Signs of the arctic: Typological aspects of Inuit Sign Language

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4. Predicates in IUR: verb agreement and classifiers

The present chapter deals with aspects of verbal inflection in IUR, specifically verb agreement and verbal classifiers. Interestingly, in spoken languages only few universals or general tendencies related to these two aspects have been identified. Turning to sign languages, however, it is clear that those sign languages that have been studied display strikingly similar features in these two domains.

This chapter deals first with verb agreement (section 4.1) and then with classifiers (section 4.2). In both sections, general information about agreement and classifiers in spoken languages precedes the discussion of sign languages in order to provide a general background (sections 4.1.1 and 4.2.1, respectively). Secondly, the realisation of both these aspects across sign languages is reviewed (sections 4.1.2 and 4.2.2). Finally, the relevant data from IUR is presented (sections 4.1.3 and 4.2.3). The verbal inflection system of Inuktitut is not described since neither the agreement nor the classifier system (if present) of the surrounding spoken language has been shown to influence verbal inflection in any sign language.

4.1. Verb agreement

4.1.1. Agreement in spoken languages

A grammatical phenomenon that has been studied extensively for spoken languages is verbal agreement, and interesting typological variation has been found. First, languages which display verbal agreement have to be distinguished from languages in which verbs do not agree (null agreement languages) such as Chinese. Secondly, within the former group, there are, on the one hand, languages with a poor agreement system, as in many Germanic languages, such as Dutch. On the other hand, there are languages with a rich agreement system, as in many Romance languages like e.g. Spanish. The difference between the two types of languages is illustrated in Table 4.1. Note that every feature combination (person and number) is spelled out by a different phonological form in Spanish in contrast to Dutch.

Languages with rich agreement, such as Spanish, commonly allow pro-drop: the pronominal subject can be dropped as “the information can be determined by the agreement morphology on the verb” (Whaley 1997:289). However, pro-drop may also be observed in languages without agreement, such as, for example, Chinese (see Lillo-Martin (1986) for a discussion and comparison to ASL).

18 Parts of this chapter appeared earlier in Schuit, Baker and Pfau (2011).
Table 4.1: Example of rich and poor agreement systems: Paradigm for the verb ‘to stroll’ in Dutch (wandelen) and Spanish (caminar).

<table>
<thead>
<tr>
<th></th>
<th>Dutch</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>wandel-ø</td>
<td>camin-ø</td>
</tr>
<tr>
<td>2SG</td>
<td>wandel-t</td>
<td>camin-as</td>
</tr>
<tr>
<td>3SG</td>
<td></td>
<td>camin-a</td>
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<tr>
<td>1PL</td>
<td></td>
<td>camin-amos</td>
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<td>2PL</td>
<td>wandel-en</td>
<td>camin-áis</td>
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<tr>
<td>3PL</td>
<td></td>
<td>camin-en</td>
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</table>

So far, only subject agreement has been taken into account. However, in addition to subject agreement – and independent of their classification as a poor or rich agreement language – some languages also display verbal agreement with the object, although these are much less common (Whaley 1997). In Itelmen, a language of the Chukotko-Kamchatkan family spoken in Russia, for instance, the verb agrees with its first person singular direct object by means of the suffix –um, as can be seen in (1).

(1)  N-älɬqu-z-um
     3PL-see-PRES-1SG.O
     ‘They see me.’ (Bobaljik & Wurmbrand 2002:5)

Agreement typically operates according to a hierarchy of relations (Whaley 1997:153). If the verb of a certain language agrees with only one of its nominal arguments, this will typically be the subject. If it agrees with two arguments, these will be the subject and the direct object. In the rare cases of languages in which the verb agrees with three arguments, the third argument it agrees with is the indirect object. The agreement hierarchy given in Figure 4.1 predicts this implicational pattern (Whaley 1997).

subject > direct object > indirect object > other

Figure 4.1: The agreement hierarchy (Whaley 1997:154).

4.1.2. Agreement in sign languages

In sign languages, agreement inflection is usually realised manually in signing space. Signers localise referents in the signing space, usually by means of pointing or index signs.

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19 The phenomenon that is referred to as ‘verb agreement’ is interpreted in different ways in the analysis of sign languages. Liddell (2000) argues that the relevant modulations are not linguistic but gestural. Many researchers argue, however, for the linguistic status of verb agreement (Aronoff et al. 2000, 2005; Lillo-
which identify locations in signing space. Index signs may occur before, after, before and after, or simultaneously with the referent that is localised. These established locations (or the actual physical location of referents present in the discourse) may then be used in pronominalisation and verb agreement. To that end, the signing space is usually divided into ‘sections’ analogous to the grammatical category of person in spoken languages. When functioning as a pronoun, pointing to the signer reflects first person, pointing to the addressee second person, and towards any other location in signing space third person (Figure 4.2). Similarly, the movement and/or orientation of some verbs can be modulated such that the beginning and end point of the movement (and/or the orientation of the palm and fingers) coincide with previously established locations, thereby expressing agreement with the subject and direct or indirect object. The NGT verb \textit{VISIT}, for instance, when describing a movement trajectory from location 3a to 1, would be interpreted as ‘s/he visits me’. In the gloss this is represented as $3_a \text{VISIT}_1$.

![Figure 4.2: Locations of grammatical person in signing space. Signing space seen from above, and indicated by the dotted line.](image)

In (2), two pairs of sentences are given that differ only in the agreement features expressed on the verb. In (2.a), \textit{MAN} is the subject, in (2.b) it is the object, but the difference in grammatical role is only indicated by agreement marking on \textit{TEASE}. Also in (2.c) and (2.d), it is the form of the verb \textit{CALL} that expresses which argument is the subject and which is the object. Note that (2.c) is far more common than (2.d), as NGT is an SOV language.

(2) \hspace{1cm} a. MAN INDEX$_3$ $\_3$TEASE$_1$  
\hspace{2cm} ‘The man teases me.’  
\hspace{1cm} b. MAN INDEX$_3$ $\_1$TEASE$_3$  
\hspace{2cm} ‘I tease the man.’

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Martin 2002; Rathmann & Mathur 2002; Lillo-Martin & Meier 2011, and the commentaries to this article). This view is adopted here. Within the linguistic approach, there are researchers who analyse verb agreement as an affixational process (\textit{inter alia} Meir 1998; Aarons, Bahan, Kegl & Neidle 1992), whereas others analyse it as a stem-internal change (\textit{inter alia} Mathur 2000; Rathmann & Mathur 2002; Aronoff, Meir & Sandler 2005). For this research, the analytical path is of little importance, and therefore this discussion is not pursued.
c. MOTHER INDEX\textsubscript{3a} SON INDEX\textsubscript{3b} 3aCALL\textsubscript{3b}  
   ‘The mother calls her son.’  
d. MOTHER INDEX\textsubscript{3a} SON INDEX\textsubscript{3b} 3bCALL\textsubscript{3a}  
   ‘The son calls his mother.’

Note that in the following, the subscripts 3a and 3b are only used in sentences where two third person arguments are referred to. If only one third person argument is mentioned, the subscript 3 is used. Also note that the actual locations of 3a and 3b in signing space are not structurally to the left (for 3a) and to the right (for 3b). Similarly, subscript 3 may be to the left or to the right; for the interpretation and translation of most sentences, the actual location is irrelevant.

Verb agreement in the form described above has been attested in many sign languages from all around the world, for example in Japanese SL (Fischer 1996), South African SL (Foreman, Penn & Reagan 1994), LSB and LSC (Quadros & Quer 2008). However, there are also several sign languages in which no, or only a few, verbs can be modified to show agreement. In Kata Kolok, a sign language from Bali, for instance, the only verb that is spatially inflected with some regularity is the verb BAANG ‘give’ (Marsaja 2008). AdaSL also shows an infrequent use of verb agreement; only a few verbs can be directed towards or away from the signer (Nyst 2007).

In addition, some sign languages are described as having a form of non-manual verb agreement. Bahan (1996) described this for ASL transitive verbs. He observed a head tilt in the direction of the subject’s locus, while the eyes gazed systematically in the direction of the object’s locus. Similarly, Neidle et al. (2000) claim that all ASL verbs may show syntactic agreement for subject and object – be it realised manually and/or non-manually. Thompson, Emmorey and Kluender (2006), however, challenged these claims based on an eye-tracking study which yielded inconsistent results with respect to eye gaze. Sandler and Lillo-Martin (2006) also describe complications with respect to this analysis, based on, for instance, physical restrictions. Gazing towards a first person object, for example, is not possible. This form of agreement has not been widely studied, and has only been described for ASL and LSB (Quadros 2003). Since this is the first study of IUR verbs, I focus on manual agreement. A brief look at non-manual behaviour suggested that non-manual agreement is not attested in IUR, but an in-depth study might reveal some evidence for this possibility.

It is important to note that, even in those sign languages that make relatively frequent use of agreement verbs, not all verbs inflect. In analysing ASL, Padden (1988) refers to the class of non-agreeing verbs as ‘plain verbs’. These verbs cannot be modified in the way described above to express agreement with their arguments, mainly due to phonological restrictions. These restrictions entail the specification of the location and/or movement parameter of the sign. For instance, the NGT sign LOVE cannot agree with an argument as the location of the sign is on the chest, i.e. it is body-anchored. Note, however, that the NGT verb PHONE, which, in its citation form, is specified for a location on the side of the head, can agree with both arguments. It is likely that the verb PHONE has undergone a diachronic change from plain to agreement verb, but no research has been done regarding
this subject. This example, as other exceptions, indicates that not all body-anchored signs are necessarily plain verbs.

Padden (1988) also identified a separate class of spatial verbs. Spatial verbs behave rather similarly to agreement verbs, but instead of agreeing with a subject or object, they agree with a locative argument. Verbs that agree with a location can also be referred to as locative verbs and this is the term that is used here. For locative verbs and indices, I do not use subscript numbers, but letters, as 3 is consistently used to refer to third person, and not to a location. Consequently, \texttt{walk}_3 means ‘I walked to location a’.

Since Padden’s (1988) pioneering work on ASL, the classes of agreeing, locative and plain verbs have been identified in many other sign languages (see, for example, Bos (1993) for NGT). Interestingly, even for those verbs that can in principle inflect for agreement, the realisation of agreement is optional, as has been shown for Auslan in a corpus-based study (De Beuzeville, Johnston & Schembri 2009; see also example (4.c)). Furthermore, agreement verbs do not automatically agree with all of their arguments. Rather, transitive verbs may agree with only the direct object, and ditransitive verbs with only the indirect object (Padden 1988; Meier 1987). Whereas in spoken languages, agreement with the subject is the unmarked case (see Figure 4.1), in sign languages, object agreement is described as more common and less marked.

Analysis of verb inflection has also revealed that many sign languages have a class of verbs called ‘backwards verbs’. In these verbs, the movement proceeds from the location of the object towards the location of the subject, the reverse of standard agreement verbs, hence the name (Bos 1994; Meir 1998). Backwards verbs in ASL and Israeli SL are, for instance, \texttt{copy}, \texttt{take}, \texttt{invite}, and \texttt{take-advantage-of}. In (3), two examples from NGT are provided.

\begin{equation}
\begin{align*}
\text{a. } \texttt{book}_2\texttt{take}_1 \\
\text{‘I took a book from you.’} \\
\text{b. } \texttt{girl} \texttt{index}_3 \texttt{invite}_1 \\
\text{‘I invited the girl.’}
\end{align*}
\end{equation}

Meir (1998, 2002), however, suggests a generalisation that can capture the behaviour of the two groups of verbs. She points out that agreement by path movement is determined by the thematic roles of the arguments, not by their grammatical roles. That is, path movement always proceeds from the location of the source towards the location of the goal. The difference between regular and backward agreement verbs thus reduces to a different mapping of thematic onto grammatical roles.

Interestingly, some sign languages have been shown to employ a special type of auxiliary, an agreement auxiliary, which may spell out agreement features in the context of a plain verb. Such an auxiliary has been identified in, \textit{inter alia}, NGT (Bos 1994), DGS (Rathmann 2000), Japanese SL (Fischer 1996), Taiwan SL (Smith 1990), and IPSL (Zeshan 2003). ASL and BSL, however, do not have such an auxiliary. In contrast to spoken language auxiliaries, which are used primarily to express tense, aspect and/or
modality, sign language auxiliaries are almost exclusively used to express subject and object agreement (Steinbach & Pfau 2007). Their use is, however, not limited to specifying agreement in the context of a plain verb as in (4.a), where LOV is body-anchored and cannot inflect. Rather, they are also occasionally observed in combination with an agreement verb as shown in (4.b). In this case, double agreement is thus observed, that is, both the main verb, here TELL, and the auxiliary inflect for the same features. In (4.c) on the other hand, the same main verb remains uninflected, meaning that only the auxiliary shows the agreement. This is an example of the optionality of verb agreement mentioned above.

(4)  
a. MAN INDEX3a WOMAN INDEX3b LOVE 3aAUX3b  
    ‘The man loves the woman’  
b. YESTERDAY, INDEX2 STORY 2TELL1 2AUX1  
    ‘Yesterday, you told me a story.’  
c. WOMAN INDEX3 TELL 3AUX1  
    ‘The woman told me.’

When combined with an (agreeing) backward verb, the auxiliary still agrees with the grammatical subject and object, and thus moves in the opposite direction of the backward verb, as can be seen in example (5) from LSC (Quadros & Quer 2008:542).

(5)  
INDEX1 CHILD 3TAKE1 1AUX3  
    ‘I take the child.’

Across spoken languages, the relevant agreement features can be spelled out in many different ways, as has been illustrated in Table 4.1. In contrast, across sign languages, the (phonological) realisation of verb agreement is strikingly homogenous: it always involves similar spatial modulations. Sign languages do vary, however, in the proportion of agreement verbs that occur and in the use of agreement auxiliaries which are capable of realizing agreement in the context of plain verbs (see Steinbach and Pfau (2007) for an overview).

Before turning to IUR, a few words have to be said about frames of reference (FoR). These are of interest when it comes to using the signing space for referential purposes. As FoR are connected to verb agreement, I need to briefly introduce the relevant distinctions. Spatial FoR are systems in language that have the function of coordinating the spatial relation between two objects: a figure and a ground. In the literature, several distinctions have been made. Here I follow the framework of Levinson (2007), who distinguishes three FoR: the relative, intrinsic and absolute FoR (see Levinson (2003) for other classifications). Briefly, these frames can be defined as follows. In the relative FoR, the objects are represented in a perceiver-centred coordinate system. In the intrinsic FoR, the objects are located with respect to each other based on their intrinsic axes. Finally, in the absolute FoR, the system uses the environment as a focus point to locate the objects in relation to one another. The relation of the two objects as seen from the man’s point of view in Figure 4.3,
with the wall being north, can be described in English employing the three frames of reference, as shown in (6). Although English would generally not use the absolute FoR, it is still in principle possible to make use of all three frames.

![Spatial relation between a plant and a chair.](image)

**Figure 4.3:** Spatial relation between a plant and a chair.

(6)  
- a. The plant is standing to the left of the chair. \(\rightarrow\) relative FoR
- b. The plant is standing in front of the chair. \(\rightarrow\) intrinsic FoR
- c. The plant is standing west of the chair. \(\rightarrow\) absolute FoR

These FoR are also used in sign languages. Kata Kolok, for instance, makes use of the absolute FoR, since locations in the village are used as fixed points (De Vos 2012). For ASL, it has been claimed that the signer can use space to indicate his/her FoR. When using the relative FoR, the signer describes a scene from his/her perspective. Classifiers can be used to demonstrate intrinsic features of an object, and by using signs like **EAST** and **SOUTH**, the signer makes use of the absolute FoR (Valli & Lucas 2000).

### 4.1.3. Verb agreement in IUR

The three-way distinction of plain, agreement, and locative verbs, which has been described for many sign languages, is also attested in IUR. However, for some verbs, it was difficult to establish whether they agree with a location or a subject/object argument. This complication was mainly due to the fact that it was often difficult to determine on what referent the location feature of the verb should be mapped. For instance, the verb **USE-ICE-AUGER**, when articulated at location 3a, could mean ‘he\textsubscript{3a} uses an ice auger’ (subject argument) or ‘use an ice auger at location\textsubscript{3a}’ (locative argument). In such ambiguous cases, the decision was taken to analyse the verbs as agreeing verbs and not as locative verbs, as their semantics indicated that person reference was more appropriate than locative reference.
This analysis is based on the fully annotated data files from the spontaneous conversations (see section 1.3.2). In the data analysed, there were 2345 signs of which 712 were verbs (30%) – including both lexical verbs as well as classifier predicates. The latter will be discussed in detail in section 4.2.3 below, but they are included in these counts. There were 112 different types, most of which (70 types or 63%) did not show any spatial inflection. These were therefore classified as plain verbs. Moreover, 20 types (18%) were analysed as agreement verbs, and 17 types (15%) as locative verbs. Three verbs were found only in the imperative voice, and two verbs posed analytical problems. They are described below. An overview of these numbers is given in Figure 4.4.

Based on these numbers, it is safe to conclude that IUR is a language with verb agreement. Localisation of referents at abstract loci in signing space, as described for other sign languages in section 4.1.2, however, was not frequently observed in IUR. Agreement may occur without localisation or even specification of the referents. This are described in the section on agreement verbs below.

I first consider the verbs that are not classified in one of the three main verb classes. First, three verbs, COME-HERE, GO-ON, and PAY-ATTENTION, were only used in the imperative voice. Examples of these verbs are given in (7). Both COME-HERE and GO-ON occur five times in the data. The only occurrence of PAY-ATTENTION is given (7.c).

(7)  

a. PRO1 LONG-AGO-2 ELDER SEVEN PRAY COLLAR COME-HERE  
‘Long ago, with my parents we were seven, the priest said come here.’

b. INDEX.PL TALK GO-ON. NEG-1 WOLF AROUND WAIT PRO1  
‘They said ‘go on’. I said no, there are wolves around, I’ll wait.’

c. INDEX1 TALK INDEX3a SEE3b INDEX3b PAY-ATTENTION  
‘I told him to watch this, pay attention!’

Second, the two verbs that posed analytical problems are NUDGE and GET. The verb NUDGE occurs twice in the data, but within one sentence, which is given in (8). The verb is signed with the elbow moving sideward toward location 3.

(8)  

NUDGE PRO1 NUDGE WAKE-UP FEMALE INDEX3  
‘I nudged her, and my sister who slept right on my side woke up.’

In principle, in this example, the direction of movement of the elbow could be interpreted as indicating agreement with the object argument. Still, this verb is not analysed as an agreement verb, as the phonology of NUDGE does not allow the verb to agree with other objects than a third person object; that is, the fact that it targets the location of the object in (8) may be a coincidence. This verb is therefore not included in the description and analysis in the remainder of this chapter.
Similarly, the verb GET poses analytical problems, as it has only been observed in the data with a first person subject as shown in (9). In this example, GET moves toward the first person, which is at the same time the grammatical subject and the semantic goal.

(9) 120 'GET FINISH
    'I got 120 dollar.’

This surface form might be analysed as showing (backward) agreement with the first person subject. However, since GET has not been found with another subject, it is impossible to determine whether GET is an agreement verb or not. Therefore it has not been analysed as showing agreement, but rather as a plain verb. Consequently, as NUDGE above, GET is not analysed as an agreement verb, but I discuss it briefly in the section regarding backward verbs.

The three classes of verbs as described earlier are discussed in more detail in the following sub-sections: plain verbs (section 4.1.3.1), agreement verbs (section 4.1.3.2), and locative verbs (section 4.1.3.3).

4.1.3.1. **Plain verbs**

Verbs for which no occurrences that would show spatial agreement were found in the data are considered to be plain. Based on this criterion, a total of 70 different types out of the 112 different verbs found in the spontaneous data (63%) were analysed as plain verbs; these included 39 intransitive and 31 transitive verbs (see Appendix 1). Out of these 70
types 26 (37%) occur only once in the data, 17 (25%) twice, and the remaining 38% occur more than twice. The most frequently occurring plain verbs are eat (41 times) and think (28 times). In (10), an example with several instances of eat is given, and in (11), two occurrences of think are shown. The examples in (11) also illustrate that the verb glossed as think has a fairly broad meaning.

(10)  | CARIBOU EAT ø FISH EAT CARIBOU EAT GOOD
     | ‘I eat caribou. I eat fish and I eat caribou, it’s nice.’

(11)  a. THINK HOUSE NEG-1 NEG-2, IGLOO CARVE IGLOO
     | ‘I remember when there were no houses, but when we carved igloos.’

     b. PRO1 THINK, PRO1 FEMALE WORK, CLEAN++ EVERY-DAY, PRO1 GO ICE-FISH
     | sad
     | NEG-1, ø INDEX FEMALE
     | ‘I think that my wife, who works, cleaning every day, is sad when I go ice fishing and she cannot come, my wife.’

For plain verbs, class membership is negatively defined, that is, on the basis of lack of agreement. This definition was used here but clearly where this classification is based on one occurrence of a verb in the data collected, it may be wrong.

Many of these verbs cannot show agreement with one of their arguments because their location is lexically specified. For most of the verbs, this entails a location on the body. For instance, the location of think and call-on-phone is the side of the head, while the location of eat, drink and talk is in front of the mouth. However, just as in other sign languages, a lexically specified location feature does not always block agreement in IUR. The signs be-lousy and hear, for instance, which are located at the nose and ear, respectively, can take agreement. They are described in section 4.1.3.2 below. As briefly mentioned in section 4.1.2 for phone in NGT, body-anchored verbs may diachronically lose their phonological specification for location and thus turn into agreement verbs. As in NGT, this appears to involve a weakening of the phonological properties of the verb.

Some verbs appear only as plain verbs in the data, even though one might expect them to be agreeing, given their semantic and phonological properties. Examples are bite, clean, gather, pay, pour, and reprimand. Their argument structure involves a semantic transfer, and they are not body-anchored. It would be possible, for instance, to sign bite at the location of its direct object, but this did not occur in the data. In (12.a), for instance, it would be possible to articulate bite at the location of flank, that is, the side of the signer’s body, but this did not occur. Similarly pay in (12.b) could be signed at the location of its direct object ‘shop’, but this has not been found.

(12)  a. COLD FLANK PALMS-UP, WOLF BITE PALMS-UP. EITHER PALMS-UP
     | ‘Maybe its flank was frozen, maybe a wolf had bitten it. One of the two.’
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b. A WALK/shop INDEX-LOC/shop PAY WRITE. ZERO INDEX-LOC/shop, PRO1 HAPPY PRO1

‘I walked to the shop, and paid by writing (a cheque). Now (my charge) is zero there, I’m happy about that.’

4.1.3.2. Agreeing verbs

Twenty verb types in the data (i.e. 18% of all verb types) were classified as agreeing verbs because they occur in spatially modified form at least once in the data. Interestingly, however, these verbs also frequently occur in a non-inflected form, as can be seen in Appendix 1. Note that there were three verbs that were observed in inflected forms in other data files, namely FIRE-SHOTGUN, OPEN, and USE-SPEAR. Since these files have not been fully annotated yet, they could not be used in the analysis. These verbs were therefore taken out of the quantitative analysis that is presented below, but were nonetheless analysed as agreeing verbs. Leaving these three verbs aside, I end up with 17 types. Out of the 175 tokens of these 17 types, only 65 tokens (37%) show agreement. In other words: in two thirds of the cases, a verb that could in principle show agreement is used without agreement morphology. IUR is not unusual in this respect, as is explained in section 4.1.4.

As far as the phonological realisation of agreement is concerned, IUR agreement verbs follow the patterns described for other sign languages: either the locus, the movement, or the orientation changes. Intransitive verbs that are signed at the locus of their subject are, for instance, DIE, USE-ICE-AUGER, and ICE-FISH. Transitive verbs that move through signing space towards the locus associated with the object argument are GATHER, SEE, and SHOOT, among others. Verbs that change their orientation (of fingertips or palm) to agree with their argument are for example HATE and BE-LOUSY. The agreement patterns thus not follow the distinction between intransitive or transitive verbs.

For all agreeing verbs, specification and localisation of the referents is optional. Localisation by means of an index does not occur very often. Interestingly, in cases where referents were located in signing space, this often reflected how the signer experienced the original event described. When introducing two persons, for instance, a signer would rarely locate the first person on his/her right, and the second person on his/her left, in contrast to what has been described for other sign languages (see references in section 4.1.2 above). In most IUR cases, both persons would be located in signing space rather close to one another, making it more difficult to distinguish who did what. The fact that the interviews were recorded by only one camera (see section 1.4), so that the signer was only visible from one angle, further complicated the distinction.

In the following, a distinction is made between intransitive verbs that agree with their subject and transitive verbs that agree with their object. In the data, no transitive verbs have been found that agree with their subject, apart from a few semantically light verbs. These are addressed below in the section on auxiliaries. Backwards verbs are also discussed.
Intransitive verbs

Subject agreement was found only on four intransitive predicates in the data: BE-LOUSY, DIE, ICE-FISH, and USE-ICE-AUGER. These verb signs can be produced at different locations in the signing space, thereby agreeing with (the location of) the subject, as illustrated by (13.a), where the verb USE-ICE-AUGER is articulated twice at different locations (pictured in Figure 4.5). (13.b) is an example with ICE-FISH, which shows that agreement is optional. Note that the first occurrence _ICE-FISH_ agrees with the first person subject, while the second occurrence does not agree with the plural subject INDEX.PL. _ICE-FISH_ is articulated close to the signer’s body, while the second instance of the verb is articulated in neutral signing space.

(13)   a. USE-ICE-AUGER INDEX3 USE-ICE-AUGER INDEX3
         ‘I used an ice auger, and he used an ice auger, too.’

       ____grumpy

    b. ICE-FISH HAVE-A-BITE PULL-IN. INDEX.PL ICE-FISH++. PRO1 PALMS-UP NEG1
       ‘I was ice fishing, had a bite and pulled in. They were ice fishing, looking grumpy.
       I don’t know why (they didn’t catch anything).’

![Video stills of sentence (13.a), showing the inflected forms of USE-ICE-AUGER.](image)

Of all 56 occurrences of these four intransitive verbs, only 27% showed agreement with the subject argument. Agreement with the subject argument is thus clearly not obligatory.

As explained in section 4.1.3.1 on plain verbs, a phonological specification for location on or near the body does not always block agreement. Some verbs can show agreement despite the fact that their citation form is not articulated in neutral space. In IUR this is true for the verb BE-LOUSY, the citation form of which is specified for a location in front of the nose. Still, this intransitive sign can agree with its subject, as illustrated in (14). The first
occurrence of BE-LOUSY is uninflected, and is signed at the nose. The following instances are displaced towards the different locations in the signing space, thereby agreeing with different subjects. The verb forms are illustrated in Figure 4.6, although the difference in orientation of 3aBE-LOUSY and 3bBE-LOUSY is not clearly visible in the stills.

(14) INDEXpl BE-LOUSY. 3aBE-LOUSY 3bBE-LOUSY. PRO1 VERY-GOOD PALMS-UP
(talking about fishing) ‘They are lousy at it. He3a and he3b are lousy at it. I’m very good, what can I say.’

Figure 4.6: Video stills of the uninflected and inflected forms of BE-LOUSY in (14).

Some cases pose analytical challenges. For instance, 18 instances of DIE were found, of which eight seem to show subject agreement. However, in these eight instances what looks like agreement could also be interpreted as plural marking, as various instances of the verb are signed successively along an arc. In (15) the two possibilities are indicated. In (15.a), the verb is analysed as an exhaustive plural, and therefore glossed as DIE++. This modulation parallels that of SHOOT++, although the arc movements of the verbs go in opposite directions. In contrast, in (15.b), the instances of DIE are analysed as showing subject agreement successively, glossed as 3aDIE 3bDIE.

(15) a. BIRD PRO1 SHOOT++arc. FINISH BULLET 22 BULLET gs:reload-gun SHOOT++arc-leftward
     DIE++arc-rightward
     ‘I shot the birds. When there were no more bullets, I reloaded with .22 bullets, shot again, and they died.’

     b. EAT PALMS-UP. 3aDIE 3bDIE. SKINNY SKIN FROZEN. 3aDIE 3bDIE 3cDIE 3dDIE FINISH
     ‘There was no food. He died and he died. They were skinny, their skin was frozen. He died and he died and he died and he died.’
In other studies, reduplication of the sign along an arc has been described as an exhaustive plural \textit{(inter alia) Padden 1990 for ASL}, and it might thus be the case that the occurrences of \textsc{die} in (15) do not display subject agreement with several singular subjects, but rather agree with one plural subject. In most instances, this can be glossed as \textsc{die}++(arc), as in (15.a), and be translated as ‘each of them died’. As the reading of \textsc{die3a,die3b,die3c,die3d} can be both plural as well as successive (‘one after the other died’), it remains unclear how the example should be interpreted. Besides the verb \textsc{die}, only \textsc{shoot} and \textsc{give} were found to be articulated with an arc movement. \textsc{shoot} poses similar analytical problems as \textsc{die}, especially when the two verbs follow each other as in (15.a). Only one occurrence of \textsc{give++} was found, and from the context, it was clear that this should be interpreted as an exhaustive plural meaning ‘we gave to each of them’. However, as these three verbs are all telic, it is difficult to distinguish between the two interpretations, especially since they are close in meaning.

The non-agreeing instances of \textsc{die} all refer to a singular subject and do not show agreement. In (16), it is clear that \textsc{die} does not agree with its subject, the caribou. Frequently, \textsc{die} follows \textsc{shoot}, indicating that the animal was indeed killed. This combination may be a serial verb construction, i.e. the combination of \textsc{shoot \ die} meaning then ‘to kill’ (= ‘to shoot dead’).

(16) \quad \textsc{caribou index-loc3 sit. pro1 walk shoot die}
\hspace{1cm}‘A caribou sat there. I walked a bit more and then shot it dead.’

\textbf{Transitive verbs}

As set out in section 4.1.2, transitive verbs in many sign languages may agree with both subject and object, although subject agreement has been described as being more marked (Meier 1987; Padden 1988; Meir et al. 2007). This is confirmed by the IUR data, as transitive verbs mainly agree with only their direct object, and ditransitive verbs with their indirect object. In the data, 13 verbs are transitive verbs (see Appendix 1 for the different types). In example (17), the verb \textsc{see} agrees with a third person object. In (17.a), the object of \textsc{see} (\textsc{index3b}), occurs right after the verb, while in (17.b), the object (\textsc{char}) precedes the verb but is not localised.

(17) a. \textsc{index1 talk index3a see3b index3b pay-attention}
\hspace{1cm}‘I told him to watch this, pay attention!’

\hspace{1cm}b. \textsc{char see3 palms-up ice-fish neg-1}
\hspace{1cm}‘I didn’t see any char. Ice fishing didn’t result in anything.’

Just like agreement with intransitive verbs, agreement with transitive verbs is optional in IUR, as can be seen in (18), where the sign \textsc{hate} occurs first in citation form (palm
orientation forward, away from the signer), followed immediately by a change in orientation of the hand, thus agreeing with the first person object. Note that the sign glossed as AUX in this example is addressed in the discussion of auxiliary verbs below.

(18) \[3\text{AUX}_1 \text{HATE} \text{ HATE}_1 \text{PALMS-UP}\]

‘He tells me he hates me, what can I do?’

There were 119 tokens of transitive agreement verbs in the data, and 42% of these occurrences showed agreement. This pattern is in line with findings reported for other sign languages and is discussed in more detail in section 4.1.4.

Interestingly, the verb HEAR is also an agreement verb that may agree with its object. The verb is signed with the index finger pointing towards the ear. In the discussion of plain verbs above it was suggested that verbs specified for a location on the body would usually not agree. HEAR, however, may agree with its object by moving away from the ear towards the location at which the sound originated, as can be seen in (19), where all people and locations had been introduced in the preceding context.

(19) \[\text{HEAR} \text{ SHOOT}^{++} \text{ INDEX-LOC}_a, \text{ELDER} \text{ INDEX}_3a \text{ SHOOT}^{++} \text{ INDEX}_3b \text{ HEAR}_3a^{++}\]

‘They heard shots over there. My dad was shooting, and they heard them.’

Only one verb has been found to consistently agree with two arguments, namely TRANSFER. This verb denotes a very general meaning of transfer, as can be seen in (20), where TRANSFER (see below) indicates the path of the message from God.

(20) \[\text{RED} \text{ LIGHT INDEX-LOC}_a, \text{LIGHT PRAY INDEX}_up \text{ CROSS}^{up} \text{TRANSFER}_a\]

‘There was a red light over there, it was a light from God. He send it from above to therea.’

Additionally, AUX may agree with two arguments. This auxiliary verb is described below.

As mentioned above, lack of subject agreement has been described for other sign languages, too (Padden 1988; Meier 1987). Other studies do not report numbers, but in IUR the phenomenon appears to be quite common. The data collected so far actually suggest that – with the exception of TRANSFER and AUX – subject agreement is never specified on transitive verbs in IUR. Alternatively, however, one might argue that in fact subject agreement is always present, but not overtly marked. As Meir et al. (2007) argue, the signer’s body represents the subject argument of (partially) iconic verbs. Their analysis could be applied to IUR as well. In that case, the subject argument in transitive verbs would always be present, because the signer’s body always takes on the role of subject argument.

One interesting phenomenon has been observed with the verb TALK. This verb has a dedicated two-handed reciprocal form, in which the non-dominant hand mirrors the
behaviour of the dominant hand, as can be seen in Figure 4.7. The sign does not necessarily refer to only two people, but simply means ‘people talking to each other’. It can be aspectually modified by adding a slight (not necessarily symmetrical) circling movement of both hands, which implies that the talking went on for a while. Also, the two hands can open and close alternately, meaning that two people took turns in talking.

![Figure 4.7: TALK.RECIP.](image)

**Backwards verbs**

No clear cases of backwards verbs, as described for other sign languages (Brentari 1988; Meir 1998; Quadros & Quer 2008), were observed in the IUR data. A possible exception is the sign GET, as this verb has been observed to move toward the signer. In Figure 4.8, the begin and end locations of the sign are pictured.

![Figure 4.8: GET, begin and end locations.](image)

This movement towards the subject is reminiscent of backwards verbs, that is, it might be taken to indicate first person subject agreement. This form of GET is used in (21); still, it is glossed without agreement (also see example (9)).

(21) **ONE CARD MONEY GET PRO₁**
    ‘At one, I get a cheque.’
The motivation for not glossing the movement as a realisation of agreement in this case is that this sign was only observed with a first person subject, and \textit{get} might thus not agree at all, but rather simply be lexically specified for movement towards the signer. Still, this verb has not been classified as a plain verb either, but rather as one of the unclear cases, as has been described in section 4.1.3.

\textit{Auxiliary verbs}

In section 4.1.2, it has been pointed out that some sign languages employ dedicated agreement auxiliaries in the context of plain verbs. In the IUR data, I observed an agreeing sign that behaves like an auxiliary verb. Yet, given that the sentence in (22) is the only occurrence of this sign (\textit{AUX}) in the data, no safe conclusions concerning its status can be drawn at this point.

\begin{equation}
3\text{AUX}_1 \text{HATE} \text{HATE}_1 \text{PALMS-UP}
\end{equation}

\textit{‘He hates me, what can I do?’}

The sign glossed as \textit{AUX} in (22) involves a $\ddagger$-handshape moving from the position of the third person subject to the position of the object (the signer), as shown in Figure 4.9.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\linewidth]{aux.png}
\caption{AUX.}
\end{figure}

Note that the main verb \textit{HATE} occurs twice in the clause, first in non-inflected form, then with object agreement (remember from the discussion above that \textit{HATE} is classified as an agreement verb). Apparently, \textit{AUX} may occur with agreement verbs and double (object) agreement is thus possible. It is analysed as an agreement verb, and therefore counted in that group.

Steinbach and Pfau (2007) describe the grammaticalisation of auxiliary verbs across sign languages and conclude that verbs and concatenated pronouns are the most common sources for these elements. Based on its phonological form, it may be tempting to claim that IUR \textit{AUX} is derived from concatenated pronouns – after all, it is very similar in form to the auxiliaries attested in, for example, IPSL (Zeshan 2003), Taiwanese SL (Smith 1990),
and Japanese SL (Fischer 1996), which have been claimed to originate from concatenation of pronouns. I like to point out, however, that the phonological similarity of IUR AUX to previously described auxiliaries might also be a coincidence.

Another IUR verb may shed additional light on AUX. The verb TRANSFER is phonologically identical to AUX, but appears in the data without an accompanying main verb. It denotes a meaning of general transfer. In (20) above, TRANSFER denotes the path of a light that God sent down as a warning. In the examples in (23), TRANSFER denotes the transfer of money from one person to another. The gloss MOVE$_{down}\!:\!E1$ in (23.a) refers to a classifier predicate: $E1$ is the gloss for entity classifier $\hat{\chi}$, representing the chisel, which moves down (see Table 4.5).

(23)  
a. TIME TODAY CARD WRITE MONEY INDEX$_3$ 3TRANSFER$_1$ CHISEL MOVE$_{down}\!:\!E1$
     ‘Today he will give me a cheque for dropping my chisel.’

    b. INDEX.PL INUK$^{20}$ REPRIMAND 2TRANSFER$_3$ MONEY PRO$_2$ 2TRANSFER$_3$
     ‘Those people reprimanded him: Give him money, you give it to him.’ (or: pay him)

Given that TRANSFER can occur by itself, and based on the observation that AUX and TRANSFER are phonologically identical and semantically similar, it might well be that TRANSFER is the diachronic source for the auxiliary. In its grammaticalised form, the transfer it expresses may be highly abstract, as in (22), as has also been observed for other sign languages, where auxiliaries commonly combine with lexical verbs like LIKE and TRUST (Steinbach & Pfau 2007; see also example (4) above). As interesting and promising as this line of reasoning may be, at this point, it can only be offered as speculation, given that there were not enough instances of these verb forms in the data to allow for a more thorough analysis and safe conclusions.

4.1.3.3. Locative verbs

IUR also has verbs that agree with locative arguments. As discussed earlier in section 4.1.3, when locations in signing space are used, it is sometimes difficult to determine whether signs that target these locations agree with a subject/object argument or with a locative argument, that is, the actual location of the subject/object argument. Verbs that are ambiguous in this respect are USE-ICE-AUGER and USE-SPEAR. An example of the former is given in (24) with two alternative translations.

(24)  INDEX-LOC$_a$ SKIDOO. CHISEL FINISH, 1USE-ICE-AUGER INDEX$_3$ 3USE-ICE-AUGER
     a. ‘We went there by skidoo. First we chiselled, then I used an ice auger and then
        he used an ice auger.’

$^{20}$ Inuk is the singular form of Inuit, meaning ‘human being’.
b. ‘We went there by skidoo. First we chiselled, then we used an ice auger here, and then we used an ice auger over there.’

These verbs are analysed as agreeing verbs, that is, adapting the translation in (24.a) since the referent was most often a person and not a location. In the end, 17 verbs were classified as locative verbs (see Appendix 1 for a complete list). Examples are BRING, CUT, DRILL, GO, and PLANE-FLY. Note that some of these verbs occurred in inflected forms in other data files, and were therefore classed as locative verbs, but were taken out of the quantification analysis that follows.

In many sign languages, locative verbs may agree with locations that are set up in signing space. Consider, for instance, the NGT example in (25), where the school is localised at an arbitrary location in signing space.

\[(25)\] SCHOOL INDEX-LOC\(_a\) TOMORROW PRO\(_1\) WALK\(_a\) PRO\(_1\) \(NGT\)

\[= \text{‘Tomorrow, I will walk to school.’}\]

In IUR, it is also possible to localise referents in signing space. IUR differs from the NGT example in (25), however, as IUR most often uses actual locations. At first sight, example (26) is comparable to the NGT example, as Cambridge Bay (‘C-B’) is first introduced and then localised in signing space.

\[(26)\] HERE CAMBRIDGE-BAY INDEX-LOC\(_{C-B}\) PICTURE C-BPLANE-FLY\(_{here}\), PALMS-UP

\[= \text{‘(My sister) in Cambridge Bay took a picture and sent it to me (by plane), but I don’t know what happened.’}\]

However, INDEX-LOC\(_{C-B}\) is directed to the actual location of Cambridge Bay. In NGT, too, a locative index may be directed to the actual location of the referent, but most often the signing space is used to arbitrarily localise referents. This arbitrary use of localisation hardly ever occurs in IUR. Even when the referent is not mentioned, the locative index is not directed towards an arbitrary location, but rather towards the location at which the original event took place, or at which the signer experienced the event. In (27), two examples are given, also showing that the locative index may either precede or follow the verb.

\[(27)\] a. INDEX-LOC\(_a\) SCOOP USE-ICE-AUGER FINISH. \(_a\)WALK\(_1\) TAKE:HC\(_a\), \(_i\)WALK\(_a\) QALLUNAAQ\(^{21}\) CHISEL. DROP MOVE\(_{down:\text{EC}}\)

\[= \text{‘Over there, they scooped and used an ice-auger. He walked from there towards me and took (my chisel). He walked back and the white man used the chisel. Then he dropped it, and it sank down.’}\]

\(^{21}\) *Qallunaaq* means ‘white man’ in Inuktitut, see section 5.3.3.2 for an explanation of this sign.
b. PAST++ PRO₁ GOₐ INDEX-LOCₐ SHOOT DIE. COME₁
   ‘Two days ago, I went over there and shot a caribou. Then I came back here.’

The common pattern observed in IUR is that locative verbs agree with actual locations. This is strongly connected with the use of absolute pointing, that is, pointing to real-world locations, as has also been described for Kata Kolok (Perniss & Zeshan 2008; De Vos 2012), as well as for AdaSL (Nyst 2007).

It is also possible to only mention the referent location, but not localise it, as can be seen in (28). Here WINNIPEG is not localised by a locative index, but the verb nonetheless agrees with the location of Winnipeg (‘Wpg’).

   (28) WINNIPEG PRO₁ DOCTOR PLANE-FLY-WITH-STOPₛₐₐ WAITₐₐ Wpg TWO THREE MONTH++
   ‘I went on the medical plane to Winnipeg and stayed there for three months.’

In some cases, the location is mentioned before or after the verb, as can be seen in (28). In other instances, the location is implicit, as for instance in (29). In this example, the verb PLANE-FLY-WITH-STOPₛ starts its movement at a location in the direction of Winnipeg, and the end location of PLANE-FLY-WITH-STOPₛ is the location of HERE. Actual locations that are referred to may be close-by (e.g. the house of a relative), but are often outside of the community. Winnipeg for instance, is almost 1500 kilometres south of Rankin Inlet, where sentence (29) was signed.

   (29) PRO₁ NEXT-DAY NEXT-DAY FEMALE PERSON WpgPLANE-FLY-WITH-STOPₛₐ.locale HERE
   ‘In two days, my daughter comes here with the plane that stops on the way.’

All locative verbs that denote motion may in principle agree with two locations, but in the data, this is not always observed, as some of the above examples illustrate. Out of the 226 occurrences of locative verbs in the data, 42% agree with one location, and only 8% agree with two locations. More than half of the tokens thus do not agree with a location at all, as can be seen in (30). In both examples, a location is established, either through mentioning the referent (RANKIN) in (30.a), or by using a locative index as in both examples. In (30.a), PLANE-FLY neither agrees with the location introduced by INDEX-LOCₐ nor with the location of RANKIN. In (30.b), the first occurrence of WALK agrees with the location of INDEX-LOCₐ, while the second does not, even though the INDEX-LOCₐ is repeated.

   (30) a. PRO₁ PLANE-FLY INDEX-LOCₐ RANKIN PLANE-FLY HAPPY HERE
   ‘I went by plane from there to Rankin Inlet, and was happy to be here again.’
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Just like agreement verbs, locative verbs thus do not always agree with their arguments. Also, referents may be omitted, a pattern also observed for agreement verbs. Locative verbs often agree with an actual location, or a non-arbitrary location in signing space. In contrast, agreement with an arbitrary (established) location is rare.

4.1.4. Discussion and typological comparison

Summarizing, it is clear that, with respect to verb types, IUR patterns with other sign languages. On the basis of the data collected, I can conclude that the IUR lexicon contains all three types of verbs: plain verbs (63%), agreeing verbs (18%), and locative verbs (15%). In Schuit, Baker and Pfau (2011), we argued that verb agreement in sign languages could be typologically described in the form of a continuum. At the extremes, we would find sign languages in which all verbs take agreement, and sign languages that show no verb agreement at all. Both these extremes are as yet unattested, but some sign languages are close to the second extreme, like Kata Kolok (Marsaja 2008).

IUR is a language that allows for agreement, but verbs do not always agree. In fact, only 37% of the tokens of agreement verbs show agreement with an argument, and the same is true for 50% of the locative verbs. Only two agreement verbs were found to show agreement with two arguments, namely AUX and TRANSFER as described above (5 tokens), and one agreement verb only shows reciprocal agreement (TALK; 6 tokens). Of the locative verbs, 8% agree with two locations (18 tokens), and 42% with one location (95 tokens).

At first sight, the lack of agreement markers on agreement and locative verbs may appear surprising. In fact, to date there are hardly any studies that would report figures concerning the omission of agreement markers on potentially agreeing verbs. The only available studies that offer a comparable quantification of the data are a corpus-based study on Auslan verbs by De Beuzeville, Johnston and Schembri (2009), and the study of YSL by Bauer (2012). First of all both studies report a similar percentage of verbs in their data: 26% of the signs in the Auslan data and 20% of the signs in the YSL data were classified as verbs – compared to 30% in the IUR data.

It should be taken into account, however, that De Beuzeville, Johnston and Schembri (2009) classified verbs in a different way. First, they did not distinguish between agreement and locative verbs, but grouped them together under the label ‘indicating verbs’. Secondly, they grouped verbs that include a classifier under the label ‘depicting verbs’, while I included them in the classes of agreement or locative verbs, depending on the meaning of the underlying verbs. In order to be able to compare the distribution of IUR verbs to the results from the Auslan study, I recounted the IUR verbs after re-grouping.
them according to the criteria of De Beuzeville et al. (2009). This yielded the following result for IUR: 310 out of 695 tokens are indicating verbs, 271 tokens are plain verbs, 92 tokens are classifier predicates (see section 4.2.3), and 22 tokens belong to either the imperative or unclear group. The last three categories are not relevant for the comparison here, and is therefore not discussed further. Bauer (2012) based her study on the analysis of De Beuzeville et al. (2009), so her data is highly comparable, too. She distinguished between plain verbs and non-plain verbs, and did not include classifier predicates in the quantification. This is why the percentages for YSL add up to 100%. The percentages of all studies are given in Table 4.2.

Table 4.2: Distribution of verb types in Auslan (De Beuzeville et al. 2009:68), YSL (Bauer 2012:184) and IUR. For IUR, there were 106 verb types.

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Auslan N=2247</th>
<th>YSL N=787</th>
<th>IUR N=695</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain</td>
<td>23%</td>
<td>74%</td>
<td>39%</td>
</tr>
<tr>
<td>Indicating (agreement + locative)</td>
<td>53%</td>
<td>26%</td>
<td>45%</td>
</tr>
<tr>
<td>Of which inflected for agreement</td>
<td>41%</td>
<td>21-40%</td>
<td>44%</td>
</tr>
</tbody>
</table>

Although the proportion of indicating verbs is slightly higher in Auslan than it is in IUR (53 versus 45%), the difference is rather small. The proportion of indicating verbs of IUR is higher than that of YSL, however. The three languages thus differ with respect to the proportion of indicating verbs in the corpus data. Most interestingly, however, the proportion of indicating (agreement + locative) verbs that is actually spatially modified is strikingly similar for IUR (44%) and Auslan (41%) and quite comparable, although slightly lower, for YSL (21-40%). In other words: in all three sign languages, more than half of the verbs that allow for spatial modification appear in the data in a non-modified form, thus behaving like a plain verb.

Based on these results, I conclude that IUR patterns more with Auslan than with YSL with respect to verb agreement. On the one hand, the similarities between IUR and Auslan in the area of verb agreement are surprising since IUR is used in a rather different setting than Auslan. Even more surprising is the fact that IUR patterns less with YSL than with Auslan in this respect, given that the setting of IUR is rather similar to that of YSL, a sign language that is used in several aboriginal communities in Arnhem Land, Australia. In comparison to YSL, IUR shows a higher percentage of verbs in the data and of indicating verbs in particular. The latter difference may be due to the fact that the IUR data has been mainly obtained from deaf people, while most of Bauer’s (2012) informants were hearing. The data reveal that IUR displays more similarities with the verbal system of urban sign languages than of village sign languages.

Interpreting the distribution in light of the continuum of verb agreement proposed in Schuit, Baker and Pfau (2011), IUR may thus be placed toward the agreement end of the continuum. However, just as in other sign languages, not all verbs take agreement: only
33% of all verb types allow for spatial modification (this includes agreement and locative verbs; see Figure 4.4), and 45% of all verb tokens show inflection. Since only the study of Auslan verbs is comparable, I suggest using the percentage of inflected verb tokens in order to place a sign language on the continuum of verb agreement. Following this strategy, Auslan surpasses IUR since 53% of all verb tokens are spatially modified, and Auslan thus should be located even more towards the agreement end. Clearly, it would be highly interesting if more studies quantified verbs according to these criteria, in order to allow for a comparison with the results of De Beuzeville et al. (2009) and those of the present study. Then it would be possible to create a proper continuum of verb agreement.

On the other hand, I have to add to the picture the fact that IUR also patterns with village sign languages. In particular, just like signers of AdaSL (Nyst 2007), Kata Kolok (Perniss & Zeshan 2008; Marsaja 2008; De Vos 2012), and YSL (Bauer 2012), IUR signers make use of absolute pointing. Perniss and Zeshan (2008) point out that the use of absolute pointing is comparable to the use of an absolute frame of reference, a system of spatial reference in spoken languages (see section 4.1.2). The difference between the absolute frame of reference and absolute pointing in sign languages is that the latter make use of actual, physical locations for referential purposes. As pointed out above (see Figure 4.3 and example (6.c)), spoken languages that employ the absolute FoR use terms such as ‘north’ and ‘south’ in descriptions of spatial settings, like ‘the man is north of the tree’ (Pederson et al. 1998). In contrast, sign languages that make use of absolute pointing, point to actual locations, which they cannot use in spatial descriptions. A picture of a man and a tree, for instance, would not be described by pointing to a random tree in the community. Other strategies would be used in those cases (see section 4.2.2 on classifiers below).

For YSL, Bauer (2012) relates how these locations may be used for verb inflection. In IUR these real-world locations may also surface as inflectional markers on locative verbs. In these cases, the beginning and/or end location of the verb coincides with the actual location. The relevant location may be in the vicinity of the signer, but it may also be a city 1500 kilometres away. Although pointing to real-world locations has been observed in Kata Kolok and AdaSL as well, these sign languages are unlike IUR and YSL in that they do not allow for verb inflection. Thus, when it comes to verb agreement, IUR and YSL pattern alike in several respects.

### 4.2. Classifiers

Classifiers are words or morphemes that are used to classify a referent by denoting a characteristic physical or semantic property of that referent (Sandler & Lillo-Martin 2006). Different types of classifiers have been distinguished, and they are briefly described in section 4.2.1. I focus on verbal classifiers (sometimes called ‘predicate classifiers’), as classifier constructions in sign languages are most often described as predicates, and they are analysed as such for IUR. Some scholars have suggested analysing sign language classifiers as a form of verb agreement (inter alia Supalla 1982; Glück & Pfau 1998; Pfau & Glück 2000; Zwitserlood 2003; Zwitserlood & Van Gijn 2006), and this approach is
adopted here. Different types of sign language classifiers are introduced in section 4.2.2, followed by a discussion of the classifiers that occurred in the IUR corpus (section 4.2.3).

4.2.1. Classifiers in spoken languages

Aikhenvald (2000), in her classic work, proposes a typology of noun categorisation devices that distinguishes six types of classifiers – noun, numeral, genitive, locative, deictic, and verbal classifiers (also see Allan 1977). Noun classifiers are free morphemes, which classify the noun in a specific, generic class. Numeral classifiers are devices of quantification, which occur either as free or bound morphemes in the context of numerals and quantifiers. Genitive classifiers show up in possessive constructions. For locative and deictic classifiers, she concludes that more examples are needed “before their typological profile could be fully established” (Aikhenvald 2000:172). Grinevald (2000) in fact does not include these last two types in her typology, which is based on morphosyntactic properties of the other four types of classifiers.

The last type of classifier that Aikhenvald (2000) describes are verbal classifiers. These are bound morphemes that combine with verbs and classify one of the (nominal) arguments of the verb. The categorisation of the referent occurs in terms of animacy, shape, size, and structure. Furthermore, their use is not obligatory (Aikhenvald 2000; Grinevald 2000). The Cherokee examples in (31) show that the verb néé’a ‘give’ combines with different classificatory morphemes depending on physical properties of the object given (Aikhenvald 2000:161). Bold face indicates the classifiers involved.

(31) a. Wèësa gà-kaá-nèè’a
cat 3.SG.S/3.SG.O-cl(living)-give
‘She is giving him a cat.’

b. Àhnàwo gà-nv-v-nèè’a
shirt 3.SG.S/3.SG.O-cl(flexible)-give
‘She is giving him a shirt.’

The discussion in the next section reveals that this classifier type is highly relevant when it comes to classifier phenomena in sign languages.

4.2.2. Classifiers in sign languages

Fairly detailed descriptions of classifier systems are available for many sign languages from all over the world (e.g. Supalla (1986) for ASL; Corrazza (1990) for LIS; Oviedo (2004) for Venezuelan SL). For some sign languages (e.g. NGT and DGS), classificatory morphemes have been analysed as agreement markers (Glück & Pfau 1998; Zwitserlood
2003), given that they are obligatory on certain verbs and form a clear paradigm, and this analysis is adopted here.

The grammatical elements referred to as “classifiers” here have been given many different labels in the sign language literature (see Schembri (2003) for an overview of the terms used). However, all the different terms have in common that they refer to

“forms representing different classes of nominals in combination with other elements. The noun class forms are represented by a set of handshapes, and it is these handshapes that are […] called classifiers.” (Sandler & Lillo-Martin 2006:76)

Simplifying somewhat, there are four types of classifiers in sign languages (inter alia Supalla 1986; Engberg-Pedersen 1993; Schick 1990). These types are: (i) Size and Shape Specifiers (SASSes), which indicate the size and shape of the referent; (ii) entity classifiers\(^\text{22}\), which refer to general semantic classes; (iii) handling classifiers, which indicate how an object is handled or manipulated; and (iv) bodypart classifiers, which classify specific body parts. For this last type, Benedicto and Brentari (2004) argue that they constitute a separate type of classifier predicate as they have an agentive subject, in contrast to entity classifiers. Nevertheless, for the present study, it was decided to group bodypart classifiers together with entity classifiers, as the distinction between agentive and non-agentive subjects is not relevant for the discussion of IUR classifiers.

Crucially, both handling and entity classifiers are bound morphemes (handshapes), which combine with verb roots, that is, they can be considered verbal classifiers (Aikhenvald 2000). These classifiers appear on verbs of motion and location that are lexically underspecified for handshape (Zwitserlood 2003). In contrast, SASSes are free-standing modifiers that behave more like adjectives, and as this chapter focuses on predicates, they are not included in the following discussion.

Handling classifiers represent the direct object of a (di)transitive verb. The handshape that surfaces on the verb (e.g. GIVE, PUT-DOWN) reflects shape properties of the handled object, thereby agreeing with the direct object. Handling classifiers are attested in all sign languages studied to date, and are rather comparable in form across sign languages. Still, they may be grammaticalised to a different degree across sign languages. In her comprehensive study of the classifier system of NGT, Zwitserlood (2003) describes a fixed set of 8 handshapes that signers may choose from, some of which are given in Table 4.3. In contrast, IPSL has no comparable systematic paradigm for handling classifiers (Zeshan 2000, 2003a).

While handling classifiers represent how a referent is handled or manipulated, entity classifiers, which classify the (agentive or non-agentive) subject of an intransitive verb (e.g. MOVE, BE-LOCATED), represent a referent directly. They represent a semantic class and the handshape refers to specific form characteristics of this referent class, thereby agreeing with the subject of the verb. Many sign languages have dedicated classifiers that refer, for instance, to vehicles, to round objects, or to long, thin objects. For NGT, Zwitserlood

---

\(^{22}\) Supalla (1986) refers to these as “semantic classifiers”.
(2003) describes 15 different, frequently occurring entity classifiers. In the lower part of Table 4.3, some examples of NGT entity classifiers are given.

**Table 4.3:** Examples of NGT handling and entity classifiers (Zwitserlood 2003, section 4.2).

<table>
<thead>
<tr>
<th>NGT handling classifiers</th>
<th>Possible referents (not exhaustive)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small and/or thin objects</td>
</tr>
<tr>
<td></td>
<td>Long and thin entities; cylindrical entities; manipulation with some force</td>
</tr>
<tr>
<td></td>
<td>Long and thin entities; cylindrical entities; more careful handling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NGT entity classifiers</th>
<th>Possible referents (not exhaustive)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long, thin entities; objects that are cylindrical or longer than they are wide; animate referents</td>
</tr>
<tr>
<td></td>
<td>Objects that are flat and wide, or have a flat surface</td>
</tr>
<tr>
<td></td>
<td>Human beings and other two-legged animate beings</td>
</tr>
<tr>
<td></td>
<td>Cylindrical and curved entities; containers</td>
</tr>
</tbody>
</table>

Like handling classifiers, entity classifiers have also been found in many sign languages, but there appears to be more cross-linguistic variation. First, as for the classifier inventory, some sign languages employ mostly unmarked handshapes for entity classifiers, as can be deduced from Zwitserlood’s description of NGT classifiers, while other sign languages also allow marked handshapes, as has been described for LIU (Van Dijken 2004). Also, the number of entity classifiers differs. Whereas NGT has 15 entity classifiers, IPSL has been found to only use two entity classifiers regularly and consistently (Zeshan 2003).

Secondly, in striking contrast to NGT and many other urban sign languages, village sign languages are rarely reported to have entity classifiers, with the exception of Kata Kolok (Marsaja 2008). AdaSL, for example, makes almost no use of entity classifiers, and, if they do occur, they are only found in constructions expressing the motion or location of entities on the body. Rather, motion of an entity in space is expressed by means of general directional signs, for instance, the sign FROM, which indicates ‘motion from a reference point’ (see Nyst (2007) for a full description of these directional signs). Similarly, PISL does not make use of entity classifiers (Washabaugh 1986), and for YSL, Bauer (2012) describes only three entity classifiers, which appear very infrequently in the data (and one of them is highly specific, referring to a didgeridoo).
4.2.3. Classifiers in IUR

When it comes to verbal classifiers, the data reveal that IUR, just like many other sign languages, employs both handling (4.2.3.1) and entity (4.2.3.2) classifiers. Remember that SASSes are not included in the discussion, but they are indicated in the glosses as SASS and the specified property is indicated by a subscript. Handling classifiers are indicated with HC, and entity classifier with EC. The different forms that were extracted from the data are listed in Table 4.4 and Table 4.5. Data in this section comes from the spontaneous data, as well as from the Canary Row Task data from both Baker Lake and Rankin Inlet, the Nunavut Travel Picture Task data from Rankin Inlet, and the Zwitserlood Picture Task data from Baker Lake. (see section 1.3.2).

4.2.3.1. Handling classifiers

Handling classifiers occur with transitive verbs and mark the direct object. Five different handshapes were identified in the IUR data (see Table 4.4). These can occur with verbs such as CARRY, GIVE, HOLD, PUT, PICK, and TURN. In the table, they are listed in the order of their frequency of occurrence in the data. Note that the classifier handshapes are pictured with all joints tense. However, in IUR, most often the joints are laxer (see section 2.1.1). In the glosses, the handling classifiers are glossed according to their form. As the handshape font is a stylised image of the handshapes, and as it would be very difficult to read the handshape font as subscript, a letter is used to refer to the specific handling classifier. The letters are loosely based on the ASL manual alphabet. The glosses used are indicated in Table 4.4 in the right-hand column.

Table 4.4: IUR handling classifiers.

<table>
<thead>
<tr>
<th>Handling classifier</th>
<th>Referent</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Handshape Image" /></td>
<td>Long, thin objects; e.g. fork, animals, rope Note: these handshapes are considered allomorphs</td>
<td>HC_s HC_a HC_as</td>
</tr>
<tr>
<td><img src="image" alt="Handshape Image" /></td>
<td>Small and/or thin objects; e.g. insects, needle</td>
<td>HC_o</td>
</tr>
<tr>
<td><img src="image" alt="Handshape Image" /></td>
<td>Round or cylindrical objects; e.g. jar, small ball</td>
<td>HC_c</td>
</tr>
<tr>
<td><img src="image" alt="Handshape Image" /></td>
<td>Larger objects; e.g. box, container</td>
<td>HC_b(2h)</td>
</tr>
<tr>
<td><img src="image" alt="Handshape Image" /></td>
<td>Small and round objects; e.g. chips of ice, berries</td>
<td>HC_h</td>
</tr>
</tbody>
</table>
The $\text{\textcopyright}$-classifier and its allomorphs are used to classify the handling of long and thin objects. For example, a dead swan would be carried by its neck – a long and thin object. Therefore, the handling classifier that combines with the verb HOLD in (32) is a $\text{\textcopyright}$-hand.

\begin{verbatim}
look-around
(32)  SWAN INUK HOLD:HC$\textsubscript{as}$ DARK NIGHT SHOOT DIE
     ‘A man secretly wants to shoot a swan at night.’
\end{verbatim}

The $\text{\textcircled{c}}$-classifier is used with objects that are small and thin, as for example the needle in (33). The sequence of video stills in Figure 4.10 illustrates the second sentence including the classifier predicate.

\begin{verbatim}
(33)  TWO-WEEK WEEK PRO$\textsubscript{1}$ DOCTOR INDEX. PUT$\textsubscript{eye}$:HC$\textsubscript{0}$ CLEAR-UP PALMS-UP. RIGHT-EYE BAD BLURRY. PALMS-UP
     ‘In two weeks, I’ll go to the doctor. He’ll put a needle in my eye to clear it up, hope it works. My right eye is bad, all blurry. Don’t know why.’
\end{verbatim}

![Figure 4.10: Video stills of PUT$\textsubscript{eye}$:HC$\textsubscript{0}$ CLEAR-UP PALMS-UP.]

The $\text{\textcircled{x}}$-classifier is always two-handed, and usually refers to the handling of large and/or heavy objects, like boxes or carvings. The handshape is somewhat lax, and the fingers may be spread a little. In the construction HOLD:HC$\textsubscript{b}$ in (35), the $\text{\textcircled{x}}$-classifier refers to the handling of a carving.

\begin{verbatim}
(34)  SASS$\text{round-item}$ HOLD:HC$\textsubscript{c}$ 40. SASS$\text{round-item}$ FINE
     ‘I held the jar, it was 40 dollar, I was amazed. For a big jar that is good!’
\end{verbatim}

The $\text{\textcircled{\textcircled{c}}}$-classifier is always two-handed, and usually refers to the handling of large and/or heavy objects, like boxes or carvings. The handshape is somewhat lax, and the fingers may be spread a little. In the construction HOLD:HC$\textsubscript{b(2h)}$ in (35), the $\text{\textcircled{\textcircled{c}}}$-classifier refers to the handling of a carving.

\begin{verbatim}
(35)  GOOD PRO$\textsubscript{1}$ PL. CARVE. TAKE-PICTURE HOLD:HC$\textsubscript{b(2h)}$ TAKE-PICTURE++
     ‘We will do the carving. Someone will take pictures while I show it.’
\end{verbatim}
The \(-\)-classifier is used for small and round objects, like berries, or small and non-flat objects, like pieces of ice, as in (36).

\[
\begin{array}{ccc}
\text{hs} & \text{ch pf} & \text{swallow} \\
\text{WATER NEG-I DRINK. SASS}_{\text{mountain. INUK CHOP++ THIRST TAKE}_{\text{mouth;HC}}_{\text{ch \0}}} \\
\end{array}
\]

'It is not water for drinking. It is an iceberg. Inuit chop pieces of it when they are thirsty, and swallow them.'

Different handling classifiers may combine with the same verb, as is evident from examples (32), (34), and (35), where the verb HOLD is used with three different classifiers (\(\uparrow\), \(\Downarrow\), and \(\leftarrow\), respectively).

As can be seen in Table 4.4, the \(\uparrow\), \(\Downarrow\) and \(\leftarrow\)-hand are considered allomorphs of a single classifier. Based on the current data, it was impossible to determine whether they occur in distinctive contexts, especially since this set of handshapes is rather lax – as is generally true for IUR handshapes. An analysis of these handshapes as allomorphs, however, may also hold for other sign languages, as the handshapes are rather similar in form, and only differ in thumb position. The classifier may be a base form that consists of a closed handshape referring to grabbing objects of various size. Still, in other sign languages, for instance in NGT, the \(\leftarrow\)-hand has been analysed as a separate classifier based on the observation that it refers to a specific class of objects (Zwitserlood 2003); in IUR, however, this appears not to be the case.

Two other handshapes posed a similar analytical challenge, as they are both used for the manipulation of small objects. These are the \(\uparrow\) and \(\Downarrow\)-hands, but again the forms in IUR are looser and laxer. The two handshapes differ in the number of selected fingers: in \(\uparrow\) the index finger and thumb are selected, while in \(\Downarrow\) the middle finger is also selected. The differences between the direct objects classified by these two handshapes are subtle, and I initially thought they might be allomorphs as they are both used in the manipulation of small objects. Closer inspection, however, revealed that the contexts of use may overlap but they are not identical. In the data, the \(\Downarrow\)-hand is used with small objects that are round, or at least not flat, for example a chip of ice as seen in (36), or a berry in (37.a). In contrast, the \(\uparrow\)-hand is used to classify small objects that are thin or long or flat (or a combination thereof), like a needle in (33), or a piece of paper as in (37.b).

\[
\begin{align*}
(37) & \text{a. SCRAPE PICK:HC}	ext{b EAT. AROUND PLANTS WARM} \\
& \text{‘They scrape the ground, and pick berries to eat. There are plants around as it is summer.’}
\end{align*}
\]

\[
\begin{align*}
(37) & \text{b. GET OPEN-TICKET. 500, PUT}_{\text{breastpocket;HC}}_{\text{o- OPEN-TICKET NEG-1}} \\
& \text{‘I got them and opened the tickets\textsuperscript{23}. Wow, 500 dollars! I put them in my breast pocket. The other ticket had nothing.’}
\end{align*}
\]

\textsuperscript{23} These tickets are instant-win lottery tickets, commonly known as Nevada tickets, but also known as pull-tab or Break-Open tickets.
The direct object with which the verb agrees, may or may not be overtly present in the sentence. In (38.a), the direct object of HOLD (i.e. BIRD SASS cage) precedes the classifier predicate, but the object of LIFT-UP (i.e. a sheet) is not specified, neither in the sentence nor in the context. The same is true for (38.b), where the heavy object that is carried and thrown remains unspecified. Leaving referents unspecified is a common phenomenon in IUR, as has previously been described for the arguments of verbs in section 4.1.3 above.

(38) a. BIRD SASS cage HOLD:HCₐ WALKₐ RUB-HANDS LIFT-UP:HCₐ

‘(The cat) holds the birdcage and walks away. He rubs his hands, and lifts up (the sheet).’

b. CARRY:HCₐ THROW:HCₐ MOVE:ECᵥ

‘(The cat) carries something heavy, throws it, and then is shot up in the air.’

The selection of handshapes in handling classifiers is fairly systematic – a fact which motivated the decision to analyse them as agreement markers. Verbs that agree with the same direct object, or with a direct object of similar shape in other sentences, consistently undergo the same handshape change. For instance, the direct object of GIVE in (39) is the same direct object as in (34), namely a jar, and the same classifier is used. As can be seen in the second and third occurrences of GIVE in (39), handling classifiers are not obligatory on the verb, a characteristic also described for verbal classifiers in spoken languages (Aikhenvald 2000; Grinevald 2000). Interestingly, Zwitserlood (2003) argues that classifiers are obligatory on verbs of motion and location in NGT.

(39) GIVE:HCᵥ, GIVE₃ 40 PRO₁ ELDER GIVE₃

‘I gave the jar to him, then gave him 40 from my dad.’

I can conclude from the current data that handling classifiers are fairly consistently used to refer to the same set of referents. In other words, the classifiers are used systematically. Phonetic analysis further reveals that IUR classifier handshapes, just as other handshapes (see section 2.1.1), are generally rather lax compared to those in urban sign languages.

4.2.3.2. Entity classifiers

Typically, entity classifiers occur on verbs expressing motion (such as MOVE, FALL) and/or location (e.g. BE-LOCATED), thereby expressing agreement with the subject argument. In fact, some of the entity classifiers can combine with both static and movement roots, and these roots in turn may combine with different entity classifiers. Entity classifiers were identified that refer to animals, people, and igloos, as well as two classifiers for birds. Furthermore, entity classifiers for long, thin objects were observed, as well as a classifier for wide, flat objects. A full overview is given in Table 4.5. Again, the classifiers are
picted with all joints tense, although generally, handshapes are laxer in IUR (see section 2.1.1). As in Table 4.4, the classifiers are glossed with a subscript letter, as shown in the right-hand column.

**Table 4.5:** IUR entity classifiers.

<table>
<thead>
<tr>
<th>Entity classifier</th>
<th>Referent</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Wide, flat object; Horizontal: e.g. mat, surface, vehicle, marine mammals Vertical: e.g. wall, fish, animal, bird in flight</td>
<td>$EC_{b1}$ $EC_{b2}$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>When fingers point up: flying birds (plural) When fingers point forward and wiggle: animals moving Idem, and two handed: many animals moving</td>
<td>$EC_5$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Two-legged being, both animate and inanimate</td>
<td>$EC_V$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Long, thin entity; e.g. chisel, stick Note: handshapes are considered allomorphs</td>
<td>$EC_1$ $EC_h$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Hole</td>
<td>$EC_I$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Seal</td>
<td>$EC_s$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Tall, circular object; e.g. lamp, pole</td>
<td>$EC_c$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Igloo</td>
<td>$EC_{5c}$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Two-legged inanimate object; e.g. trestle</td>
<td>$EC_{be}$</td>
</tr>
<tr>
<td><img src="image" alt="classifier" /></td>
<td>Animal foot</td>
<td>$EC_e$</td>
</tr>
</tbody>
</table>

As in many other sign languages, the $\beta$-hand classifier is used to denote wide and flat objects. When the palm is oriented downward, it may refer to objects that have a relatively flat, horizontal surface, such as e.g. vehicles. In (40), the two vehicles are left unspecified; the sequence [CAR CRAP INDEX-LOC PERSON] is a complex noun phrase that refers to a
person, namely the man who drives the sewer truck. Whether his truck is actually one of the vehicles referred to by the two EC_b1 classifiers remains unclear.

(40) \[ \text{CAR CRAP INDEX-LOC PERSON PRO} \text{\textunderscore MOVE:EC}_{b1} \text{-AFTER-EC}_{b1} \]

‘The man who drives the sewer truck and I will follow each other by vehicle.’

When the \( \text{\textunderscore} \)-classifier is used with the palm sideward, it denotes vertical surfaces and certain animals. In (41), the classifier is used with the fingers pointing forward to denote a musk ox. The other hand then produces the \( \text{\textunderscore} \)-classifier repeatedly in a circular motion around the classifier on the dominant hand to denote the defensive circles that musk oxen form to protect their young.

(41) \[ 15 \text{ MUSK-OX BE-LOCATED-EC}_{b2} \text{ BE-LOCATED-IN-CIRCLE:EC}_{b2}. \text{ SKIDOO GO}_{\text{circular}} \]

‘15 musk oxen formed a circle. I drove around them on my skidoo.’

The \( \text{\textunderscore} \)-classifier is used to refer to animals moving, be it on land or in the sky. The orientation of the classifier differs accordingly. When the fingers point forward, and the palm downward, the classifier refers to animals moving on land. In (42.a), it refers to the dogs pulling the sled (see Figure 4.8.a). When the classifier is two-handed, it refers to many animals moving. In (42.b), the two-handed classifier refers to wolves that were introduced in the preceding sentence (see Figure 4.8.b).

(42) a. \[ \text{INDEX BAKER-LAKE DRIVE-DOGSLED MOVE}_{\text{Baker:EC}_{5}} \]

‘We drove a dogsled to Baker Lake, the dogs ran there.’

b. \[ \text{FIRE-SHOTGUN FIRE-SHOTGUN MOVE}_{\text{EC}_{5(2h)}} \]

‘I fired my shotgun twice, and they ran away.’

When the fingers point upward, often with an extended arm, the \( \text{\textunderscore} \)-classifier refers to a flock of flying birds. This classifier differs in the spreading of the fingers from the lax \( \text{\textunderscore} \)-hand classifier, which may be used to refer to the movement of a single bird. Both classifiers can be used in the same sentence, as can be seen in (43) where the first entity classifier predicate \( \text{MOVE}_{1:EC}_{5} \) indicates a flock of geese flying in, while the second one, \( \text{upFALL}^{++:EC}_{b2} \), which is reduplicated, refers to the single birds falling from the air after being shot.
a. MOVE\textsubscript{baker}:EC\textsubscript{5} ‘animals ran’

b. MOVE\textsubscript{c}:EC\textsubscript{5(2h)} ‘many animals ran’

\textbf{Figure 4.11:} The \textsubscript{\gamma} -classifier as used in example (42.a) and (42.b) respectively.

\begin{quote}
(43) \texttt{GRAB LOAD-GUN HOLD:HC\textsubscript{as} MOVE\textsubscript{1}:EC\textsubscript{5} SHOOT\textsuperscript{++} up \texttt{FALL\textsuperscript{++}:EC\textsubscript{b2}}.

‘I’ll grab and load my gun, then hold it. The birds will fly to me and I’ll shoot them, and they’ll fall down.’
\end{quote}

In many sign languages, the \textsubscript{\gamma} -classifier, with the fingertips pointing downward, is used to denote two-legged beings. This is also the case in IUR, as is illustrated in (44) in which the \textsubscript{\gamma} -classifier is used to indicate a person swinging around a horizontal bar.

\begin{quote}
(44) \texttt{HAMMER SASSpole POLE TWO-POLES ROPES-ON-TWO-SIDES}.
\texttt{TURN:HC\textsubscript{c} SWING:EC\textsubscript{v} TURN:HC\textsubscript{c} SWING:EC\textsubscript{v}}

‘They put up a horizontal bar, and people swung around it.’
\end{quote}

In many sign languages, two-legged beings such as people, may also be represented as entities by the \textsubscript{\hat{\gamma}} -classifier, representing them walking upright for instance (e.g. Zwitserlood (2003) for NGT). In IUR, the \textsubscript{\hat{\gamma}} -classifier appears not to be used in this way. Rather, the \textsubscript{\hat{\gamma}} -classifier only denotes non-human long thin entities, like sticks, chisels, or the drill of an ice auger, a use that has also been described for other sign languages. In (45), the \textsubscript{\hat{\gamma}} -classifier is combined with the \textsubscript{\zeta} -classifier on the non-dominant hand, which denotes holes (see Figure 4.12). This sentence is part of an explanation regarding a particular type of ice fishing, and was preceded by an extensive explanation of how the rope was braided, how the trestle with the stick was set up, and how the hole was drilled.

\begin{quote}
(45) \texttt{BE-LOCATED:EC\textsubscript{1}-ON-EC\textsubscript{f}}

‘The stick was on top of the hole.’
\end{quote}
The \( \hat{\text{f}} \)-classifier can also be used for long and thin objects, but it is not clear whether the two handshapes (\( \hat{\text{f}} \) and \( \hat{\text{r}} \)) constitute allomorphs or are used in different contexts, as the use of the \( \hat{\text{f}} \)-classifier was observed only once in the data. The choice for the \( \hat{\text{f}} \) or the \( \hat{\text{r}} \)-classifiers might have to do with affectedness, or external control. In a story regarding the dropping of a chisel, the signer tells how he will try to recover the sunken chisel with a magnet. When talking about the chisel, the signer uses the \( \hat{\text{f}} \)-classifier. Subsequently, when talking about the magnet that they will lower on a rope, he uses the \( \hat{\text{r}} \)-classifier. Then, referring to the chisel again, he uses the \( \hat{\text{f}} \)-classifier. This is shown in example (46).

(46)  

\[
\text{SASS small-round-object } \text{LOWER:HC}_a, \text{SASS long-thin-object } \text{MOVE}_{\text{down}}:\text{EC}_h, \text{FALL:EC}_h, \text{CHISEL} \text{PICK-UP PULL:HC}_a, \text{GRAB PALMS-UP}, \text{CHISEL MOVE}_{\text{down}}:\text{EC}_1
\]

‘A small round object, we will let it down by rope. It will move down and fall over. It will pick up the chisel, and we will pull up the rope. I will grab it, probably. The chisel sank down.’

From this single example, it might be tempting to deduce that the \( \hat{\text{f}} \)-classifier is used for long, thin entities that move by themselves, and that the \( \hat{\text{r}} \)-classifier is used for long, thin entities that are controlled by an agent. However, as this is the only occurrence of the \( \hat{\text{f}} \)-handshape used as an entity classifier, this conclusion is tentative. For now, the two classifiers are analysed as allomorphs.

The \( \hat{\text{j}} \)-classifier denotes seal. Note that this classifier was already discussed in section 2.2.2.1, and illustrated in Figure 2.11. It is possible that the classifier lexicalised in the sign SEAL, but it may also be that the handshape of SEAL formed the basis of the classifier. In any case, the classifier can be used to indicate the moving of the animal. In (47) an example containing the lexical sign and the classifier predicate is given; both are pictured in Figure 4.13.

(47)  

\[
\text{INDEX SEA L SMALL SEAL MOVE-UP:EC}_{\text{as}}
\]

‘A seal has a small hole. The seal moves up through the hole.’
The \(\text{SEAL}\)-classifier is used to denote tall, thin, pole-like objects, like street lights and lamps. In (48), this classifier is used to localise different streetlights. Interestingly, the \(\text{SEAL}\)-classifier is preceded by a Size and ShapeSpecifier \(\text{INDEX}\). The preceding sentence described how the rocks of the road are covered with snow, and that therefore the road is hardly visible. The various instantiations of the classifier predicate \(\text{BE-LOCATED} : EC_c\) are located along the previously indicated road.

(48) \(\text{SASS}_{\text{long-thin-object}} \text{BE-LOCATED} : EC_c \text{INDEX BE-LOCATED}++ : EC_c \text{LIGHT SEE}_{\text{up-and-down}}\)

‘The street lights that are along the road are alight, and you keep track of them.’

A specific classifier for igloos exists, which is a loose \(\text{UK}\)-handshape. In (49), the referent of the classifier has to be deduced from the context, but it can only refer to igloos. Note that possibly, this classifier can also be used for other buildings, but there were no examples in the data.

(49) \(\text{ch.in} \quad \text{ch.pf}\)

(49) \(\text{THIN ALL INUK BE-LOCATED}++ : EC_c \text{ PALMS-UP EAT}\)

‘All Inuit were thin, in many igloos there was no food.’

The \(\text{L}\)-classifier is observed only twice in the data, on both occasions denoting trestles that are put down next to a hole. As for example (50), the hole has been introduced in the preceding sentence.

(50) \(\text{BE-LOCATED}++ : EC_{hc} \text{ PUT}_{\text{down}} : HC_a \text{ WALK SLEEP}\)

‘The trestles were located (next to the hole), and I put a horizontal stick down (across the hole). Then I walked away and went to sleep.’

Finally, the \(\text{0}\)-classifier occurs only once in the data, and refers to the feet of a caribou in this example. The exact translation of this example is not entirely clear as it was part of a long story about a specific type of traditional fishing equipment.
The above discussion reveals that some classifiers are rather specific, and can only refer to one specific referent. The -classifier refers to moving animals of different kinds, but when the fingers point upward and the arm is extended, the classifier can only refer to a flock of birds. The -classifier with the fingers pointing down is restricted to referring to two-legged beings. Since both these classifiers can only refer to these particular referents, the referent does not need to be overtly expressed in the sentence, as can be seen in (43) for the -classifier and in (44) for the -classifier. However, this does not mean that it is not possible to specify the referent, as can be seen in (52), where referent BIRD is introduced prior to the use of the -classifier.

(52)  MONTH+++, THREE+1, WARM, BIRD MOVEhere:EC5
    ‘In three months, when it’s warmer, the birds will be flying here.’

The other classifiers are more generic, and usually require mentioning of a referent in the context, since they can refer to different types of entities, both animate and inanimate. As has also been observed for other sign languages (inter alia Zwitserlood 2003; Schembri 2003), two classifiers may be combined simultaneously to form one meaningful construction. In this case, each hand takes a different classifier and thus adds a specific meaning to the complex construction. In (53), for instance, two -classifiers are used in an entity classifier predicate, in which the left hand refers to an inanimate entity, the sea ice, while the right hand refers to an animate entity, a walrus baby. This two-handed construction is the final sign in (53); it is glossed as MOVE:ECb1-ON-TOP-OF-ECb1 A still of the initial and near-final position of this sign is given in Figure 4.14. Note that the sign SWIM+HOLD:HCb is a simultaneous compound, in which the signer imitates holding something while swimming: the left hand signs HOLD:HCb, the right hand signs SWIM.

(53)  WALRUS WHISKERS BIG. BABY WALRUS BABY HOLD. WALRUS SWIM+HOLD:HCb
    _____ lowered-head                 lowered-head-moves-up
    SWIM+HOLD:HCb, WALRUS FEMALE BABY headMOVEforward:ECb1 ICE SASSsurface
    MOVE:ECb1-ON-TOP-OF-ECb1
    ‘A walrus has whiskers, and is big. She is swimming while holding her baby, also diving under. The female walrus pushes her baby with her head up the ice.’
Admittedly, such complex constructions are better glossed with a separate tier for both hands, as the gloss \texttt{MOVE:EC}_{b1}-\texttt{ON-TOP-OF-EC}_{b1} is not fully transparent. For the sake of simplicity, it has been decided not to gloss all examples with separate tiers for the two hands, but example (54) illustrates what such a gloss would look like. If the gloss is identical in both lines, then a two-handed lexical sign is referred to. In this sentence from the Canary Row Task, Sylvester the Cat is described as swinging on a rope and bumping into the wall of the building where Tweety Bird lives. The right hand represents the cat by means of the upside down \texttt{\textdagger}-classifier for two-legged beings, which moves towards the left hand, which represents the wall with a \texttt{\textbullet}-classifier. This construction thus yields the complex meaning ‘two-legged being bumping into a wall’. The video still in Figure 4.15 illustrates the initial position of the two hands in this classifier predicate.

\begin{verbatim}
(54)  RH: CAT WINDOW HOLD:HC_a  MOVE:EC_v
      LH: CAT WINDOW HOLD:HC_a  BE-LOCATED:EC_{b2}
'Vee cat swings from the window on a rope, and bumps into the wall.'
\end{verbatim}

\textbf{Figure 4.14}: Still of initial and near-final position of the classifier predicate \texttt{MOVE:EC}_{b1}-\texttt{ON-TOP-OF-EC}_{b1}.

\textbf{Figure 4.15}: Start position of classifier predicate meaning ‘two-legged being bumps into a wall’.
4.2.4. Discussion and typological comparison

In IUR, both handling and entity classifiers have been identified. It is useful to compare the findings for IUR to those reported for urban and village sign languages. I use NGT as representative for the urban sign languages, as its classifier system has been described in detail. For village sign languages, I compare IUR to several of the available descriptions, as this group is more heterogeneous then the urban sign languages appear to be.

When comparing my survey of IUR classifiers to the extensive description of NGT classifiers provided by Zwitserlood (2003), I see that the set of IUR classifiers is comparable to that of NGT, although the IUR set is somewhat smaller. Zwitserlood describes a total of 17 handshapes that can function as classifier morphemes, eight of which can be used as handling classifiers, and 15 as entity classifiers – that is, there are six handshapes that can be used as both handling and entity classifier. For IUR, I found 16 different handshapes, several of which, however, were considered allomorphs. If I group these allomorphic handshapes together, 13 different classifier handshapes remain. Five of these function as handling classifiers and ten as entity classifiers – meaning that only two handshapes can be used both as an entity and handling classifier. First I look at handling classifiers, and then at entity classifiers.

With respect to handling classifiers, IUR patterns with YSL, as both have five handling classifier handshapes (Bauer 2012). For NGT, eight handling classifier handshapes have been described (Zwitserlood 2003). Nyst (2007) concludes that handling classifiers are found in AdaSL, but that they do not occur very frequently. However, the handshapes used in IUR and YSL are not identical; only the -classifier is used in both sign languages, but not for the same referent class. In IUR, this handshape is used to classify the handling of long and thin objects such as a rope or gun, while in YSL, it classifies thin objects such as paper.

An interesting phenomenon found in the IUR classifier system, and one that has not been described for other sign languages, is that of the allomorphic classifier handshapes. Remember that the set consisting of the handling classifiers \( \cdot \), \( \cdot \) and \( \cdot \) has been analysed as different realisations of the same classifier, thus these classifiers are considered allomorphs. If these classifiers were not allomorphic, they would be expected to refer to referents with different specific qualities. Such differences, however, could not be identified in this study, and are not expected to be found in further research. In support of the allomorph analysis is the fact that these handshapes are probably not phonological handshapes either, that is, they are also allophones (see section 2.2.1). I therefore conclude that these three classifiers are allomorphs. When comparing these handshapes to the handling classifiers described for NGT, it is interesting to note that in NGT, the \( \cdot \)- and \( \cdot \)-classifier are both used to represent the manipulation of long, thin entities. However, “while the former represents entities that need manipulation with some force, the latter appears to represent entities that need more careful handling” (Zwitserlood 2003:105). That is, while no difference in the manner of manipulation of an object has been found for IUR (the three handshapes were for instance used to refer to the handling of one and the same object,), Zwitserlood was able to identify such a difference for NGT, which suggests that these classifier handshapes are not allomorphs in NGT.
In contrast, with respect to the \( \text{\textbullet} \) and \( \text{\textbullet} \) handling classifiers, I suggested above that these should be analysed as different classifiers and not as allomorphs. The first is used to classify objects that are small and flat and/or thin, the latter is used to classify objects that are non-flat, but still small.

Let me now turn to entity classifiers. Compared to village sign languages, IUR is akin to Kata Kolok, for which Marsaja (2008:173f) identifies eight different entity classifier handshapes. Other village sign languages, however, have fewer entity classifiers. For AdaSL, Nyst (2007) describes four possible entity classifiers; crucially, however, these are only used in the expression of motion and location in relation to the body, and only infrequently and in specific contexts. In fact, Nyst concludes that AdaSL has “no extensive, conventional system of productive entity classifier predicates” (p. 172). For YSL, Bauer (2012) describes three entity classifiers, two of which classify only one referent instead of a semantic class. IUR thus falls between Kata Kolok and NGT, confirming my hypothesis that – similar to what we discussed for agreement – a continuum of entity classifier systems can be found (Schuit, Baker & Pfau 2011). At the one extreme end of this continuum, sign languages without a system of entity classifier predicates, such as AdaSL, can be located, while at the other extreme end, we find sign languages that make abundant and systematic use of classifier predicates. NGT might come close to this extreme, but it is possible that other sign languages make use of even more entity classifier handshapes.

Beyond these quantitative differences, qualitative differences in the use of entity classifiers across sign languages are found, too. On the one hand, the handshapes used to refer to a specific referent may differ. On the other hand, also different referents are classified. Some of these differences can be explained by cultural and/or geographical factors. For instance, having an entity classifier for igloos and seals is important in IUR, but obviously much less so in NGT or Kata Kolok. Similarly, having two classifiers for fighting roosters – one for roosters fighting with spread wings (Marsaja 2008:175) – is relevant for the people using Kata Kolok, but not for those using NGT or IUR. Finally, Bauer (2012:203) describes the \( B \)-classifier representing a didgeridoo in YSL, an instrument important to Yolngu culture. In chapter 5, I will address further environmental factors that may have an influence on language structure.

It is interesting that the \( \text{\textbullet} \)-classifier in IUR is not used to refer to people, in contrast to what has been described for many urban sign languages and also some village sign languages. For Kata Kolok, this handshape is described as a possible variant used to classify people (Marsaja 2008:174). On the other hand, Nyst (2007) does not describe this classifier as occurring in AdaSL, nor does Bauer (2012) for YSL. In IUR, just as in YSL, only the \( Y \)-classifier is used to refer to people, and other two-legged animate beings.

As with the handling classifiers, only little information is available concerning allomorphic entity classifier handshapes in other sign languages. Zwitserlood (2003) describes one example related to entity classifiers, the \( \text{\textbullet} \)- and \( \text{\textbullet} \)-classifier, which are both used in NGT as entity classifiers for two-legged animate beings, no matter whether they are human or non-human. As for IUR, I was not able to analyse sufficient data in order to determine whether the two entity classifiers referring to long, thin objects (the \( \text{\textbullet} \)-classifier
and the ◁-classifier) are used in different contexts, depending on whether the object is controlled or self-moving. For now, these two classifiers have been analysed as allomorphs.

Taken together, I can conclude that IUR patterns with urban sign languages in that it has fairly extensive systems of both handling and entity classifiers, and both types show a behaviour similar to that described for classifiers in urban sign languages. On the continuum of entity classifier use proposed in an earlier study (Schuit, Baker & Pfau 2011), IUR may be placed in the middle. Sign languages such as AdaSL would fall more to the end of the continuum with no classifiers, followed by YSL which has three entity classifiers. Next along the continuum, Kata Kolok would be located followed by IUR. NGT would be located more towards the end of many classifiers, especially since the use of entity classifiers on predicates in NGT is mandatory.

4.3. Conclusion

The verbal system of IUR, in particular, the behaviour of verbs with respect to location and handshape agreement, displays similar patterns as described for other sign languages. Most importantly, the patterns I was able to identify are reminiscent of those most commonly found in urban sign languages24. First, the three verb categories described for those sign languages, that is plain, agreeing and locative verbs, can be found in the IUR lexicon as well. The latter two types allow for the expression of verb agreement by means of spatial inflection. With respect to verb agreement, IUR thus exhibits more similarities with urban sign languages than with village sign languages. The main difference between IUR and urban sign languages lies in the fact that IUR allows for the use of absolute locations both in pointing signs and on agreeing/locative verbs, thus patterning with village sign languages in this domain.

Second, IUR is also similar to urban sign languages with respect to classifiers in that it has both handling and entity classifiers. Compared to other village sign languages, IUR has a more elaborate and consistent classifier system than most of them, although it has to be pointed out that Kata Kolok appears to pattern with IUR in this respect. Given that classifiers have been argued to be a form of agreement, too, it seems that the IUR system of verbal inflection as a whole could be placed on a continuum between urban and village sign languages. Since handling classifiers are used less systematically, these have not been included in the continuum.

We suggested combining our proposed continua of verb agreement and entity classifier predicates in one graph (Schuit, Baker & Pfau 2011), which is pictured in Figure 4.16. The sign languages mentioned in this chapter have been placed in this graph, based on the data discussed. Data regarding a quantification of Auslan entity classifiers was not available, nor was data on NGT verb agreement. Yet, I do know that both sign languages make frequent use of agreement, and therefore they are placed at the same location in the graph. It should be noted, however, that they may in fact differ with respect to the proportion of

24 Remember from the discussion in section 2.2.2.1 that IUR also patterns with urban sign languages – in particular, DGS – in the area of nominal inflection.
verb agreement and the number of entity classifiers. More research is required to allow for a final placement of these two (and hopefully other urban and rural) sign languages.

As was discussed in section 1.1.2.2, the morphological systems of spoken languages are classified along the indexes of fusion and synthesis (Comrie 1989), and such a classification is possible for sign languages, too. I argued that sign languages are agglutinative languages, although the morphemes predominantly combine simultaneously with a stem, rather than sequentially, which is the most common pattern in spoken languages. Since IUR makes frequent use of verb agreement and entity classifiers, and thus allows for the simultaneous affixation of morphemes, it can be also classified as an agglutinative language.

Furthermore, I suggested adding an index of simultaneity in order to account for the varying degrees of simultaneous morphological processes found in different languages (Schuit 2007). While spoken languages do allow for simultaneous morphology, sign languages generally feature much more simultaneity in their morphological systems – as this type of morphology is facilitated by the phonological make-up of signs. The graph in Figure 4.13 might very well be a representation of this index for sign languages, since it combines two continua of simultaneous morphological agglutination.