Chapter 9  
Verb directionality

The previous chapter has shown that many sign languages can manipulate space by establishing positions (R-loci) in it for hypothetical, non-present referents. A phenomenon referred to as verb directionality (known also as ‘verb agreement’ in the literature) in sign languages is also based on setting up locations for referents in sign space. A set of verbs in many sign languages are reported to change their form by starting the movement at one location (known as ‘R-locus’) associated with a particular grammatical/semantic role of a verb argument and ending at another established R-locus. In addition to marking the changes in meaning through a change of the direction of movement, a change in the orientation has also been reported for some verbs.

This chapter first provides background information on the phenomenon of directionality in sign languages. Afterwards YSL will be investigated with respect to directionality. The chapter is organized as follows. In 9.1 a phenomenon of verb agreement in spoken languages will be briefly outlined. Section 9.2.1 turns to a discussion of sign language verb classes, which is important, as the directionality of sign language verbs is restricted to one set of verbs. Next, different views on the analysis of verb directionality in sign languages will be discussed in 9.2.2. Along the way, main parts of the argumentation for different positions will be summarized. Section 9.3 is concerned with verb directionality in YSL. It will show that YSL makes limited use of spatial verb modifications to mark core arguments of the verb. Given this limited use of spatial morphology, it is essential to examine whether YSL has a rigid syntactic structure for the identification of the subject and object in a transitive clause. This will be analyzed in section 9.4

9.1. Verb agreement in spoken languages

Two different notions of agreement are usually distinguished. The first notion, known as concord, defines agreement as a “covariation between words, which can be attested in various parts of the system of a language” (usually within a DP) (Cysouw, 2011a). For illustration consider an ordinary instance of adjective-noun concord in two Russian noun phrases in (1)\textsuperscript{107}. 
The second notion of agreement is restricted to person-number-gender inflections on verbs as demonstrated by the Russian verb in (2) which agrees with the pronoun in these features.

Here I adopt Cysouw’s (2011) terminology and use agreement/concord and agreement/inflection for the two notions, respectively. In the following only one type of agreement, namely agreement/inflection will be considered leaving agreement/concord aside.

All languages possess strategies to identify who is doing what to whom in a message, namely strategies to describe the relation between a verb and its arguments. Two main strategies to mark verb arguments in spoken languages are word order and agreement morphology. For some languages, especially topic-prominent\textsuperscript{108} ones such as Mandarin Chinese, word order serves as the most crucial syntactic device for information structuring. Mandarin Chinese is claimed to be a SVO language, at least in terms of statistical predominance (Sun & Givon, 1985). Hence, the SVO order illustrates that the first noun phrase (奶奶nainai) in (3) is the subject of the sentence.
Verb directionality

previously presented from Russian which displays a rather “standard agreement system” (Corbett, 2006). In (4) the verb встретила vstrelila ‘to meet’ represents the target in agreement relations and agrees with the controller of agreement in the features person, number and gender. The controller is a nominal expression моя бабушка моja babuška ‘my grandmother’, which is claimed to have certain inherent features that are matched by the verb.

(4) Моя бабушка встретила вчера случайно на улице свою подругу.
moja babuška vstrelila včera slučajno na ulice svoju podrugu
1SG.POSS grandmother.NOM.SG.FEM meet.PERF.ASP.PAST.SG.FEM
вчера случайно на улице свою подругу.
včera slučajno na ulice svoju podrugu
yesterday by chance on street 3SG.REFL.POSS friend.ACC
‘My grandmother has run into her friend yesterday’

There are also some spoken languages, such as Hungarian, in which verbs agree in number and person with their subjects and objects. As shown in (5) object agreement in Hungarian encodes the definiteness feature of the direct object.

(5) L’at-ok egy madar-at
see.1.SG.INDEF an bird.ACC
‘I see a bird’

(Coppock & Wechsler, 2010)

However, cross-linguistically the dominant agreement pattern is verbs agreeing with their subjects rather than with their objects. Verbal person marking on the object alone is an exception among spoken languages and is found, for example, in a few Khoisan languages (Siewierska, 2011).

Cross-linguistic research shows that spoken languages exhibit broad variation in agreement patterns (Corbett, 2006; Siewierska, 2011). For sign languages, the opposite has been observed. First cross-linguistic comparisons among dozens of sign languages found no cases that deviate from ASL with regard to spatial morphology and syntax (Supalla & Webb, 1995 cited in Newport & Supalla, 2000). Sign languages are still believed to show little variation, particularly in spatial grammatical structures. The best example showing striking similarity among all sign languages is that only a set of verbs, and not all verbs, participates in the verb agreement system, a characteristic that is clearly distinct from spoken language agreement (Janis, 1995;
Mathur & Rathmann, 2006; Meir, 2002). In the next section, I introduce the sign language verb classes and describe what is understood under directionality (or ‘verb agreement’) in the sign language literature.

9.2. Verb directionality in sign languages

9.2.1. Sign language verb classes

Sign language verbs are typically organized into the three major classes of plain, agreement and spatial verbs. This traditional tripartite division of verb types goes back to Padden’s (1988) proposal for ASL. The three verb classes are claimed to differ in the use of signing space for referential purposes. While plain verbs do not use the signing space, the latter two classes use the space referentially, although in different ways.

Plain verbs are relatively fixed in space and do not move through it to show any grammatical information. DGS examples include verbs such as KAUFEN ‘to buy’, ZAHLEN ‘to pay’ or MÖGEN ‘to like’. Their form remains invariant. These verbs use the body as the location and carry no information about person, number or location of the subject or object. Consider Figure 69 showing the ASL verb EAT, which does not vary with respect to person or number of the subject and object.

![Figure 69. ASL verb EAT](image)

The second category of verbs has been called “inflecting verbs” (Padden, 1988), “agreement verbs” (Sandler & Lillo-Martin, 2006; Padden, Meir, Aronoff, & Sandler, 2010) or “indicating verbs” (Liddell, 2000; Johnston & Schembri, 2007; de Beuzeville, Johnston, & Schembri, 2009). They contain information about person and number of the subject and object, which is communicated by palm orientation and path movement through syntactic space. Depending on the literature, agreement verbs fall into further subcategories viz. single-agreement verbs agree with the object, double agreement
verbs can agree with both the subject and the object. Furthermore, they can be
classified by transitivity (transitive vs. ditransitive) and by direction (forward
vs. backward) (Padden, 1988). Unlike plain verbs, agreement verbs show
person agreement by altering the beginning and the final points of the verb
sign previously established in the syntactic space. It is the main linguistic
feature that is claimed to trigger the modulation of the verb. Take the ISL
verb SHOW in Figure 70 for example: whereas ‘I show you’ is signed by
the forward motion from a point near the signer toward the addressee, ‘you
show me’ is signed with a backward agreement verb, since the beginning
and endpoints of the sign are just the opposite. The ISL verb SHOW can be modi-
fied to indicate more than one referent. Verbs are modified to express dual or
plural. The plural marking is expressed through a horizontal arc (cf. Figure
70) and has reportedly some restrictions in its realization.

![Figure 70. ISL verb agreement](image)

Padden (1988) shows that unlike the singular form, the plural form is limited
to the object. Additionally, Rathmann & Mathur (2008) show that the number
feature is restricted to verbs selecting two animate arguments only as shown
in (6)–(7). The DGS example in (7) is considered ungrammatical since the
object is non-animate. Note that the notational conventions were adapted
from the source and differ from the ones used in this book: ‘I’ stands for first
person and ‘x’ for non-first person.

(6)  \[iX_{1,sg} \text{ PERSON-CL}++ \text{ FRAGEN}_{1,sg} \rightarrow x,pl \] [DGS]
   ‘I ask many people’ (animate)

(7)  \[*iX_{1,sg} \text{ BUCH}++ \text{ KAUFEN}_{sg} \rightarrow x,pl \] [DGS]
   ‘I buy many books’ (non-animate)
   (Rathmann & Mathur, 2008, p. 195)
The phenomenon referred to as verb agreement in sign languages has been reported to occur in agreement verbs only. More precisely, agreement usually occurs in verbs with animate arguments in an event of transfer in which some concrete or abstract entity changes its owner (Meir, 2002). In sign language agreement R-loci are established in space identical to those described for the pronominal system. Similarly, these loci can be actual locations of present referents or arbitrary locations assigned for non-present referents. Thus, sign language verb agreement is also called locus agreement (Pfau & Steinbach, 2006). Consider the example of agreement in ISL shown in Figure 70. In signing ‘I show you’, the signer’s hands move from the locus of the subject, the signer, to the locus of the object, the addressee. Thus the direction of the movement (as in the ISL verb show), and often the orientation of the hand(s) in some verbs, is interpreted by many scholars as inflection showing person and number agreement. In contrast to the ISL example, in (8) the third person referent is not present. Hence, the movement of the verb GIVE is executed from the locus near the addressee to a locus associated with the third person referent in the signing space in front of the signer.

(8) BOOK, FINISH f+GIVE+rt [Auslan]
‘Have you given him (or her) the book?’
(Johnston & Schembri, 2007, p. 144)

Unlike the agreement verbs, spatial verbs can give information about the path motion, the change of orientation, the location and the existence of the referent, the movement, the manner of motion, the trajectory, the speed and the class of nouns moved or located by means of classifiers (for more information on classifiers see 10.2). Spatial verbs in DGS include verbs GEHEN/KOMMEN ‘to go/to come’ or BEWEGEN ‘to move’ etc. The beginning and endpoints are determined not by the syntactic arguments of subject or object, but by spatial referents. In these verbs, movement begins at one location and ends at another. The initial and final positions of the verb CARRY in (9) indicate the location, the path and trajectory of an object being carried.

(9) CAN PRO-2 f+CARRY+rt PLEASE [Auslan]
‘Could you carry it (from there to there), please?’
(Johnston & Schembri, 2007, p. 145)

Similar to agreement verbs, spatial verbs are also directed towards locations in sign space, specifying locatives. The body is normally not involved in the event at all or is used as a spatial point. As another example, consider the
verb in Figure 71 (Chang, Su, & Tai, 2005, p. 270). The TSL spatial verb RUN-INTO contains information about the movement of the subject from one location to the other.

There are also alternative analyses of sign language verb classes different from that of Padden’s (1988). Other authors argue that the distinction between agreement and spatial verbs is not straightforward. According to this view, non-plain verbs can agree with either locative or person arguments (Quadros & Quer, 2008; Quer, 2010). Other analyses also include different terminology (cf. Liddell, 2000). However, these analyses are intimately connected with the assumption about the agreement process and will be addressed in the next section.

A significant body of research supports a theory that many sign languages display the agreement system described above. Lillo-Martin & Meier (2011, p. 98) go so far as to state that “essentially similar systems are found in all mature sign languages that have been described in the literature” [emphasis added]. The existence of the Plain-Agreement-Spatial verbs system in many sign languages around the world has brought many linguists to think of that system as being a general feature across all sign languages (Sandler & Lillo-Martin, 2006; Padden, Meir, Aronoff, & Sandler, 2010, p. 572) or to consider it as a “near-universal property of sign languages” (Meir & Sandler, 2008, p. 76). Different explanations for the limited variation found in the organization of spatial morphology in signed languages have been proposed (Newport & Supalla, 2000). One hypothesis suggests that it is the visual-gestural modality that facilitates more homogenous use of spatial devices in sign languages (Newport & Supalla, 2000; Meier, 2002b). Another hypothesis speculates that the relative young age associated with sign languages limits the variance in use of
spatial devices (Aronoff & Meir, 2005; Sandler, Meir, & Aronoff, 2005) (see section 12.2.1 for a discussion). However, we find that some shared sign languages, which are not considered as young, exhibit some structural differences in the organization of the signing space (De Vos & Zeshan, 2012). For example, PROVSL, Kata Kolok and ABSL do not exhibit tripartite division of verb types. These sign languages have been reported to lack a system of directionality in verbs (Washabaugh, 1986; Marsaja, 2008; De Vos, 2012; Padden, Meir, Aronoff, & Sandler, 2010). It is becoming clear that the previously reported little variation in spatial devices is attributable to the lack of cross-linguistic studies of distinct sign languages with long histories and little or no contact with Western sign languages (Perniss, 2012; De Vos & Zeshan, 2012).

Although the YSL data reveal that few verbs may be modified in space to indicate predicative relations, it will be shown that the use of spatial modification on YSL verbs is far from systematic and obligatory. The findings to be reported in this study along with the recent findings on rural signing varieties show evidence for more variation in the spatial organization of sign language that has been previously assumed. YSL data analysis suggests that mature sign languages do not conceptualize signing space for grammatical purposes in similar ways (cf. Lillo-Martin & Meier, 2011).

9.2.2. Disagreements on agreement

Directionality is one of the most well-researched, yet controversial topics in sign language research. It has been the subject of extensive linguistic investigation and theorizing (Padden, 1988; Janis, 1995; Meir, 1998; Liddell, 2000; Rathmann & Mathur, 2002; Meier, 2002a; Aronoff, Meir, Padden, & Sandler, 2004; Thompson, 2006; Quadros & Quer, 2008; de Beuzeville, Johnston, & Schembri, 2009; Quer, 2010, 2011; Lillo-Martin & Meier, 2011; Pfau, Salzmann, & Steinbach, 2011; Schembri, 2012; Slobin, in press; among many others). Hence, there are many differing opinions around the analysis of this modality specific phenomenon. Fortunately, addressing the points of contention in directionality is beyond the scope of this study. This section, therefore, only summarizes some of the most polarized views.

The debate regarding directionality in sign languages happens between two extremes. On the one side the movement of the verbs in space is seen as a system of verb agreement wholly comparable to that found in the spoken languages verb agreement morphology (Padden, 1988). On the other side the
directionality of the sign is described as lacking any grammatical explanation (Slobin, in press). The two extremes pose a question of whether the spatial modifications should be considered as a grammatical and abstract system of verb inflection (Sandler & Lillo-Martin, 2006; Lillo-Martin & Meier, 2011) or a fusion of lexical and gestural elements (Liddell, 2000).

Simplifying somewhat the various accounts of directionality may be divided into two larger camps. The first group of researchers who mainly work within the generative framework advocates for an agreement analysis of directionality, i.e. a grammaticalized system of person agreement marking (Lillo-Martin & Meier, 2011 and many others cited above). The second group of scholars argue that spatially modified forms of lexical verbs are a “fusion of lexical morphemes and gestural elements that are not part of an inflectional system” (de Beuzeville, Johnston, & Schembri, 2009, p. 59; Liddell, 2000, 2011).

Within the agreement analysis, spatial modification of directional verbs such as the ISL verb show (cf. Figure 70, p. 197) are treated as “inflected forms that agree in person and number with subject and object” (Lillo-Martin & Meier, 2011, p. 96) (see previous section for an overview). Using Corbett’s (2006) terminology, Lillo-Martin & Meier (2011, p. 108) point to the agreement-like characteristics in sign languages, i.e. “the verb’s argument is the ‘controller’; the shared features include person (expressed through an R-locus) and number”. One of central issues in the analysis of agreement is the assumption that same person distinctions which hold for pronouns also hold for directional verbs, i.e. first vs. non-first person (for the first person reference, the signer points to the center of his/her torso; for the non-first person reference, the signer points to a person in the immediate physical context). Consequently, two agreement morphemes are proposed: one for the first person and the second one for non-first person, which is unspecified for locus. Through pointing to a location, an agreement verb is claimed to copy the index of its argument, which includes person and number features (Cormier et al., 1998, cited in Lillo-Martin, 2011). Another very important assumption is that signers point toward abstract locations (R-loci) for a reference to a non-present person or entity.

There are many challenges to the ‘agreement’ analysis, not only from the proponents of the fusional account of directionality (Liddell, 2000), but also from spoken language linguists (Corbett, 2006; Cysouw, 2011). From a typological perspective, there are a number of good reasons to consider directionality a “very atypical agreement” system (Cysouw, 2011). Only one class of verbs mark agreement in sign languages, while object agreement is
strongly favored over subject marking. In addition, some studies have questioned whether object agreement in sign languages is obligatory (Engberg-Pedersen, 1993; Johnston & Schembri, 2007; Quadros & Lillo-Martin, 2007). Recent corpus studies provide strong evidence for optional use of spatial modification in Auslan (de Beuzeville, Johnston, & Schembri, 2009) and BSL (Cormier, Fenlon, & Schembri, 2014). According to Corbett’s view (2006, cited in de Beuzeville, Johnston, & Schembri, 2009, p. 58) directionality “may not be best analyzed as an agreement system”, as the absense of parallel characteristics in spoken languages likely hinders analysis of sign language directionality as an agreement system. Cysouw (2011) highlights that directionality in sign language may be compared with only one type of spoken language agreement, namely agreement/inflection. He, therefore, concludes that “it might be better to use the more transparent name such as “inflectional person marking” instead of using the confusing term agreement for this aspect of sign language“ (ibid, p. 157).

As the main opponent of the ‘agreement’ analysis, Liddell (1990, 2000, 2011) adopts a ‘fusional’ analysis of directionality. He sees no reason for arguing that the verb agrees with its object by simply being directed toward the location of the referent. Liddell recognizes “no grammatical basis for an agreement analysis and no existing phonological system capable of implementing an agreement analysis” (2000, p. 312). Within the theory of Cognitive Linguistics, Liddell compares the indicating nature of the verb with the deictic gesture at the physically present entity. In case of the missing referents, according to Liddell, signers use the conceptual space inhabited by “surrogates”, imagined or conceptionally present referents. By pointing to “tokens” (and not to R-loci as argued in agreement analysis), signers refer to these imagined entities and let the addressee discern between entities and the semantic representations (Liddell, 2000, p. 319). This procedure of pointing within the constructed space has been elsewhere referred to as “quasi-deixis” (Prozorova/Прозорова, 2006; Kibrik & Prozorova, 2007). Arguing against the agreement analysis, Liddell proposes the term ‘indicating’ verbs, which gesturally indicate its arguments.

Liddell’s work and his views on the interface of gesture and language were very influential in the discussion of directionality in sign language linguistics. Many scholars have adopted Liddell’s insights (De Beuzeville, Johnston, & Schembri, 2009; Prozorova/Прозорова & Kibrik/Кибрик, 2006; Jantunen, 2008). Accounting for directionality, they began ascribing a greater role to gesture. In recent publications, this trend is particularly evident (Lillo-Martin, 2002; Rathmann & Mathur, 2002; 2008; 2011; Lillo-Martin & Meier, 2011;
Aronoff & Padden, 2011; Steinbach, 2011). While these scholars agree “that a combination of linguistic and gestural explanations is necessary to account for the observed forms of verbs”, they “do not take this as reason to reject the notion that verbs agree” (Lillo-Martin, 2002, p. 154). As Meier (2002a) states: “although the form of agreement may be gestural, the integration of these gestural elements into verbs is linguistically determined.”

9.3. Verb directionality in YSL

Section 9.2 of this study has shown that sign language research has come to a point as to expect a subclass of sign language verbs to be modified in space to encode grammatical arguments and their syntactic roles (Lillo-Martin & Meier, 2011). Spatially modified verbs marking agreement have been described as very common in many DCSLs and were thus considered universal feature of sign languages. This section analyzes the actual production of YSL verb forms where space is used or expected to be used for the grammatical purposes. The main purpose is to see whether YSL conceptualizes space comparably to the described DCSLs. There are four questions to be addressed in this section: 1) can some YSL verbs be identified as spatially modifiable? 2) Is spatial modification obligatory in YSL? 3) Within this category can a distinction be made between verbs that mark for person and number of the subject and/or object (usually referred to as ‘agreement’ verbs in the sign language literature) and those that do not (usually referred to as ‘spatial’ verbs)? And finally, 4) can the former group of verbs that mark for person and number be seen as a highly developed grammaticalized system of person marking in YSL?

9.3.1. YSL verb classes: plain vs. non-plain

On first viewing the YSL data, one notices the demarcation between two groups of verbs. The first group includes YSL verbs such as BATHA ‘cook’, DÄTHI ‘cry’, DJÄMA ‘work’, BARRARI ‘fear/frighten’, LUKA ‘eat/drink/ingest’ and others (see Figure 72 for examples). These verbs are not able to undergo any spatial modification. Their movement and hand orientation remain invariant during the articulation. They are usually body-anchored, i.e. specified for a location on the body of the signer (cf. Figure 72).
In the second group, the movement, the beginning and endpoint of the verbs appear to be modified meaningfully. In particular, these verbs may be moved in space to indicate referents and locations, produced differently from their citation forms. Consistent with traditional practice, the group of verbs without spatial modification is called here *plain* verbs (Padden, 1988). The second group may be referred to as *non-plain*. Thus, the first research question can be answered by stating that some YSL verbs can be meaningfully modified in space.

To account for the frequency of spatial modification on verbs, each verb was tagged to indicate presence or absence of spatial modification within the TAG-tier (see 4.4 for more information about the annotation methods). The categorization convention of spatial modification of all verb tokens (occurrences) used in a recently published study of Auslan verbs was found very suitable. De Beuzeville, Johnston, & Schembri (2009) make a distinction between modified, non-modified and what they call ‘congruent’ verbs. As the YSL verbs appear to fit into these categories, I adopt their categorization structure for the purposes of this research. Following De Beuzeville, Johnston, & Schembri (2009), verbs were identified as congruent, when they did not differ from their citation form with regard to directional movement, but they were congruent with the spatial arrangements of locations present in the signing context. Therefore, an annotator unfamiliar with the conducted elicitation sessions for this study, would not recognize these verb forms as modified. An example of a congruent verb is given in Figure 73. In this example a verb GURRUPA ‘to give’ is identical with its citation form, in which the hand-shaped hand moves outward from the place near the signer’s chest toward the place near the referent. In this signing context, the sign with the meaning ‘I give you’ is directed from the signer to the interlocuter, who
was standing in front of the signer and is not present in the video. The spatial
directional movement of this verb is identical with the citation form. At the
same time, however, this verb can be considered congruent with the pattern
of spatial reference in this context.

Figure 73. A “congruent” verb GURRUPA ‘to give’

Such congruent tokens appear fairly infrequently in the dataset accounting
for 2% of all tokens (cf. Figure 74). In the following, congruent verbs will
be treated as modified as they bear little statistical significance (cf. De
Beuzeville, Johnston, & Schembri, 2009).

In total, 787 verb tokens were counted from the elicited and spontaneous
YSL data. Figure 74 shows a distribution of all of the verb tokens identi-
fied. 74% (n=580) were spatially unmodified, while all spatially modified
verbs were relatively infrequent in the corpus taking up the remaining 26%
(n=207) (all modified verbs forms were totaled up in this case).

Figure 74. Relative frequency of verbs types in the YSL data (n=787)
The remaining portion of the section focuses on the second group of the YSL verbs (26% or 207 verbs in Figure 74) that exploit space and exhibit some meaningful spatial directional movement. The plain verbs will not be a part of this discussion; rather, spatially modified verbs will be of primary interest. Spatially modified verbs are further analyzed in order to answer the second and third questions stated at the onset: 2) is spatial modification obligatory in YSL and 3) can a distinction be made between verbs that mark for person and number of the subject and/or object (referred to here as directional verbs) or those that do not (referred to here as spatial verbs). I start with the latter group in the next subsection.

9.3.1.1. Frequency of spatial modification in non-plain verbs

Of all spatially modified verbs (26%) identified in the dataset, the majority encode locations (20%, n=158). These verbs are generally referred to as spatial verbs in the literature (Sandler & Lillo-Martin, 2006) (cf. Figure 74). YSL examples are, for instance, the “directional” (Nyst, 2007) with the meaning ‘go over there’ as shown in (13), the verb EXIST as shown in (11), the verb ĐURRKA ‘to throw’ and MĂRRA ‘to take/get’ as presented in (12), which all indicate the location and/or the movement of an entity from one location to another.

(10) GUYA RĀKU IX₃a BOAT DIR-GO-THERE₃a DARRA DIR-GO-THERE₃a
    fish to fish there boat go-there 1SG go-there
‘I am going fishing on the boat over there’.

Sequence14_19JUL_2010.mpg

(11) IX.PRO₃a EXIST₃a
    3SG lying-there
‘It is lying over there’

Sequence08_G sentences_2009.mpg
Adopting the term proposed by Nyst (2007, p. 173), two YSL verbs expressing the direction of movement are called here “directionals” and glossed as DIR-GO-THERE and DIR-COME-HERE. As can be seen in (10) and (13), the directional DIR-GO-THERE is modulated with respect to the source and goal location of the movement. The two directionals can be spatially modified towards a geographic location to express directional motion in YSL. The difference between the two directionals found in the YSL data DIR-GO-THERE and DIR-COME-HERE and their usages will be discussed in section 10.3.1.

These YSL spatial verbs are spatially modulated such that the verbs move and/or are oriented towards the actual locations in the real world. That is, in (10) the signer is talking about going fishing and points first with a locative index toward the ocean. Subsequently, the directional sign DIR-GO-THERE with the meaning ‘to go to A’ starts its movement near the signer’s chest and its end location is the geographical location of the ocean. In (11) the verb EXIST is modified in the way that it changes its end location, which is directed
toward the physically present object in the signing context. Similarly in (12), the signer first points to the location of the shop and afterwards the verb starts its movement at this location and ends near the signer.

As the previous section has shown, YSL signers appear reluctant to use metaphorical pointing in signing space for pronominal reference. In the same way, YSL signers strongly prefer to move and/or orient the verbs in space to indicate the actual locations. They never establish any set-up locations in signing space as a spatial mapping often found in DCSLs such as ASL, DGS or other European and Asian sign languages. Spatial verbs were usually directed with respect to the geographical locus of an object or subject. For example in (14), the directional DIR-GO-THERE with the meaning ‘go’ is pointed in the direction of the church, which is not visible in the context of signing.

(14) DARRA  
1SG  
DIR-GO-THERE$_{3a}$  
go (church)  
SASS$_{RECTANGUAL}$  
church  
[YSL]  
'I go to the church.'  
Sequence09_14JUL_L_2010.mpg

In many cases, the spatial movement toward a location can remain unspecified. In these forms, YSL signers do not vary the axis of the directional movement from that of the citation form, which is usually a straight outward movement from the body.

Some spatial verbs may change location to indicate the affected body part. Consider, for instance, the verb RIRRIKTHU ‘to be sick/to hurt’ which is signed with the handshape on the chest of the signer in its citation form (cf. Figure 75).

Figure 75. YSL verb RIRRIKTHU ‘to be sick/to hurt’
The sign may however incorporate a body part, such as a stomach or a head, to denote the meaning ‘to have a headache’ or ‘to have a stomachache’ (cf. Figure 76). Such verbs have been labeled elsewhere as body locating signs (Johnston, 1989).

![Rirrikthu](image)

**Figure 76.** Modified verb Rirrikthu ‘to be sick/ill’

The spatial modification on the verbs indicating locations and movement of object or subject does not appear to be obligatory in YSL. A closer look at the most frequent verbs, Dir-go-there, Exist and Rirrikthu ‘to be sick/to hurt’ that were spatially modified indicating locations and movement supports this claim. An analysis of the frequency of spatial modification in these three verb types reveals that only a quarter to a third of all tokens were modified in space (cf. Figure 77).

![Frequency of spatial modification](image)

**Figure 77.** Frequency of spatial modification in spatial verb
As can be seen in Figure 77, only 35% (n=47) of all the occurrences (n=133) of the directional DIR-GO-THERE were modified. The majority of all tokens (65%, n=86) were clearly not spatially modified. Likewise, out of 53 occurrences of the verb EXIST 16 or 30% were spatially modified, indicating that spatial modification is far from obligatory in YSL.

Similar results are revealed for another group of verbs, which would be considered agreeing in Padden’s (1988) terms. I prefer the term ‘directional verbs’ (see next section), which may be considered neutral with regard to their grammatical analysis. As can be seen in Figure 74, of all 787 verb tokens coded, only 49 or 6% of verbs moved and/or were oriented towards a location associated with a referent. The six verb types that were identified as directional verbs, i.e. spatially modified verbs with regard to person are: LAKARA ‘to tell/speak/say’, NHÄMA ‘to see’, MÄRRA ‘to get/bring’, GURRUPA ‘to give’, BITJA ‘to take a picture’ and RIRRIKTHU ‘to make sick/to kill’ as in Figure 80 below.

To analyze the frequency of spatial modification within the YSL transitive predicates indicating a referent, each verb token was tagged for presence or absence of spatial modification in the data corpus. A closer look at the top three frequent verbs\(^\text{114}\) (LAKARA ‘to tell/speak/say’, NHÄMA ‘to see’ and GURRUPA ‘to give’) accounting for 80% of the verb tokens indicating person reveals a similar picture presented above for the spatial verbs.

![Figure 78. Frequency of spatial modification in directional verbs](image-url)
As can be seen in Figure 78, the verbs’ frequency of spatial modification fluctuates slightly in the dataset (21% – 40%). In sum, considerably less than half of all verb tokens in the three verb types appear to be spatially modified in the data. In other words, the majority of verb tokens remain unmodified in the YSL data. Example (15) and Figure 79 illustrate the lack of spatial modification in the case of verb GURRUPA ‘to give’.

(15) DARRA YAPA GURRUPA RRUPIYA [YSL]
s1g sister give money
‘My sister gave me ten dollars.’

In (15) the verb’s final point could be modified to indicate the location associated with the referent, the object. Still the sign in (15), which is depicted in Figure 79, was not directed towards the signer, who represents the object in this case. Instead, the verb form is articulated in its citation form with a movement away from the signer’s body as shown in Figure 79. De Vos (2012, p. 129) makes a similar observation for the KK verb GIVE, which is produced with an outward direction even when the object is the first person.

Figure 79. Spatially unmodified verb GURRUPA ‘to give’

So far, the second question stated at the onset with regard to obligatoriness of spatial modification in a subclass of verbs can be answered. The YSL data reveal that the occurrence of spatial modification in its verbs is clearly optional. This is suggested by the low rate of spatial modification of verb
types. Only 21% to 40% of verb tokens were spatially modified in the data set, which holds true for other verbs, further validating the claim.

9.3.1.2. Directional verbs

In order to answer the third question (whether the distinction can be made between directional and spatial verbs) further analysis of spatially modified verbs appears to be necessary. Previous reports have shown that spatial modification marks verb argument (subject, object or locative). In the agreement analysis (see 9.2.2 for more information on various accounts of directionality) agreement verbs thus agree with their argument in person and number. Further, the question arises whether YSL verbs also mark verb arguments (subject, object or locative) and agree in person and number.

In (16)–(18) the verbs are moving through space, change their orientation toward and end their movement near a location of the present referent (cf. Figure 80). An interesting observation is that the signers strongly favor straight path movement, i.e. the movement either center–out or center-in. In other words, no shifting of the movement from side to side was observed, which is typically found in agreement verbs of many DCSLs to denote something like ‘he told him’.

Figure 80. Spatially modified verb RIRRIKTHU ‘to make sick/to kill’

(16) DARRA MUKUL-RUMARU [YSL] LAKARA₃
tell-her
1sg mother’s brother’s wife ‘I am your mother’s brother’s wife. Tell her this.’

Sequence16_21JUL_I_2010.mpg
While the examples in (16)–(18) can be considered as instances of object marking, no subject marking has been observed. These and other verbs indicating a referent are clearly never specified for subject overtly in the dataset as reported for other sign languages (see for example Schuit, Baker, & Pfau, 2011). YSL directional verbs never begin articulation at different locations in the signing space. Rather the verbs lakara ‘to tell/speak/say’, nhäma ‘to see’, märra ‘to get/bring’, gurrupa ‘to give’, bitja ‘to take a picture’ and rirrikthu ‘to make sick/to kill’ always start their movement near the body of the signer (i.e. signer’s tongue in case of the verb LAKARA ‘to tell’), whereby the signer is not the subject of the clause. In the YSL data collected so far, subject is never specified on verbs (see Meir, Padden, Aronoff, & Sandler (2007) for the proposal of treatment of such cases).

The six YSL verbs lakara ‘to tell/speak/say’, nhäma ‘to see’, märra ‘to get/bring’, gurrupa ‘to give’, bitja ‘to take a picture’ and RIRRIKTHU ‘to make sick/to kill’ can be spatially modified to indicate physically present referents. For example, the hand in the verb gurrupa ‘give’ can move from a location in front of the signer to the location of the addressee to mean ‘I give you’ as shown in (19). Note that despite directionality of the verb identifying the participants, i.e. the arguments of the verb, both the subject and the indirect object are referred to explicitly in (19).

(19) WAKU 2SG DARRE1 1SG thin-object GURUPA2 RRUPIYA [YSL]
    ‘I’ll give you the money, my son.’

In instances when referents are absent from the immediate vicinity, five YSL verbs (NHÄMA ‘to see’, MÄRRÁ ‘to get/bring’, GURUPA ‘to give’, BITJA ‘to take a picture’ and RIRRIKTHU ‘to make sick/to kill’) tend to occur spatially unmodified in sampled YSL data. As mentioned previously in this chapter,
no arbitrary locations in the signing space are associated with non-present referents in YSL. When talking about non-present referents, these five YSL verbs are signed in the citation form without being spatially modified in most of observed cases. Within the group of directional verbs presented here, there is only one verb, which appeared spatially modified in the dataset indicating physically absent referents. It is the verb LAKARA ‘to tell/speak/say’. This verb can be modulated such that it moves toward a real-world location (such as a house) associated with this referent (see YSL example in (20)). Similar occurrences of spatial sign modulations referring to actual (even distant) locations have been termed elsewhere as “long distance agreement” (Schuit, 2010).

(20) DARRA RIDIMAP PHONE IX.PRO\textsubscript{3a} \text{LAKARA}\textsubscript{3a} \text{dir-from} \text{1sg} call phone \text{3sg} \text{tell-him} \text{come-here}

‘I will call him and tell him to come here’.

Sequence12_15JUL_L_2010.mpg

Figure 81. Spatially modified verb LAKARA for a non-present referent

Why the verb LAKARA ‘to tell/speak/say’ appears to be an exception might be explained by its high frequency in the data. As can be seen in (20) and Figure 81, the verb LAKARA ‘to tell/speak/say’ starts its movement by touching the signer’s tongue and is directed towards the place, where the referent lives (for a similar example of the metonymic pointing in YSL pronominal signs see chapter 8). In many DCSLs, this kind of structure would be typically executed by movement to an established R-locus for a third person in the signing space in front of the signer. These cases are then interpreted as ‘verb agreement’ (Lillo-Martin & Meier, 2011) (see 9.2.2 for the discussion). In
YSL, verbs do not move to previously established locations (R-loci) in the signing space, which correspond to any non-present person. The directionality of the YSL verb LAKARA ‘to tell’ does not depend on the arbitrary established loci in articulatory signing space as it is usually the case in DCSLs. The directionality of this YSL verb is determined instead by the actual locations of actual referents in the real world.

9.3.1.3. Absence of number marking

A sweeping arc movement at the end point of certain verbs demonstrates number inflection in many well-documented DCSLs (see section 9). The YSL data analysis does not reveal such spatial modification or other alternations like reduplication to indicate the number of referents.

In case of multiple referents, no sweeping arc movement is found in the YSL data. The verb is repeated and directed toward each of the referents as shown in Figure 82, in which the verb GURUPA ‘to give’ is shown.

Figure 82. The YSL verb GURUPA ‘give’

The verb form in Figure 82 cannot be regarded as instance of morphological process of reduplication, because there is distinct pause in sign production. The verb is first directed towards one present referent, and after a pause, it is redirected towards another referent with a meaning ‘I give you and I give you’. Based on these findings, it may be concluded that YSL does not have
a number category in its verb system (but see the previous chapter for a different finding with regard to YSL pronominal signs).

9.3.1.4. Optional object or location marking on YSL verbs

To summarize the results of this section and to answer the questions a) whether a distinction can be made between verbs that mark for person and number of the subject and/or object (usually referred to as ‘agreement’ verbs in the sign language literature) or those that do not (usually referred to as ‘spatial’ verbs); and, b) whether the former group of verbs that mark for person and number can be seen as a highly developed grammaticalized system of person marking in YSL, the following can be said.

The distinction between the two classes of YSL verbs, referred to here as directional (‘agreement’ in Padden’s terms) and spatial, can only be made based on semantics: directional verbs denote transfer, whereas spatial verbs denote location and/or motion of the entity in space (Meir, 2002). It remains difficult to maintain a clear grammatical distinction between these YSL verbs despite established semantics on the following grounds. First, it was shown that both verb classes are quite similar in that they may be directed to actual physical locations. Even in case of non-present referents, the verb is directed to the real-world location associated with the referent, for example a house. The system of these verbs is based on directing them at physically present entities or the real-world locations such as their houses. This leads to the second issue. As no abstract referential loci required for the agreement analysis are established, both verb classes do not use syntactic space and thus do not appear to differ in their use of space. Thirdly, the spatial modification on YSL verbs appears to be an optional system for marking objects or locative arguments of the verb, and not the subject. Finally, based on the collected data, YSL verbs are not modified to mark number.

9.4. Constituent order in transitive clauses

The above sections showed that unlike other sign languages, YSL lacks abstract loci in the neutral signing space for person reference and makes limited use of spatial verb modifications to mark core arguments of the verb. Given this notably limited use of spatial morphology in YSL, it is essential to consider here whether YSL has a rigid syntactic structure, e.g. in the identification of the subject and object of a transitive clause.
Section 9.3.1.4 of this study revealed that YSL makes little use of the verb directionality system to encode the relations between a verb and its arguments. Instead, the spatial modification on YSL verbs appears to be used as an optional object marking. In the absence of systematical spatial modification of verbs to encode grammatical relations, the question arises here whether constituent ordering of signs is used to mark subject and object in YSL. This section reports on the ordering of signs (cf. word order) within the YSL transitive verb sentences and phrases containing more than one argument\textsuperscript{117}. It will be shown, that YSL may rely on the SVO order in the identification of the verb arguments in a transitive clause.

Word order is cross-linguistically regarded as a mechanism to disambiguate a message linguistically, in addition to other means, such as accentuating the subject noun phrase or the context and real world knowledge. Word order is a well-studied grammatical feature in signed languages (Fischer, 1975; Friedman, 1976; Liddell, 1980; Padden, 1990). However, the issue of determining the basic word order continues to be a challenge in the sign language research, as many factors can influence the constituent order of signs (Kimmelman, 2011; Leeson & Saeed, 2012).

### 9.4.1. YSL constituent order

Generalizations around the constituent order in YSL transitive verb phrases made on the basis of the presently available data can only be preliminary and should be subject to a more detailed exploration at a later stage. Not all arguments were represented overtly in sentences with several participants in the collected YSL data. The agent was very often omitted and assumed to be understood through the context, culture or the real world knowledge. In the data described below, both arguments were expressed overtly. Figure 83 presents overall results and reveals that YSL seems to favor the SVO word order within transitive clauses (47% of all ordering patterns). Additionally, the counts were made with regard to the position of the verb. Out of 211 YSL transitive verb phrases, 84 or 40% were verb-final and 127 or 60% were non-verb final (cf. Figure 83).

From this survey of constituent order in YSL it appears, as illustrated by Figure 83, that the core arguments of a transitive verb phrase seem to be marked syntactically by the SVO word order in almost the half of all clauses (n=211) as shown in examples (21)–(22).

\textsuperscript{117} YSL transitive verb phrases containing more than one argument
Constituent order in transitive clauses

Figure 83. Frequency of word order in YSL transitive sentences (n=211)

<table>
<thead>
<tr>
<th>Word Order</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVO</td>
<td>47%</td>
</tr>
<tr>
<td>OSV</td>
<td>4%</td>
</tr>
<tr>
<td>OV</td>
<td>9%</td>
</tr>
<tr>
<td>OV S</td>
<td>10%</td>
</tr>
<tr>
<td>SV</td>
<td>10%</td>
</tr>
<tr>
<td>VO</td>
<td>10%</td>
</tr>
<tr>
<td>VSO</td>
<td>1%</td>
</tr>
<tr>
<td>OVS</td>
<td>1%</td>
</tr>
<tr>
<td>SVO</td>
<td>18%</td>
</tr>
</tbody>
</table>

18% of all transitive clauses had a SOV order as can be illustrated by (23)–(24) below.

(21) MĀRI GURRUPA WALU YOTHU
   mother’s mother give watch child
   ‘The grandmother gives the watch to the child’.
   Sequence09_G_D_classifier_stimuli_2009.mpg

(22) BARPURU DARRA NHĀMA MĀRRMA MIYALK MĀRRMA
   yesterday 1SG see two women two
   ‘I have seen two women yesterday.’
   Sequence15_19JUL_L_2010.mpg

(23) DĀNDI DĀTHA GURRUPA YOTHU
   mother food give child
   ‘The mother is feeding the child.’
   Sequence08_13JUL_E2_2010.mpg

(24) YOTHU DĀNDI GURRUPA
   child mother give
   ‘The child is feeding the mother.’
   Sequence08_13JUL_E2_2010.mpg
Given that only a small amount of data could be analyzed with regard to word order, due to the omission of the overt arguments, it remains too early to claim that the underlying hierarchical phrasal structure in YSL is SVO. It can merely be shown according to the survey that constituent order in YSL transitive clauses is SVO in 47% of all cases. Hence, it may be seen as a cue to resolve the ‘who is doing what to whom’ issue in YSL.

The findings of this study support previous evidence for the prevalence of SVO order in YSL verb phrases. Cooke & Adone (1994, p. 8) analyzing 50 transitive and nontransitive sentences suggested the order subject – verb – object as the sign order that disambiguates the YSL utterances.

### 9.4.2. Djambarrpuyŋu constituent order

Given that YSL is predominantly used by the hearing signers, it is worth investigating whether the core arguments of the verb in YSL are ordered in the same way they are structured in the surrounding spoken language. To see whether the surrounding spoken language influences the sign order in YSL, two studies on word order in Djambarrpuyŋu were considered.

Djambarrpuyŋu, similar to many other Australian languages, does not seem to have a strict word order, which can be taken as a device for coding intra-clausal relations (Dixon, 2002). According to Tchekhoff and Zorc “word order is not relevant for the indication of NP functions” in Djambarrpuyŋu. Nevertheless, they suggest that the unmarked or “normal unemphasized” word order in Djambarrpuyŋu is SVO, as shown in (25) (Tchekhoff & Zorc, 1983, p. 851).

\[(25) \text{Dirramu-} y \ nhäŋal \ garrtjambal \ [Djambarrpuyŋu] \]
\[
\text{man} \quad \text{erg} \quad \text{see} \quad \text{kangaroo}
\]

‘The man saw a/the kangaroo.’

Additionally, Tchekhoff and Zorc (1983, p. 852) claim, that in case of a pronominal object, the word order switches to SOV, as shown in (26).

\[(26) \text{Dirramu-} y \ ŋarra– ny \ nhäŋal \ [Djambarrpuyŋu] \]
\[
\text{man} \quad \text{erg} \quad \text{I} \quad \text{acc} \quad \text{see}
\]

‘The man saw me.’
Unlike Tchekhoff and Zorc (1983), a study conducted by Wilkinson (1991) suggests a slightly different ordering pattern for Djambarrpuyŋu. Wilkinson demonstrates, on the basis of the Djambarrpuyŋu corpus consisting of four texts and elicited utterances, that the predominant word order in Djambarrpuyŋu is SOV independent of the occurrence of a pronominal object, as shown in (27).

(27) Yolŋu-y warrakan’- nha nhä-ŋal dharpa- lil
   person-ERG animal-ACC see-3SG tree LOC/ABL
   ‘The person saw a bird in a tree’.

(Wilkinson, 1991, p. 598)

Overall, the suggested word orders for Djambarrpuyŋu vary according to the study from verb final SOV to non-verb final SVO. It remains unclear whether the Djambarrpuyŋu word order has an impact on the ordering of YSL clauses or not.

9.4.3. Discussion

Observation in the Yolngu data with regard to word order reveals that the majority of clauses contain one argument per verb, with the argument preceding the verb. Considering the frequency of order of all constituents as shown in Figure 83, the following generalization might be made.

- in clauses with more than one argument, the subject usually precedes the object;

Summing up the findings of this section, a predominant SVO word order was observed in 47% of all responses. This could be attributable to the word order of the ambient spoken language, which is SVO according to Tchekhoff & Zorc (1983). For the analysis of word order all collected YSL data was considered including the signing of both deaf and hearing signers.

Analysis presented here demonstrates a common tendency of leading utterances with a subject. Thus, it may be concluded that YSL disambiguates sentences by placing the subject first in clauses with more than one argument, when possible ambiguities arise that cannot be understood solely by semantics (such as when both participants can be either subject or object, as in A tells B).
9.5. Summary

Based on the above findings, I conclude that the boundary between verb classes in YSL, previously referred to as directional and spatial in the text, is not clear-cut. That is, all verbs that appear to be directional on the surface could as well be analyzed as spatial verbs. Therefore, this chapter distinguished between two major verb classes in YSL: plain (non-modified) and non-plain (spatially modified) verbs\textsuperscript{119}. The latter class of non-plain verbs may be modified depending on the semantics of the verb and take optional object or location marking (cf. Table 10).

Table 10. Classification of verbs in YSL

<table>
<thead>
<tr>
<th>Plain (non-modified) verbs</th>
<th>Non-plain (spatially modified) verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples:</td>
<td>Optional object marking:</td>
</tr>
<tr>
<td>LUPTHU ‘to shower’</td>
<td>LAKARA ‘to tell’</td>
</tr>
<tr>
<td>DJÄMA ‘to work’</td>
<td>GURRUPA ‘to give’</td>
</tr>
<tr>
<td>BATHAN ‘to cook’</td>
<td>Optional location marking:</td>
</tr>
<tr>
<td></td>
<td>DIR-GO-THERE ‘to go to A’</td>
</tr>
<tr>
<td></td>
<td>EXIST</td>
</tr>
</tbody>
</table>

The fourth question stated at the onset of section 9.3 queries whether the spatial modifications on directional verbs can be considered a highly grammaticalized system of verb agreement in YSL. Regardless of how appealing the agreement analysis of directionality might be, its central claim that the movement of directional verbs is controlled by the abstract R-loci does not appear to hold true in YSL. Instead, YSL data display a topographic directionality, where beginning and end points of the verbs are controlled by the real location of the referents (even in case of non-present referents). Moreover, the use of spatial modification on YSL verbs to mark objects appears to be optional occurring in as little as 21% of all tokens in the verb NHÄMA ‘to see’. Having conducted frequency counts for all verb tokens in the data, the overall rate of spatial modification on verbs was quite low (see also De Beuzeville, Johnston, & Schembri, 2009; Schuit, 2013; Cormier, Fenlon, & Schembri, 2014). They often occurred without establishment of spatial reference. Additionally, no marking of multiple referents on YSL verbs has been observed which contrasts with previous reports on many DCSLs such as DGS (cf. Mathur & Rathmann, 2006). Thus, it appears from the YSL data collected so far that the spatial modification of verbs cannot be considered a highly grammaticalized system of agreement marking, in which verbs agree...
in traditional features of person and number. It is more accurately characterized as an optional system of object and location marking.

Since YSL makes extremely little use of spatial marking on transitive verbs, it was important to explore here whether it possesses another reliable cue, such as the basic word order, to mark the subject and object in transitive clauses. Section 9.4 presented the results of my analysis of YSL data with respect to constituent order. The data revealed that the most frequent word order was SVO, marking almost half of all transitive constructions in the YSL data corpus (47%), which might be regarded an instance of the surrounding spoken language influence. Moreover, in section 9.4 it was concluded that the position of the subject is pre-verbal in YSL, since the subject preceded the predicate in all of the cases.