figure 13.3, involving tensed nose, lowered brows, and sometimes also raising of the shoulders.

When the referent is specific but indefinite (e.g., 'I want to buy a book' in a situation where I know which book I want to buy, but you don't), the sign is articulated as an unstressed version of the numeral ONE (also illustrated in Figure 13.4), i.e., without the shaking of the hand and head and without the facial expression of uncertainty. There are many languages in which the indefinite article is an unstressed form of the numeral 'one' (e.g., Dutch, Greek, French, Spanish, Italian, and even English, historically, among many others). As with indefinite articles in other languages, the sign glossed as SOMETHING/ONE also has a quantificational aspect to its meaning.

A similar definiteness distinction is found in verbal agreement with the receiver argument of the verb GIVE: compare the end hand shape of the verb GIVE when used to mean ‘give him’ versus ‘give someone’ (with fingers spread, pointing to an area of space larger than the point represented by the fingers coming together), also illustrated in Figure 13.3. Although this kind of marking of indefiniteness as part of manual object agreement is rare, it provides support for this spatial correlation with (in)definiteness. Bahan (1996, 272–273) also observed that when eye gaze marks agreement, the gaze used with specific vs. non-specific NPs differs, the former involving a direct gaze to the *phi*-location, the latter, a somewhat darting gaze generally upward.

As with definite determiners in definite NPs, the indefinite determiner is not required in an indefinite NP, as shown in (11).

- (11) [(SOMETHING/ONE) MAN]_{DP} ARRIVE [ASL]
 ‘A man is arriving.’

Finally, like definite determiners (4), indefinite determiners can also occur with a post-nominal adverbial index (see (1) and (12)).

- (12) [(SOMETHING/ONE) MAN IX_{loc} “over there”]_{DP} ARRIVE [ASL]
 ‘A man over there is arriving.’

3.1.3. Analysis of noun phrases in ASL as determiner phrases

Work by Bahan, Lee, MacLaughlin, and Neidle has made the standard assumption in the current theoretical literature that the determiner (D) is the head of a DP projection, with the NP occurring as a complement of D. The D head is the locus for the agreement features that may be realized by a lexical element occupying that node, such as a definite determiner. (It is also possible that in ASL, IX – when functioning as a demonstrative (if demonstrative and non-demonstrative uses are structurally distinct) – might be analyzed as occurring in the specifier of DP. This is left as an area for future research.) Other elements that may occupy this node will be discussed in the next subsections, including pronouns and the possessive marker glossed as POSS. Determiners are in complementary distribution with those elements.

3.1.4. Non-manual expression of *phi*-features

The *phi*-features associated with the D node can be (but are not always) manifested non-manually by head tilt or eye gaze or both toward the relevant *phi*-location. This can occur simultaneously with the articulation of the determiner, or these non-manual expressions can spread over the rest of the DP (i.e., over the c-command domain of D). See MacLaughlin (1997, chapter 3) for further details, including ways in which *phi*-features can be expressed non-manually in possessive and non-possessive DPs, displaying parallelism with what can occur in transitive and intransitive clauses (Bahan 1996). It is also possible for the non-manual expression of those *phi*-features to occur in lieu of the manual articulation of the determiner. This can also occur with the pronominal use of IX, as mentioned in section 3.2.2.

3.1.5. Summary

Thus ASL, and sign languages more generally, realize definite determiners by gestures that involve pointing to the *phi*-locations associated with the main noun. Determiners in ASL occur in prenominal position, whereas there is also another use of IX – distinguishable in its articulatory possibilities from the definite determiner – in which the IX expresses adverbial information and occurs at the end of the NP. Typical of determiners occurring as head of DP, IX in ASL manifests overt inflection for *phi*-features (including referential features, despite the fact that such features are not included among *phi*-features in spoken languages). Definite determiners in ASL are also often phonologically unstressed and may cliticize phonologically to the following sign. As a result of the fact that they necessarily incorporate referential information (given the deictic nature of the articulation), definite determiners in ASL have a more restricted distribution than definite articles in spoken languages and may function as demonstratives (with phonological stress forcing a demonstrative reading). ASL also has an indefinite determiner related to the sign ONE. However, determiners are not required in definite or indefinite noun phrases.

3.2. Pronouns

3.2.1. Relation to determiners

As previously mentioned, both the indefinite and definite determiner can be used pronominally. Compare (9) and (11) with (13) and (14).

- (13) IX_{3i} ARRIVE [ASL]
 ‘He/she/it is arriving.’
- (14) SOMETHING/ONE ARRIVE
 ‘Someone is arriving.’

This is also common in other sign languages (e.g., Danish Sign Language (DSL) and Australian Sign Languages (Auslan), cf. Engberg-Pedersen 2003; Johnston/Schembri 2007, 271; see also chapter 11 on pronouns) as well as many spoken languages (discussed, e.g., in Uriagereka 1992). For example, the definite determiner and pronoun are identical in form in the following Italian examples (Cardinaletti 1994, 199):

- (15) **La** conosco [Italian]
 (I) her know
- (16) **la** ragazza
 the girl

Since Postal’s (1966) proposal that pronouns are underlyingly determiners, a claim also essential to Abney’s (1987) DP analysis, there have been several different proposals to account for the parallelisms between pronouns and determiners, and for the different types of pronouns found within and across languages in terms of categorical and/or

structural distinctions (e.g., Cardinaletti 1994; Déchaine/Wiltschko 2002). ASL has strong pronouns (i.e., pronouns that have the same syntactic distribution as full NPs) that are identical in form with determiners, and MacLaughlin analyzes them as occurring in the head of the DP. The issue of whether there is a null NP occurring as a sister to D within the subject DP of a sentence like (13) is left open by MacLaughlin.

3.2.2. Non-manual expressions of *phi*-features occurring with (or substituting for) manually articulated pronouns

The *phi*-features associated with a (non first-person) pronoun can also be expressed non-manually by eye gaze toward the intended *phi*-location. This has been referred to as ‘eye-indexing’ (e.g., Baker/Cokely 1980). Eye gaze can suffice for pronominal reference, occurring in lieu of manual realization of the pronoun. Baker and Cokely observe (1980, 214) that “[t]his eye gaze is often accompanied by a slight brow raise and a head nod or tilt to toward the referent,” that it is quite common for second-person reference, and that it allows for discretion with third-person reference.

3.2.3. Consequences of overt expression in pronouns of referential features

The fact that in ASL (and other sign languages) pronouns are referentially unambiguous is not without implications for syntactic constructions in which pronouns are involved. For example, ASL makes productive use of right dislocation, as shown in (17): an unstressed pronoun occurring sentence-finally and referring back to another NP (overt or null) in the sentence. (This has been referred to as ‘subject pronoun copy’, following Padden 1988, although not all constructions that have been described with that term are, in fact, right dislocation, and right dislocation can occur as well with non-subject arguments.) Moreover, the discourse conditions for use of right dislocation appear to be similar in ASL and other languages in which it occurs productively, such as French and Norwegian (Fretheim 1995; Gundel/Fretheim 2004, 188).

- (17) j-o-h-n ARRIVE IX_{3i} [ASL]
 ‘John arrived, him.’
- (18) Jean est arrivé, lui. [French]
 ‘John arrived, him.’
- (19) Iskremen har jeg kjøpt, den. [Norwegian]
 the.ice.cream have I bought it
 ‘I bought ice cream.’

Languages that make productive use of right dislocation typically also allow for the possibility of a right-dislocated full NP, albeit serving a different function: to disambiguate the pronoun to which it refers back, as shown for French in (21). However, given that pronouns in ASL are unambiguous, this does not occur in ASL.

- (20) * IX_{3i} ARRIVE j-o-h-n [ASL]
 ‘He arrived, John.’
- (21) Il est arrivé, Jean. [French]
 ‘He arrived, John.’

Rather than concluding from the ungrammaticality of (20) that ASL lacks right dislocation entirely (as does e.g. Wilbur 1994), we view the absence of disambiguation by full NP right-dislocation in ASL as a predictable consequence of the fact that referential information is overtly expressed by ASL pronouns.

3.3. Possessives

The possessive marker is articulated in ASL with an open palm pointing toward the *phi*-location of the possessor. British Sign Language (BSL) and related sign languages use the closed fist to refer to possession that is or could be temporary, and ix for permanent possession (Sutton-Spence and Woll 1999). For a typological survey of possessive and existential constructions in sign languages, see Zeshan (2008). When the possessor is indefinite (and not associated with any *phi*-location), a neutral form of the possessive marker is used, with the hand pointing toward a neutral (central) position in the signing space.

Syntactically, we analyze this possessive marker, glossed as POSS, as occurring in the head D of the DP, and it can – but need not – co-occur with a possessor (a full DP) in the specifier position of the larger DP. This is illustrated in examples (22) and (23).

- (22) [j-o-h-n [POSS_{3i} [FRIEND]_{NP}]_{D'}]_{DP} [ASL]
 ‘John’s friend’
- (23) [[POSS_{3i} [FRIEND]_{NP}]_{D'}]_{DP}
 ‘his friend’

It is occasionally possible (especially with kinship relations or inalienable possession) to omit the POSS sign, as shown in (24) and (25).

- (24) j-o-h-n (POSS_{3i}) MOTHER [ASL]
 ‘John’s mother’
- (25) j-o-h-n (POSS_{3i}) LEG
 ‘John’s leg’

When the possessive occurs without an overt ‘possessee’, it typically occurs in a reduplicated form, two quick movements, rather than one, of the open palm toward the *phi*-location. As also observed by MacLaughlin (1997), this is one typical effect of the phonological lengthening that occurs in constituent- or sentence-final position (Grosjean 1979; Coulter 1993) or in a position immediately preceding a deletion site or a syntactically empty node. There have been several studies of the effects of prosodic prominence and syntactic position on sign production (e.g., Coulter 1990, 1993; Wilbur

1999). ASL has phonological lengthening in environments similar to those in which it has been attested in spoken languages (Cooper/Paccia-Cooper 1980; Selkirk 1984). Liddell observed, for example, that a head nod accompanying manual material is often found in constructions involving gapping or ellipsis (Liddell 1980, 29–38). Phonological reduplication appears to be another such process that is more likely in contexts where phonological lengthening is expected, i.e., constituent-final position and syntactic positions immediately preceding null syntactic structures. (Frishberg 1978, for example, observed a diachronic change that affected a number of ASL compounds: when one element of a compound was lost over time, there was a compensatory lengthening of the remaining part that took the form of reduplication. So BEAK + WINGS evolved into a reduplicated articulation of just the first part of that original compound, giving the current sign for ‘bird’.)

It is presumably not a coincidence that when one finds *poss* in a DP-final position – in a situation where there is either (a) no overt head noun, or (b) a marked word order in which the *poss* marker follows the main noun – *poss* is generally reduplicated, as indicated by ‘+’ in the glosses in (26) and (27).

- (26) Context: ‘Whose book is that?’ [ASL]
 Reply: *poss*₁ +
 ‘Mine.’
- (27) *ix*₂ PREFER [CAR *poss*₁ +]
 ‘You prefer *my* car.’

Similar reduplication is possible with other DP-internal elements, as will be discussed below. Interestingly, when *ix*₃ is used as a personal pronoun, i.e., when it occurs as the sole overt element within a DP, it is not reduplicated. However, when it is used as a demonstrative without an overt head, on the meaning ‘that one’, the pointing gesture typically *is* reduplicated (providing some evidence that the *ix* may occupy distinct structural positions in the two cases; cf. section 3.1.3):

- (28) Context: ‘Which one would you like?’ [ASL]
 Reply: *ix*_{3i} +
 ‘That one.’
- (29) Context: ‘Who do you like?’
 Reply: *ix*_{3i}
 ‘Him.’

3.4. Reflexives

As shown in Figure 13.1d, the reflexive is articulated with the thumb facing upward, thumb pad pointing to the *phi*-location of its antecedent. (For first-person, the orientation is variable: the pad of the thumb can either be facing toward or away from the signer as the hand makes contact with the signer’s chest.)

A reflexive can be used either pronominally (30) as an argument coreferential with an NP antecedent, or as an intensifier, as in (31) and (32).

- (30) j-o-h-n HURT SELF_{3i} [ASL]
 ‘John hurt himself.’
- (31) j-o-h-n SELF_{3i} ARRIVE
 ‘John himself is arriving.’
- (32) j-o-h-n WRITE STORY SELF_{3i}
 ‘John is writing the story himself.’

When SELF occurs in a prosodically prominent environment, it can also be produced with a reduplicated motion, of the kind just described for possessive pronouns.

Crosslinguistically, there is a distinction between simplex reflexives, such as *se* in French or *seg* in Norwegian, and morphologically complex reflexives found in, e.g., English (*him+self* and *her+self*) or Auslan (composed of the personal pronoun followed by the sign SELF (Johnston/Schembri 2007)). See, for example, the discussion in König and Siemund (1999). Although it might appear that ASL SELF is a simplex form, it is in fact a morphological combination of the reflexive nominal SELF and the pronominal *phi*-features. The ASL (pro-)SELF forms have the syntactic properties that tend to characterize complex anaphors: notwithstanding claims to the contrary by Lillo-Martin (1995) (refuted by Lee et al. 1997), they are locally – rather than long-distance – bound, and they are not restricted to subject antecedents.

3.5. Nouns and adjectives

The spatial location in which nouns and adjectives are articulated in ASL does not typically convey referential information. However, there are some nouns and adjectives (a relatively limited set) whose articulation can occur in, or oriented toward, the relevant *phi*-location, as discussed by MacLaughlin (1997). So for example, a sign like HOUSE or a fingerspelled name like j-o-h-n can be articulated in (or oriented in the direction of) the *phi*-location of the referent. See chapter 4 of MacLaughlin (1997) for more detailed description of nouns and adjectives that are articulated either in or oriented toward the relevant *phi*-location. (See also Rinfret (2010) on the spatial association of nouns in Quebec Sign Language (LSQ).)

3.6. Other elements that are – and are not – found in ASL NPs

Given the availability of classifier constructions for rich expression of spatial relations and motion, the use of prepositional phrases is more limited in sign than in spoken languages, within both clauses and noun phrases. It is also noteworthy that nouns in ASL do not take arguments (thematic adjectives or embedded clauses). Constructions that would be expressed in other languages by complex NPs (e.g., ‘the fact that it rained’) require paraphrases in ASL. The information conveyed by relative clauses in languages like English can be expressed instead by use of correlatives – clauses that occur in sentence-initial position, with a distinctive non-manual marking (traditionally, if inappropriately, referred to as ‘relative clause’ marking) – rather than by clauses embedded within NP arguments of the sentence. An example is provided in (33).

- (33) $\overbrace{\text{CAT CHASE DOG IX}_{31}}^{\text{rc}} [\text{EAT MOUSE}]_{\text{IP}} \quad [\text{ASL}]$
 ‘The cat that chased the dog ate the mouse.’

The non-manual marking described by Liddell (1978) and labeled here as ‘rc’ includes raised eyebrows, a backward tilt of the head, and “contraction of the muscles that raise both the cheeks and the upper lip” (Liddell 2003, 54). Frequently non-manual markings of specificity (e.g., nose wrinkle (Coulter 1978)) are also found. Note, however, that Liddell’s (1977) claims about the syntactic analysis of relative clauses differ from what is presented here. See, e.g., Cecchetto et al. (2006) and chapter 14 for discussion of strategies for relativization in LIS. For further discussion about what can occur in the left periphery in ASL, including correlative clauses, see Neidle (2003).

3.7. Summary

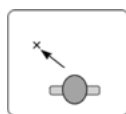
This section has surveyed some of the essential components of ASL NPs, restricting attention to singular NPs. We have shown that person/reference features participate in agreement relations within the noun phrase, and we have seen overt morphological inflection instantiating these features in determiners, pronouns, possessive markers, and reflexives. Predicate agreement with noun phrases, by verbs and adjectives (of the appropriate morphological class), also involves morphological expression of these same features. Section 4 examines expression of plurality within noun phrases. Section 5 then considers the canonical word order of elements within the noun phrase.

4. Number: expression of plurality

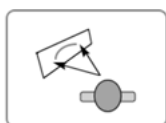
The discussion of the spatial locations associated with referential information has, up to this point, been restricted to noun phrases without any overt marking for plurality. Grammatically, ASL noun phrases (and particular elements within them) do not bear number features of singular vs. plural, but rather are generally either unmarked for number (consistent with either singular or plural interpretations) or overtly marked for plural. Pfau and Steinbach (2006) analyze the plural form as distinguished from the singular by a $\emptyset$ affix in the cases that are treated here as unmarked for number. Cases where plurals are not explicitly marked as such have often been described in the ASL literature as involving a plurality viewed as a collective (Padden 1988, e.g.). For a more detailed discussion of plurality, see chapter 6.

4.1. Use of space

When plurality is expressed through explicit number morphology – as it is productively for determiners, pronouns, reflexives, and those agreeing verbs that can be so marked (although this is subject to certain restrictions) – the *phi*-location is generally represented spatially as an arc (rather than a point), using the same hand shapes that



Point used for
referent unmar-
ked for number



Arc used for
referent marked
as plural

Fig. 13.5: *Phi*-locations used for un-
marked vs. plural 3rd-person
referent



Movement at the end of the verb GIFT to agree with a
plural object

Fig. 13.6: Plural object agreement



Fig. 13.7: Index articulated in an arc to indicate plural

occur for the singular forms illustrated in Figure 13.1. The same general principles discussed earlier apply with respect to the way in which these *phi*-locations are accessed. This is illustrated schematically in Figure 13.5 and by an example of a plural *ix* (determiner or pronoun) in Figure 13.7. Plural object agreement, involving a final articulation of the verb with a sweeping motion across the arc associated referentially with the plural object, is shown in Figure 13.6. This can also interact with aspectual markings such as distributive; see MacLaughlin et al. (2000) for details.

Thus, when definite determiners, pronouns, possessives, reflexives, and agreeing verbs are overtly marked for plural number, there is a sweeping motion between the endpoints of the plural arc (rather than the pointing motion described in section 2) but utilizing the same hand shapes as for the singular forms illustrated in Figure 13.1. Thus, like the person features and referential features discussed earlier, number features (and specifically, plurality), when present, also have a spatial instantiation; however, plurality is associated not with a point but with an arc-like region of space.

4.2. Marking of plurality on nouns and adjectives within noun phrases

There has not been a comprehensive account of plural formation of ASL, but Pfau and Steinbach (2005, 2006) give a comprehensive overview of plural formation in German Sign Language (DGS) and discuss modality-specific and typological aspects of the expression of plural in sign languages. A few generalizations about the marking of plurality on nouns in ASL are contained in Wilbur (1987) and attributed to the unpublished Jones and Mohr (1975); Baker and Cokely (1980, 377) list SENTENCE, LANGUAGE, RULE, MEANING, SPECIALTY-FIELD, AREA ROOM/BOX, HOUSE, STREET/WAY, and STATUE as allowing an overt plural form formed by a kind of reduplication.

The kind of arc that is used for predicate agreement (e.g., for verbs or predicative adjectives) can also mark plurality for a small class of nouns that originated as classifiers, such as *box*, seen in Figure 13.8. However, most nouns that can be overtly marked for plural – although this is still a limited set – are so marked through reduplicative morphology.



Fig. 13.8: Plural of *box*, articulated along an arc

For example, the singular and plural of *way* are illustrated in Figure 13.9a; the latter has a horizontal translation between the two outward movements. When a bisyllabic singular form is pluralized, the resulting form does not increase in overall number of syllables, but remains bisyllabic: consisting of a single syllable – reduced from the singular form – which is reduplicated, with the horizontal translation characteristic of non body-anchored signs. This is shown in Figure 13.9b for *POSTER*; the singular is produced with two small outward movements at different heights relative to the signer, whereas the plural involves two downward movements, separated by a horizontal translation, between the positions used for each of the two movements in the singular. Perry (2005) examined the morphological classes for which plurals overtly marked in this way are possible. She found some variation among ASL signers in terms of which signs have distinct plural forms, as well as the exact form(s) that the plural could take. She presented an Optimality Theoretic account of some of the principles that govern how a reduplicated plural can be related to a mono- or bi-syllabic singular form. What is perhaps surprising, however, is that use of the overtly plural form (even when a distinct plural form exists) is not obligatory for a noun that is semantically plural. Whereas the

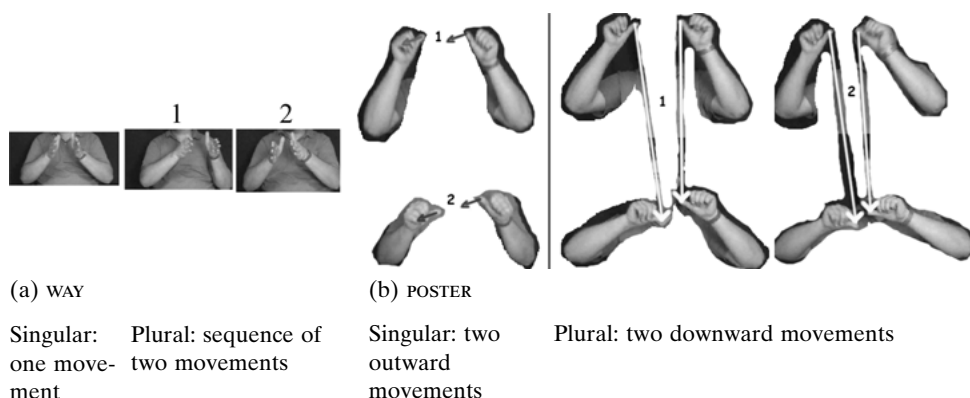


Fig. 13.9: Unmarked (singular) vs. plural forms of sign (a) *WAY* and (b) *POSTER*

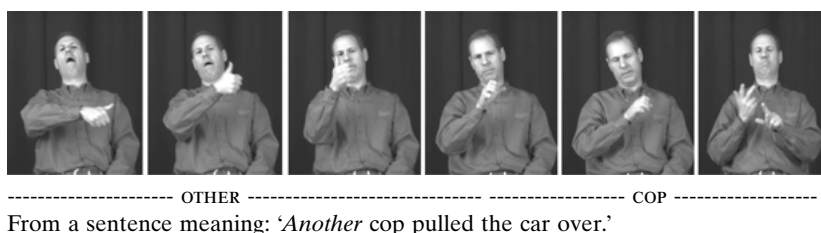
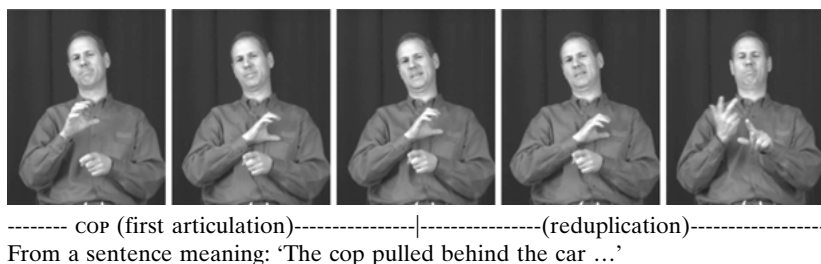


Fig. 13.10: COP signed with (above) and without (below) reduplication

plural form of *POSTER* (articulated with a reduplicated motion) is unambiguously plural in (35), (34) can be interpreted to refer to one or more posters.

(34) IX_1 LIKE *POSTER* [ASL]
'I like (a/the) poster(s).'

(35) IX_1 LIKE *POSTER-pl*
'I like (the) posters.'

Moreover, consistent with the observation in section 3.3 that reduplication may be correlated with prosodic prominence and length, the reduplicated (overtly plural) form is more likely to be used in prosodically prominent positions (e.g., for constituent- or sentence-final nouns, or those that receive stress associated with pragmatic focus). These same conditions appear to correlate with the likelihood of use of reduplicated forms for singulars that can optionally occur as reduplicated (e.g., *COP*, *BOY*) (Neidle 2009). Compare the examples in Figure 13.10, taken from a story by Ben Bahan. In the first, with prosodic prominence on *COP*, it is articulated with a reduplicated motion; in the second, where the focus is on *OTHER*, it is not.

Although almost all seemingly singular forms are simply unmarked for number (and therefore compatible with either a singular or plural reading), there are a few cases of a real distinction between singular and plural: e.g., *CHILD* VS. *CHILDREN*, *PERSON* VS. *PEOPLE*. In such cases, the plural is irregular, in that it is not formed from the singular by addition of regular reduplicative plural morphology. The difference in the behavior of inherently singular nouns, as compared with nouns simply unmarked for plurality, will be demonstrated in section 4.3.

4.3. Lack of concord

Within a noun phrase, an overt expression of plurality does not normally occur on more than one element. As observed by Pfau and Steinbach (2006), there are also other sign languages, including DGS, in which plurality can be overtly expressed only once within a noun phrase, as in spoken Hungarian and Turkish. They note that not all sign languages have restrictions on NP-internal number agreement (Hausa Sign Language and Austrian Sign Language (ÖGS) do not). If there is some other semantic indicator of plurality – e.g., a numeral or quantifier such as *MANY*, *FEW*, etc. – then overt plural morphology on the main noun is superfluous. Similarly, if a plural NP contains both a definite determiner and a noun that has distinct plural form, the plurality is overtly marked on one or the other but not both, as illustrated by the following noun phrases:

- (36) [*MANY POSTER*] [ASL]
 ‘many posters’
- (37) [*THREE POSTER*]
 ‘three posters’
- (38) ?* [*MANY POSTER-pl*]
 ‘many posters’
- (39) ?* [*THREE POSTER-pl*]
 ‘three posters’
- (40) [*IX_{3pl-arc} POSTER*]
 ‘the/those posters’
- (41) [*IX_{3i} POSTER-pl*]
 ‘the/those posters’
- (42) ?* [*IX_{3pl-arc} POSTER-pl*]
 ‘the/those posters’

In many spoken languages, grammatical number (singular vs. plural) is a *phi*-feature that triggers obligatory agreement/concord within noun phrases. However, in ASL it appears that, although there is the possibility of overtly marking plurality, multiple indicators of plurality within a single noun phrase are not needed. Thus, when a noun like *POSTER* is unmarked for number, it is consistent with either a singular or plural interpretation, which can be determined contextually. In contrast, in (41), where there is an overt morphological expression of plurality, the head noun, and therefore the noun phrase as a whole, are marked as plural.

Overt plural marking on adjectives in ASL through reduplication is extremely rare. However, at least one adjective, *DIFFERENT*, can bear plural (reduplicative) inflection. Consistent with the above observation, overt marking for plurality normally occurs on only one element within a noun phrase. In an NP such as [*DIFFERENT LANGUAGE*] referring to ‘different languages’, one or the other of those elements can occur in the plural form (with reduplication most likely on the element that is prosodically prominent), but not both.

However it is worth noting that, in ASL at least (although this appears to be different from DGS, based on Pfau and Steinbach 2006, 170), there is not an absolute prohibition against multiple expressions of plurality within an NP. An irregular plural form such as CHILDREN is related to a form CHILD that is intrinsically singular. Thus a word like MANY or THREE could only be followed by the plural form CHILDREN, not by the singular CHILD, which would be semantically incompatible. This is true for other singular/plural pairs, in which the plural does not contain regular plural morphology (e.g., PEOPLE). Compare the following phrases with those presented above:

- (43) * [MANY CHILD] [ASL]
 ‘many children’
- (44) * [THREE CHILD]
 ‘three children’
- (45) [MANY CHILDREN]
 ‘many children’
- (46) [THREE CHILDREN]
 ‘three children’
- (47) * [IX_{3pl-arc} CHILD]
 ‘the/those children’
- (48) [IX_{3i} CHILDREN]
 ‘the/those children’

Thus, some nouns in ASL have overt plurals, many (but not all) formed through regular plural inflection involving reduplication (e.g., WAY-pl, POSTER-pl). An even smaller number of ASL nouns have forms that are intrinsically singular (e.g., CHILD[sg], PERSON[sg]). Nouns unmarked for number (e.g., POSTER) are compatible with either singular or plural interpretations, subject to a strong preference to avoid redundant expression of plurality within NPs when it is possible to do so.

5. DP-internal word order



As has been observed going back to Greenberg’s (1963) ‘Universal 20’ – and as has been subsequently considered within more recent theoretical frameworks (Hawkins 1983; Cinque 2005) and also within the context of sign language research (Zhang 2007) – when demonstratives, numerals, and adjectives occur prenominal (as they do in their canonical order in ASL), they universally occur in this order: Demonstrative > Numeral > Adjective > Noun. ASL is no exception. Worth noting, however, are phenomena involving numeral incorporation, to be discussed below.

5.1. Expression of quantity

There is obligatory numeral incorporation of ix with numerals (which would have been expected to occur immediately following ix). English phrases like ‘we three’ or ‘the

two of them' are expressed by single signs in ASL (as described, for example, by Baker and Cokely (1980, 370)). The supinated hand (i.e., palm up) with the numeral hand shape 2 shakes back and forth between two referents; the hand shapes of 3, 4, or 5 circle once or twice in a movement either inclusive or exclusive of the signer. The sign WE-TWO when it includes the addressee is signed using a back and forth motion of the 2 hand shape. This kind of numeral incorporation has also been described for Croatian Sign Language (HZJ), BSL, and other sign languages (e.g., Alibašić Ciciliani/Wilbur 2006; see also chapters 6 and 11).

It is also not uncommon for specific nouns to undergo incorporation with numerals (which would otherwise have been expected to occur immediately before them); for information about numeral incorporation in Argentine Sign Language (LSA) and Catalan Sign Language (LSC), see Fuentes et al. (2010). In ASL the numerals 1 through 9 (smaller numbers doing this more commonly than larger ones) can be melded into signs of time and money, for example: TWO-HOURS, THREE-DAYS, FOUR-WEEKS, FIVE-DOLLARS, SIX-MONTHS, SEVEN-YEARS-OLD, TIME-EIGHT (8:00), NINE-SECONDS. Sutton-Spence and Woll (1999) give examples of the same incorporation in BSL (£3, THREE-YEARS-OLD), with FIVE being the highest numeral that can be incorporated (and this form is rare compared to the lower numerals). For excellent examples and illustrations of the use of numerals and quantifiers in various constructions, see also *Numbering in American Sign Language* (DawnSignPress 1998). ASL also has a variety of quantifiers that can also be used, although those will not be discussed here. See (Boster 1996) for discussion about possible variations in word order that have been claimed to occur with quantifiers and numerals.

ASL can also make use of classifier constructions to convey notions of quantity (see chapter 8). This can be done through classifiers that express a range of types of information about such things as quantity, form, and spatial distribution of objects. There are also cases where numerals incorporate with classifiers, giving rise to what have been called 'specific-number classifiers' (Baker/Cokely 1980, 301), which represent a specific number of people or animals through the use of the hand shapes corresponding to numerals.

5.2. Ordering of adjectives

ASL has both prenominal and postnominal adjectives within the noun phrase, and there are some significant differences between them. There may also be differences in usage among signers, with some generational differences having been reported. Padden (1988) reported a preference for postnominal adjectives; Gee and Kegl (1983) reported that older signers showed a preference for postnominal adjectives.

Adjectives in ASL that occur predicatively (i.e., that are in the clause, but not contained within a noun phrase) exhibit properties distinct from those that occur NP-internally. As observed by MacLaughlin (1997), only predicative adjectives can inflect for aspect and agreement in the same way that verbs can. As analyzed by MacLaughlin (1997, 186):

Prenominal adjectives are ... attributive modifiers, occurring in the specifier position of a functional projection above NP (following Cinque 1994), while postnominal adjectives are predicative modifiers, right-adjoined at an intermediate position in the DP projection.



Prenominal (but not postnominal) adjectives in ASL are strictly ordered, and the order is comparable to that found in English and discussed by Cinque (1994) as attested in many languages. This is illustrated by MacLaughlin's examples showing the contrast between the prenominal adjective sequences in (49) and (50) and the postnominal sequences in (51) and (52). When the adjectives occur prenominally, the NP is not well-formed if RED precedes BIG, whereas postnominally, either word order is allowed (examples from MacLaughlin 1997, 193).

- (49) [BIG RED BALL IX_{adv_i}]_{DP} BEAUTIFUL [ASL]
 'The big red ball over there is beautiful.'
- (50) * [RED BIG BALL IX_{adv_i}]_{DP} BEAUTIFUL
- (51) [BALL RED BIG IX_{adv_i}]_{DP} BEAUTIFUL
 'The ball that is red and big over there is beautiful.'
- (52) [BALL BIG RED IX_{adv_i}]_{DP} BEAUTIFUL
 'The ball that is big and red over there is beautiful.'

Certain adjectives can only occur prenominally in canonical word order; for example: BASIC, TRUE/REAL, FORMER. Other adjectives are interpreted differently when used prenominally vs. postnominally, such as OLD (examples from MacLaughlin 1997, 196).

- (53) [POSS_i OLD FRIEND]
 'my old friend'
- (54) [POSS_i FRIEND OLD]
 'my friend who is old'

5.3. Summary

Sign languages are subject to the same general constraints on word order as spoken languages. The relative canonical order of demonstratives, numerals, and adjectives that occur prenominally in ASL is consistent with what is found universally. However, it is also true, as previously noted, that ASL allows considerable flexibility with respect to surface word order. Deviations from the canonical word orders, attributable to displacements of constituents from their underlying positions, are frequently identifiable by prosodic cues. See Zhang (2007) for discussion of word order variation. Focusing on Taiwan Sign Language, Zhang investigates the ways in which variations in word order both within a given language and across languages can be derived. See also Bertone (2010) for discussion of noun phrase structure in LIS.

6. Conclusion

Sign languages are governed by the same fundamental syntactic principles as spoken languages. ASL includes the same basic inventory of linguistic elements. In particular,

we have argued for the existence of both definite and indefinite determiners occurring preminally in the canonical word order within a DP.

Sign languages also exhibit standard syntactic processes, such as agreement, although the specifics of how agreement works are profoundly affected by the nature of spatial representations of reference. In ASL and many other sign languages, referential features, along with person features, are involved in agreement/concord relations. These features are realized morphologically not only on determiners but also on pronouns, possessives, reflexives/intensifiers, and agreement affixes that attach to predicates (including verbs and adjectives), and they can also be realized non-manually through head tilt and eye gaze.

In contrast, number features are not among those features that exhibit concord within noun phrases. The base form of most nouns is unmarked for number. Certain nouns allow for plurality to be overtly marked morphologically, through a regular inflectional process that involves reduplication. However, multiple markings of plurality within a noun phrase are strongly dispreferred.

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