(In)definiteness and (non-)specificity marking in Catalan Sign Language (LSC)

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Abstract
Bringing together the areas of sign language semantics-pragmatics interface and discourse reference, this article offers a description of how indefiniteness and (non-)specificity is encoded in Catalan Sign Language (LSC). By using a combined methodology of corpus data and grammatical tests, the present proposal shows that the encoding of definiteness and specificity in LSC is achieved by three main means, namely lexical signs, the use of nonmanuals, and the use of signing space. While the kinds of signs used are parallel to spoken language's strategies (i.e. interrogative signs, generic ontological-category nouns, etc.), LSC also makes use of the natural means offered by the visual-spatial modality. Therefore, particular nonmanual markings aligned with the NP together with manual modulations of signs in signing space are also used when conveying different referential status of the entities introduced in the discourse.

Keywords: Catalan Sign Language (LSC), definiteness, discourse, indefiniteness, pronouns, reference, signing space, specificity

1 Introduction

As natural languages, sign languages are supplied with a wide range of referring terms to refer to discourse referents. During a conversation, signers may use indefinite or definite descriptions, proper nouns or pronominal forms depending on the degree of knowledge of the discourse referent that the conversation participants have, as well as the degree of prominence of the discourse referent at a particular point in discourse. The degree of knowledge and prominence comprise the so-called referential status, which represents an absolute property of discourse referents reflected through the formal marking of NPs. The referential status is dependent on the introduction and
recuperation of the referent at a contextual scale and, unlike information packaging that acts at the sentential level, it is articulated at a larger context (i.e. discourse structure).

Besides some exceptions, few studies have dealt with the formal marking of definiteness and indefiniteness in sign languages and even more with the connection between signing space and (in)definiteness marking (see section 2.3 for an overview and the corresponding references). What has been extensively assumed from the beginning of sign language research is that discourse referents are identified with a location in signing space, that is the three dimensional extent in front of the signer's body. A discourse referent is assigned a certain location on the horizontal plane and may be referred back to later in the discourse (Klima & Bellugi 1979). Such spatial location associated with an entity is called "referential locus" or "r-locus" (Lillo-Martin & Klima 1990). The horizontal plane, which lies perpendicular to the body of the signer, is the default plane where the majority of signs are localised (Figure 1).

![Figure 1. Extension of horizontal plane](image)

Interestingly, in Catalan Sign Language (LSC) discourse referents are not only localised on the horizontal plane, but they may also be localised on the frontal plane (Figure 2), which extends parallel to the signer's body (Brentari 1998).
As shown in the LSC utterances below, discourse referents may be associated with a locus established on the lower part of the frontal plane, as well as on the upper frontal plane. In (1) the NP ‘GROUP FRIEND SOME’ is associated with a lower localisation as the determiner SOME is articulated at a lower location (Figure 3).

(1)  GROUP$_{ip-1}$ FRIEND SOME$_{ip-1}$ INSIDE IX3$_c$ HIDE DURING YEAR-TWO.

‘Some of the friends were hidden there for two years.’

However, another excerpt from the same discourse shows an upper localisation of the NP ’IX3pl SOME’ (2) with the upper localisation of the determiner sign IX3pl ‘they’.

(2)  IX3pl$_{ip-u}$ SOME 1-DENOUNCE-3$_{ip-u}$ IX3$_c$ THERE-IS.

‘Someone denounced they were there.’
Locations established in the upper part of the frontal plane have already been described as an iconic feature used to denote social hierarchical relations, and more particularly superiority. The contrast between upper and lower frontal plane is associated with asymmetrical relations such as parents-children, boss-worker, professor-student, etc. In such contexts, an r-locus established on the upper part of the frontal plane denotes the individual who is higher in the social hierarchy. This use has been previously described for LSC (Barberà 2012, 2014; Morales-López et al. 2005), for Indo-Pakistani Sign Language (Zeshan 2000), and for ASL (Liddell 1990; Schlenker & Lamberton 2012; Schlenker, Lamberton & Santoro 2013). However, (1) and (2) show other instances of the use of signing space, which are not related to hierarchical relations. As will be proven in this article, these higher locations are also in charge of encoding the difference of knowledge between signer and addressee, and more concretely indefiniteness and specificity. In LSC, non-specific indefinite determiners and pronouns have an articulation directed to the upper frontal plane.

This article offers a thorough description of how reference is encoded in LSC. By using a combined methodology of corpus data and grammatical tests, it shows that the encoding of definiteness and specificity is achieved by three main means: (i) lexical signs, (ii) the use of nonmanuals, and (iii) the use of signing space. The two last items correspond to the natural means offered by the visual-spatial modality. The present account contributes to the young field of sign language semantics-pragmatics interface by focusing on the how referential status is encoded and, more concretely, how LSC signers mark the knowledge they have about the discourse referent.

The rest of the article is organised as follows. Section 2 offers an overview of the semantic-pragmatic categories in which this article is based, namely definiteness and specificity, both from a grammatical and from a theoretical point of view. It also presents
previous research concerning this topic in the sign language literature. Section 3 describes the data set used for the current piece of research and examines the grammatical tests used to identify the Noun Phrases (NPs) that belong to each category. Section 4 presents how definite NPs are marked in LSC, both manually and nonmanually. In section 5 the proposal is extended to indefiniteness and non-specificity marking. Finally, section 6 summarises the main findings and provides new proposals for future work.

2 Background

The traditional classification of referring terms is that of definiteness. This section presents the background of the two semantic-pragmatic categories in which this article is based. First, the notion of definiteness as currently defined in the literature is presented. Second, the notion of specificity is also described. Third, an overview of previous works in other signed languages that deal with these phenomena is offered.

2.1 Definiteness

Formally, NPs are divided into definite and indefinite. While definite NPs encode that both sender and addressee know the discourse referent, indefinite NPs mark that the addressee does not know the entity being talked about. The definite article in (3a) marks that the knowledge of the discourse referent is shared by the interlocutors. The indefinite article in (3b) marks that the addressee does not know the entity being talked about.

(3)  a. The article that we read last week was about definiteness.
    b. Next week, we will read an article about definiteness.

The range of NP types that have definiteness as part of their meaning include determiners (the English definite article the), demonstratives (this, that, those), proper nouns (Joana, Francesc), possessives (my, your, her), and personal pronouns (you, she, they). Indefiniteness is encoded with the indefinite determiner in languages that have so
(for instance, English a), generic ontological-category nouns (such as someone, something, somewhere in English), interrogative pronouns, one-based definite particles (English one, French on, German man), cardinals and quantifiers (such as most, many...).

From a theoretical point of view, definiteness is usually associated with uniqueness and familiarity. On the one hand, uniqueness approaches are built on the insight that a definite description is used to refer to entities that have a role or a property which is unique (Abbott 1999; Kadmon 1990). Uniqueness means that there is one and no more than one entity that has a particular property, as exemplified in (4).

(4) a. The sun is shining.
    b. The book is on the table.

On the other hand, pragmatic theories tend to treat familiarity and anaphoricity as the central notion for definiteness (Heim 1982; Kamp 1981; Roberts 2003). They are based on the idea that definite descriptions serve to pick out discourse referents that are in some sense familiar (i.e. identifiable) to the discourse participants, because they are co-present (5a), culturally shared and therefore part of the common ground (5b) or already mentioned in the discourse (5c).

(5) a. Just give the shelf a quick wipe, will you?, before I put this vase on it.
    b. The president is visiting the school tomorrow.
    c. An elegant dark-haired woman, a man with dark glasses and two children entered the compartment. I immediately recognized the woman.

Some approaches argue for a theory of definiteness that combines the two notions, i.e. uniqueness and familiarity. Based on corpora work, Fraurud (1990), Birner & Ward (1998) and Poesio & Vieira (1998) claim that in order to account for all definite NPs occurrences found in corpus, both uniqueness and familiarity together must be taken into account.
2.2 Specificity

Indefinite NPs are further categorised into specific and non-specific. While specific indefinite NPs exhibit a sender-addressee asymmetry since only the sender knows the discourse referent, non-specific indefinite NPs are symmetric since they mark that neither the sender nor the addressee know it. In English, for instance, the indefinite determiner \( a \) is used both for specific and non-specific NPs, as shown in (6). Although specificity is not overtly marked in the English determiner system, specificity has observable effects on co-reference. In English the kind of coreferential pronoun disambiguates the two possible readings (Partee 1970). Under the specific reading, the indefinite NP "a book" refers to an identifiable book (6a). Under the non-specific reading, Joana is looking for an element of the kind "syntax book", but there is not any concrete book that the sender has in mind when uttering (6b).

(6) Joana wants to read a book about syntax...
    a. but she cannot find it.
    b. but she cannot find one.

Specificity is encoded differently in each language. Some languages encode it in the article system, others encode it with affixes, and others lack encoding of this semantic-pragmatic notion. Samoan and Maori are two Polynesian languages with an article system that distinguishes specificity rather than definiteness (Lyons 1999). Samoan uses the article \( le \) with specific NPs, which indicates that the discourse referent refers to one particular entity regardless of whether it is definite or indefinite. The other article \( se \) is used with non-specific discourse referents, which do not refer to a particular, specified item (Mosel & Hovdhaugen 1992, cited in Lyons 1999: 57). In Maori, the article \( he \) (which does not distinguish number) is used when the kind of entity is crucial, and \( teetahi/eetahi \) when the number is significant (Bauer 1993, cited in Lyons 1999: 59). The meanings and patterns of use of Maori articles are not yet established, but it seems that its article system relates partly to the distinction between specific and non-specific, rather than definite and indefinite. Another way of marking specificity is by means of affixes. According to Enç (1991), Turkish encodes specificity with an accusative affix. As shown in (7), taken from Enç (1991: 6), when the NP has overt case morphology it
denotes a specific discourse referent. This contrasts with the minimal pair in (8), where the NP without case morphology denotes a non-specific entity. The indefinite NP with accusative case has a covert partitive reading and it introduces into the domain of discourse individuals from a previously given set.

(7) Iki kiz-i taniyordum
    Two girl-Acc I-knew
    'I knew two of the girls.'

(8) Iki kiz taniyordum
    Two girl I-knew
    'I knew two girls.'

Leaving aside the morphophonological marking, von Heusinger (2002, 2011) claims that from a theoretical point of view different kinds of specific indefinites are distinguished. The main distinction is organized into two dimensions, related to scope and referentiality. Scopal specificity is considered to distinguish indefinite NPs that are bound to an operator (like a verb of propositional attitude, negation or a quantifier) from those which aren't. Under the reading in (9a), there is a particular Norwegian woman and Frank wants to marry her. Therefore a specific reading arises. Under the reading in (9b), Frank's desire is that there is a woman who is Norwegian, whom he still does not know, and he would like to marry her. In (9b) the indefinite is interpreted inside the modal verb ‘want’. This is why the only felicitous continuation to get a non-specific reading needs a modal operator ‘will’.

(9) Frank wants to marry a Norwegian.
    a. He met her last year.
    b. He will move to Norway to try to achieve this goal.
Epistemic specificity, also known as identifiability, is related to the identification of the discourse referent from the sender. It is defined as the property of those indefinite NPs that are identifiable by the sender, i.e. those entities that are known and/or inherently identifiable. The following example shows this distinction. While (10a) corresponds to an epistemically specific discourse referent and it is thus identifiable by the sender, (10b) corresponds to an epistemically non-specific and thus unidentifiable discourse referent.

(10) A student cheated on the syntax exam.
    a. It is the blond lady that always seats on the back row.
    b. I wonder who it was.

Finally, partitive specificity refers to indefinite NPs that have a restricted set as a possible value. That is, they receive a partitive interpretation when the denotation of the NP is included within a given set (as shown by Enç (1991) in Turkish and exemplified in (7)). In English, for instance, sentences like (11) are examples of overt partitives. The partitive and non-partitive pairs in (11) and (12), respectively, are quite similar in interpretation. The main difference is that in the case of overt partitives (11), the quantification necessarily ranges over some specific, non-empty, contextually fixed set.

(11) a. Three of the books
    b. One of the books
    c. Some of the books

(12) a. Three books
    b. One book
    c. Some books

Once the background description has been presented, let's move now to the literature review of previous works in signed languages dealing with this topic.
2.3 Definiteness and specificity in signed languages

As already mentioned in the introduction of this article, since the beginnings of sign language linguistics research, it has been repeatedly noted in the literature that discourse referents are associated with spatial locations, which may be further referred back to in coreferential contexts (Klima & Bellugi 1979). Such spatial location is called “referential locus” or “r-locus” (Lillo-Martin & Klima 1990) and it may be established across sentence boundaries. Spatial locations have thus referential properties. However, whether definiteness is grammatically encoded in signed languages is still a matter of debate among linguists. Typological studies on the marking of definiteness across sign languages are very scarce and, so far, only descriptions of how definiteness is expressed in American Sign Language (ASL) and Hong Kong Sign Language (HKSL) are available. While the studies on ASL focus on the encoding of definiteness and specificity through the use of signing space, lexical signs and nonmanual marking, the study on HKSL concentrates mainly on the nonmanual behaviour. Their main claims are summarised in what follows.

According to some works, in ASL an index sign directed to signing space in a prenominal position is considered to be the formal marking of definiteness (Bahan et al. 1995; Bahan 1996; MacLaughlin 1997; Wilbur 2008). ASL marks indefiniteness with an upward direction of manual and nonmanual mechanisms, by establishing a spatial bigger region rather than an area (MacLaughlin 1997). Indefinite NPs are established on the upper part of the frontal plane with the determiner SOMETHING/ONE, which is an index finger pointing upwards, very similar to the numeral ONE. The difference with the numeral is that SOMETHING/ONE involves a slight circular movement of the forearm and the hand. Hence, definiteness in ASL is marked with an index pointing towards the lower part of the frontal plane, whereas indefiniteness is marked with an index sign, which co-occurs with a darting eye gaze, directed towards the upper part of the frontal plane. The slight circular movement of the manual component correlates with the degree of identifiability of the discourse referent: when the referent is identifiable, and hence specific, the tremoring motion of the manual sign is minimised. When the discourse referent is not identifiable, and hence it is non-specific, the movement is bigger and intensified, and the hand moves through a larger area in space (MacLaughlin 1997). Moreover, another distinction is that while definite determiners in ASL access a
point in space, indefinite determiners involve an articulatory movement within a spatial region rather than a point. Definiteness and specificity distinctions in ASL are not only marked in the manual component, but also nonmanually. As described in Bahan (1996), eye gaze to mark agreement also differs according to the (non-)specificity of the referent. While the expression of specific referents involves a direct eye gaze to the locus, non-specific referents involve a darting gaze generally towards an upward direction. This is important and we will see that LSC shares this upward darting eye gaze for non-specific reference.

For the case of HKSL, Tang & Sze (2002) describe a similar indefinite determiner as the one described for ASL. The sign ONE is articulated with the same handshape used for the definite determiner (B), but the index finger points upward. Unlike the indefinite determiner in ASL, in HKSL it does not involve a tremorous motion. When this sign is articulated, eye gaze is never directed to space but instead towards the path of the hand, suggesting that there is no locus established for the discourse referent. In fact, the (in)definiteness distinction is marked in the eye gaze behaviour: while definite determiners co-occur with an eye gaze directed to the locus, for indefinite specific ones eye gaze is directed towards the addressee (Tang & Sze 2002). To summarise, the aforementioned works on ASL and HKSL describe a dual spatial distinction for definiteness marking: the upper part of the frontal plane is an extended area where indefinites are localised, while the lower frontal plane is a more reduced area where definites are established. The following table provides a summary of previous work in (in)definiteness marking in two signed languages with respect to the use of signing space.

<table>
<thead>
<tr>
<th></th>
<th>Index signs</th>
<th>Eye gaze</th>
<th>Spatial location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL</td>
<td>Definiteness</td>
<td>Prenominal</td>
<td>Point established</td>
</tr>
<tr>
<td></td>
<td>Indefiniteness</td>
<td>-SOMETHING/ONE</td>
<td>-Upwards direction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Upwards direction</td>
<td>-Darting eye gaze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Tremoring motion</td>
<td>Bigger region established</td>
</tr>
<tr>
<td>HKSL</td>
<td>Definiteness</td>
<td>Directed to the location</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indefiniteness</td>
<td>SOMETHING/ONE</td>
<td>Directed to the addressee</td>
</tr>
</tbody>
</table>

Table 1. Previous work on (in)definiteness marking

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Nevertheless, other authors have questioned whether index signs mark definiteness. In fact, various authors claim that definiteness is not encoded in signed languages (Engberg-Pedersen 1993, 2003, for Danish Sign Language (DSL); Winston 1995 for ASL; and Rinfret 2009 for Quebec Sign Language (LSQ)). Engberg-Pedersen (1993, 2003) argues that in DSL, discourse referents with high discourse value are more likely to be represented by a spatial locus than the ones with a low discourse value. On this view, discourse value is measured according to the number of times the referent is mentioned. Winston (1995) also ascribes to spatial loci in ASL the potential of marking discourse value. According to this work, loci mark topic continuation as a consequence of the discourse-status marking of the discourse referent. If the discourse referent is not established in space, it means that it is an unimportant entity and the discourse will not be centred on it.²

On a different view, Zimmer & Patschke (1990) for ASL and Bertone (2007, 2009) for Italian Sign Language (LIS) explicitly claim that an index sign directed to signing space specifies the noun it co-occurs with. However, no further comment of what is meant by specificity nor which properties are encompassed by it are given. To further refine the notion of specificity in relation to the use of signing space and other markings is precisely one of the aims of this article.

Leaving aside the use of signing space, sign languages are also provided with lexical signs expressing indefiniteness. In some spoken languages, indefinite pronouns appear to have been grammaticalised from generic nouns such as ‘person’ or ‘thing’, from the numeral ‘one’, and also from interrogative elements, like ‘who’, ‘what’ and ‘where’ (Bhatt 2004; Haspelmath 1997). This pattern is also attested in some sign languages (Cormier 2012; Zeshan 2004). As previously described, in ASL and HKSL the indefinite animate pronoun translated as ‘someone’ has the same handshape and orientation as the numeral ONE and the classifier for person or animate entity, with an additional slight tremoring movement. This happens to be also the case in British Sign Language (BSL, Cormier 2012) and in Italian Sign Language (LIS), among other signed languages. Pfau and Steinbach (2006) describe the indefinite pronoun in German Sign Language (DGS) and Sign Language of the Netherlands (NGT) as a grammaticised combination of the numeral ONE and the sign PERSON. This indefinite pronoun does not necessarily refer to only one person as it may be also understood as plural. Moreover, in ASL a sign with a similar articulation, but distinguishable from, the WH-sign glossed as
WHAT has been considered to have the same function as an indefinite pronoun (Conlin, Hagstrom & Neidle 2003). As for the articulation, these authors agree that there is a tendency for this particle to cliticize phonologically (that is, to contract) with the sign it follows. The nonmanuals that correlate with this sign correspond to those associated to uncertainty, namely tensed nose, lowered brows, and sometimes also raising the shoulders (MacLaughlin 1997). As for the semantics, the particle seems to extend the domain of reference to beyond the typical and it mainly occurs in uncertainty contexts. As shown in section 5 in detail, LSC shares most of the characteristics described so far.

3 Methodology: Data set and grammatical tests

The methodology used to analyse the data for the present purposes combines annotated data from a small-scale corpus in LSC with grammatical tests. The grammatical tests presented above determine the degree of knowledge of the discourse referent and therefore allow establishing the association between the referential status of a discourse referent and the kind of (in)definite and (non-)specific NP marking. This association recognises the formal marking of NPs according to each semantic-pragmatic category.

3.1 Data set and annotation

The data set used for the present study comprises data taken from a small-scale LSC corpus. It includes discourses from seven native deaf signers (three women and four men), aged between 41 and 62 years old and living in the area of Barcelona. The small-scale LSC corpus comprises 5,108 signs and consists of three types of data, namely semi-spontaneous discourse, videos recorded for other purposes and elicited data. The first two types of data were used at a preliminary stage in order to have a general sense of how reference and more particularly (in)definiteness is used in LSC in different language situations. This provided a picture within which specific data questions and judgements were framed. However, corpus work entails a drawback, since corpus data cannot be used exclusively when the aim is to describe and analyse a natural language thoroughly, because not everything that is in the language is precisely contained within the corpus. The observation of the restricted set of data can be a limitation once we want
to obtain, for instance, negative evidence. Elicited data was thus also incorporated in order to test the structures under study that could confirm or falsify our preliminary hypothesis. The final felicity judgements were based on the intuitions of two native deaf signers, which were added to the qualitative analysis used in this piece of research. The table below summarises the distribution between the types of data and the signers who contributed (for the interest of privacy, each signer is identified with a number).

<table>
<thead>
<tr>
<th>Types of data</th>
<th>Signers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-spontaneous</td>
<td>2, 4, 6</td>
</tr>
<tr>
<td>Recorded for other purposes</td>
<td>1, 2, 3, 6, 7</td>
</tr>
<tr>
<td>Elicited</td>
<td>1, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Felicity judgments</td>
<td>6, 7</td>
</tr>
</tbody>
</table>

Table 2. Distribution of types of data and signers

For the elicitation techniques, drawings were used with the main goal to establish the distinction between a known entity and a non-known one. Following standard practices in the semantics-pragmatics area of research (Matthewson 2004), when eliciting data to obtain specificity distinctions, contexts were always presented to the native signers. The use of contexts allowed to control the interpretative range of forms and to obtain a controlled elicitation. These contexts have been included in this article and presented in italics before each elicited example. Finally, the felicity judgments consisted in presenting a context to the signers and right after a signed video. After watching it, they had to rate whether the signed form was felicitous for that particular context.

The software used for the annotation is the multimodal program ELAN. When elicited data was recorded, two cameras were used and the recording was synchronised in the ELAN annotation file. The ten time-aligned linguistic tiers that the annotation of the present corpus comprises are shown in the following figure and explained below.
Self-designed linguistic tiers used in the annotation:
- Gloss RH: Gloss of the sign articulated with the dominant hand.
- Dir&Loc RH: Direction and location of the sign articulated with the dominant hand.
- Gloss LH: Gloss of the sign articulated with the non-dominant hand.
- Dir&Loc LH: Direction and location of the sign articulated with the non-dominant hand.
- Coreference: Number assigned to each discourse referent introduced and referred back to.
- Referring term: Grammatical expression used for to express all discourse referents.
- Utterance: Segmentation of utterances according to prosodic boundaries (the intonational phrase marking criteria established in Nespor & Sandler 1999 and followed here are change in head or body position, change in all aspects of facial expression, and eyeblinks).
- Role shift: scope of role shift and number assigned to the corresponding discourse referent.
- Brows: position of eyebrows (raised or furrowed).
- Eye gaze: direction in signing space.
- Comments: doubts and comments arisen during the annotation procedure.

3.2 Grammatical tests for (in)definiteness

In order to determine the degree of knowledge of the sender and the addressee and thus whether the NP includes a marker of (in)definiteness, some tests previously used for the study of the Salish language St’át’imcets (Matthewson 1998) have been adapted for the present purposes and applied to potentially (in)definite NPs in the LSC data set. In what follows, the tests are described and exemplified.
i) Novelty condition

According to this condition, indefinite NPs cannot refer back to an already introduced discourse referent. That is, indefinite NPs may only refer to unfamiliar (i.e. not known) entities, while definite NPs only refer to known ones. In an utterance like (13), the discourse referent “student” is first introduced with the indefinite determiner. In the second clause, the same discourse referent is referred back by a definite NP or a pronoun. In contrast, the indefinite NP in the second clause in (14) is only understood through disjoint reference. This means that indefinite NPs only pick up new and unfamiliar discourse referents.

(13) A student\textsubscript{j} came. The student\textsubscript{j}/He\textsubscript{j} brought me a book.

(14) A student\textsubscript{i} came. A student\textsubscript{j}/\textit{i} brought me a book.

ii) Non-uniqueness

The referents of indefinite NPs are non-unique. This means that indefinite NPs point to an entity that belongs to a set of entities sharing a particular property (15). The use of an indefinite NP arises the presupposition that many similar entities exist. As shown in (16a), since there is only one sun in our Solar System it is not felicitous to refer to it with an indefinite NP.

(15) A pencil is on the table.

(16) a. #A sun rises in the East and sets in the West.
    b. The sun rises in the East and sets in the West.

iii) Discourse-addressee familiarity

Two properties characterise definite NPs. On the one hand, discourse referents that have been previously introduced in the discourse, which are thus discourse familiar, are marked with a definite NP. This is shown in (17), where the definiteness in the NP is marked through a demonstrative. On the other, first-mention discourse referents that are part of the general knowledge and thus implicit in the common ground are also
considered to be definite. Since it is generally considered that there is only one Pope, it is felicitous to mark it with a definite article even when being first-mentioned (18).

(17) A woman entered the room. After giving my speech and going down the scenario, I realised that I knew that woman. We had met at a summer school ten years ago.

(18) The Pope gave his speech in Latin in front of an empty Piazza San Pietro.

Non-uniqueness (i) and novelty condition (ii) positively identify an indefinite NP, while discourse-addressee familiarity (iii) positively identifies a definite NP.

3.3 Grammatical tests for (non-)specificity

In order to determine the difference of knowledge of the sender with respect to the discourse referent being talked about and thus whether the NP includes a marker of (non-)specificity, the tests taken from Haspelmath (1997) have been adapted for the present purposes and applied to the LSC data. For the distinction, coreferential anaphoric pronouns, determiners and sluicing contexts are the three main criteria taken into account.

i) Anaphoric pronouns

Leaving aside intensional contexts, only specific NPs establish a discourse referent. This means that once it has been established they can be referred back to by an anaphoric pronoun in following context.

Context: You explain to your colleague that there is a particular book you have already seen at a bookstore.

(19) I want to buy a book I saw in the store last week. It is written by a Greek author.

In contrast, when talking about a non-specific discourse referent (that is, not a particular entity but rather a kind reference), a coreferential anaphoric pronoun is not felicitous because a particular discourse referent has not been established.
Context: You explain to your colleague that you would like to read some book, but do not have any particular book in mind.

(20) I want to buy a book in the store. #It is written by a Greek author.

ii) Determiners
In some languages, there are determiner-like expressions that force a specific reading. This is the case of English *certain*, which can only refer to an identifiable entity. In a sentence like (21a), the NP has a specific reference. A continuation denoting not being able to identify such female is not felicitous (21b).

(21) Frank wants to marry a *certain* Norwegian.
   a. She is very tall.
   b. #But I still don’t know who this woman is.

iii) Sluicing contexts
Sluicing contexts force a non-specific reading. In a specific context the sender is referring to a particular discourse referent. Therefore, a continuation with a sluicing context is not felicitous (22). But when the sender is referring to a non-specific referent, the sluicing context is felicitous (23).

(22) Frank wants to marry a Norwegian\textsubscript{spec}. # But I don’t know this woman.

(23) Frank wants to marry a Norwegian\textsubscript{non-spec}. But I don’t know this woman.

The tests related to anaphoric pronouns (i) and determiners (ii) positively identify a specific NP, whereas sluicing contexts (iii) identify a non-specific one. These properties were tested against our data set and used as criteria to identify (in)definiteness and (non-)specificity distinctions. This testing allowed establishing the relationship between each semantic-pragmatic category and the corresponding formal marking. In what follows, a description of the main markings for referential encoding in LSC with respect to manual and nonmanual marking is presented.
4 Encoding of definiteness in LSC

Having presented the properties used for the qualitative analysis combining detailed annotation data and grammatical tests, this section offers a description of the strategies used to mark definite NPs in LSC. Below the strategies used to codify discourse referents that are discourse-addressee familiar, unique and not novel are presented and they are divided between manual and nonmanual marking. As for the manual marking, the description is based on a particular sign. Unlike other signed languages mentioned in section 2.3, whether the NP includes an index sign or not is not relevant for definiteness marking in LSC. NPs with both an index sign directed to the horizontal plane (24a) or without it (24b) are ambiguous between a definite and an indefinite reading. Thus the index sign *per se* is not a marker of definiteness.

(24)  
a. TODAY IX1 INTERVIEW IX3 WOMAN.  
     ‘Today I have an interview with a/the woman.’  
b. TODAY IX1 INTERVIEW WOMAN.  
     ‘Today I have an interview with a/the woman.’

Let’s move then to the description of manual and nonmanual elements that arise a definite reading.

4.1 Manual marking: definite particle

LSC has a definite particle, which is glossed as MATEIX because of the mouthing that it is co-articulated with (roughly translated as ’same/itself’). MATEIX is a monomanual sign articulated with Q-handshape and with body contact on the ipsilateral shoulder, with a downward movement (Figure 6).
The sign MATEIX is related to a nominal element, in such a way that it either co-occurs or it anaphorically substitutes it. The relation between the two elements is through signing space. Since the manual component of the sign is body anchored, body lean and eye gaze are used to localise the nominal sign. MATEIX always co-occurs in an NP denoting a familiar (thus definite) discourse referent. According to the familiarity approach of definiteness (section 2.1), some particular contexts arise a definite reading and those are precisely the ones where MATEIX is found. It may be used in contexts where the object referred to is co-present (25), with entities belonging to the common ground (26) and with already mentioned entities (27).

(25)  MATEIX TABLE IX IX1 CLEAN.
     ‘I will clean that table there.’

(26)  IX3, FOUND ORGANISE MATEIX PERSON-3IP HITLER.
     ‘This was founded by Hitler himself.’

(27)  IX BOOK ADAPT SIGN. IX1 FEEL HAPPY. MATEIX BOOK SELL+++.
     ‘This book has been adapted into sign language and I feel very happy. This (same) book has ben sold a lot.’

These examples show the different grammatical properties attributed to definite NPs. Examples (25) and (27) are instances of not novel and discourse-addressee familiar discourse referent. Example (26) is an instance of both a unique and an addressee familiar discourse referent.
MATEIX may co-occur with both common and proper nouns not previously mentioned. In the first case (28), it is an instance of associative anaphora associated with definite NPs (Consten 2003). In the proper noun case (29), an emphatic meaning arises.4

Context: The signer is explaining how was the first day she went to school.

(28) SCHOOL CL:“door-opens” CL:“person-walks” NUN IX3 MATEIX OF TUTOR IX1pl. ‘The door of the school opened and the nun, who was our teacher, entered.’

Context: Two work colleagues (A and B) are waiting outside the office, because the third one (C), named David, still hasn’t arrived. A doesn’t know who is in charge of the keys. Without a previous question, B utters:

(29) MATEIX DAVID KEYS BRING. ‘David will bring the keys.’

4.2 Nonmanual marking

Definiteness and familiarity may also be expressed nonmanually. This particular nonmanual consists in squinted eyes and has been already described for other sign languages as a marker of shared information (see Dackovsky & Sandler 2009 for Israeli Sign Language (ISL); Engberg-Pedersen 1990 for Danish Sign Language (DSL), and Herrmann (2013) for German Sign Language (DGS)). Importantly, and in line with what has been mentioned in section 2.1, for the LSC case the shared information does not need to be explicitly mentioned in previous discourse, but it can perfectly be assumed or be part of the general knowledge from the common ground. It is also worth mentioning that squinted eyes indicates that the addressee may retrieve the discourse referent from memory in a long run and it serves as a signal to indicate the low accessibility status of the linguistic material that it is aligned with (Dackovsky & Sandler 2009).
Context: You tell your work colleague that today you have an interview with the LSC student you both met yesterday.

_______________________sq
(30) TODAY IX1 INTERVIEW MATEIX STUDENT LSC.
'Today I have an interview with the LSC student.'

Figure 7. Squinted eyes

In a sentence where the sign MATEIX is not overt, squinted eyes having scope on the NP are enough to denote a familiar discourse referent. Being referred to a particular student that the conversation participants know, both (30) and (31) are instances of not novel, unique and addressee familiar discourse referents.

Context: You tell your partner that you need to have an interview with the LSC student you both met yesterday.

_______________________sq
(31) IX1 INTERVIEW WANT STUDENT LSC.
'I want to have an interview with the LSC student.'

This section has showed that, according to our data, the main means to mark definiteness in LSC are based on a lexical sign and on a particular nonmanual. As shown in the following section, LSC has moreover a rich inventory of pronouns and strategies to codify indefiniteness and specificity.
5 Encoding of indefiniteness and (non-)specificity in LSC

Indefiniteness is encoded by different means in LSC. Below it is shown that not only indefinite particles expressed by lexical signs form an interesting paradigm, but also morphosyntactic modulations of manual signs with respect to their direction in signing space are also used to encode the semantic distinction between specificity and non-specificity. Last but not least, the alignment of particular nonmanual components is also relevant in the expression of indefiniteness.

5.1 Inventory of indefinite particles

LSC has a rich array of lexical signs, which encode an indefinite reading. One of the most frequent strategies to express an indefinite NP is the use of determiners (32) and pronouns (33). The examples shown below are articulated with an arc-shaped index-handshape, but for the indefinite reading to arise this is not obligatory: the singular form of a pointing is also possible.

Context: You are telling a friend of yours that you went to a kennel because you want to buy a cat. At the end, you decided not to buy any animal, because you found out that the cats they have in this kennel, which your friend has never seen, are not obedient.

(32) CAT IX3pl OBEDIENT NOT
     ‘Some of the cats are not obedient.’

(33) IX3pl OBEDIENT NOT
     ‘Some of them are not obedient.’

Another strategy is with an indefinite pronoun, glossed as PERSON, which derives from the lexical noun PERSON. This sign may be used in some contexts as a coreferential pronoun and in some others as an indefinite pronoun with an indefinite reading (34). For the indefinite reading to arise, the pronoun is articulated in the upper frontal plane. It may also have a reduplicated form and, therefore, a plural interpretation.
Context: A friend of yours is complaining because some of his friends have warned him about some faults. You tell him that this is a normal situation that may happen to everyone.

(34) \[ \text{PERSON}_{u}^{++} \text{ OWN ERROR RECOGNISE NEVER. MATEIX IX3pl FRIEND 3-WARN-3} \]

____________________rs
LOOK COUNT-1-2-3.

‘One never realises of his own faults. It is his friends who have to warn him.’

Another lexical functional element that denotes indefiniteness is a compound sign. This pronominal sign is formed by the interrogative Wh-sign WHO concatenated with the 3rd person plural pronominal form (Figure 8) or with the determiner SOME as well (Figure 9). In both cases, the order of the signs is not relevant. Interestingly, the mouthing accompanying this compound sign is always the Spanish word *alguien* ‘someone’ and it has scope over the two signs. This pronoun has the semantic feature [+animate], as it only refers to human and animal discourse referents.

Figure 8. Sign ‘someone’ formed with \( \text{WHO}^\text{IX3pl}_u \)

Figure 9. Sign ‘someone’ formed with \( \text{WHO}^\text{SOME}_u \)
Another very frequent indefinite particle consists in an index finger pointing upwards and directed towards the upper frontal plane. It is very similar to the numeral ONE, but, unlike the numeral, the indefinite determiner \( \text{ONE}_{u} \) is articulated in an upper location on the frontal plane and combined with characteristic nonmanual marking typical from indefinite contexts, namely sucked cheeks, shrug and non-fixed eye gaze towards spatial location (see section 5.3). Recently, this indefinite determiner/pronoun has been proven to be specialised to contexts of impersonal reference (Barberà & Quer 2013). The indefinite determiner \( \text{ONE}_{u} \) may function as a pronoun (35) and as a determiner preceding or following a noun (36).

(35) \( \text{ONE}_{u} \) \text{MOMENT} \text{HOSPITAL} \text{GO}, \text{ALWAYS} \text{THINK} \text{RESULT} \text{WORST}.

‘When one is admitted to the hospital, always fears the worst results.’

(36) \( \text{ONE}_{u} \) \text{PERSON} \text{DOOR} \text{KNOCK}.

‘Someone is knocking at the door.’

Finally, there are two more signs denoting indefiniteness that may function as determiners and pronouns: SOME and ANY. Similar to the sign \( \text{ONE}_{u} \), they are not semantically restricted to a particular type of entity. When inserted in an interrogative context, the sign SOME may be translated also as 'how many'. This supports the relation between indefinites and interrogative pronouns, already mentioned in section 2.1.

_____________________________

(37) \( \text{IX1} \) \text{BOOK} \text{CL}::’row of books’ \text{SOME} \text{OLD}.

‘Some of the books from my shelf are old.’

_____________________________

(38) \( \text{IX1} \) \text{BOOK} \text{CL}::’row of books’ \text{IX2} \text{TAKE} \text{ANY}.

‘Take any book from my shelf.’

The determiners and pronouns just mentioned are syntactically in complementary distribution and they are used in similar contexts. However, semantically they differ in that the pronoun \( \text{WHO}^{\text{IX3pl}_{u}} \) refers to [+animate] entities; \( \text{PERSON}_{u} \) refers to [+human] entities and \( \text{ONE}_{u} \) does not have a semantic restriction. The following table
summarises the syntactic function and the referential constraints of the repertoire of lexical signs marking indefiniteness in LSC.

<table>
<thead>
<tr>
<th>Function</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>IX3pl</td>
<td>✓</td>
</tr>
<tr>
<td>PERSONu</td>
<td>✓</td>
</tr>
<tr>
<td>WHO^IX3plu</td>
<td>✓</td>
</tr>
<tr>
<td>ONEu</td>
<td>✓</td>
</tr>
<tr>
<td>SOME</td>
<td>✓</td>
</tr>
<tr>
<td>ANY</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 3. Properties of lexical signs marking indefiniteness

5.2 Manual morphosyntactic modulations

As already introduced in section 1, NPs in LSC may be associated with a locus established on the lower part of the frontal plane, as well as on the upper frontal plane. In this section it will be proven that indefinite NPs may have a lower or an upper establishment in the frontal plane depending on the specificity interpretation. Section 2.2 has illustrated that the specificity reading depends on the knowledge that discourse participants may have about the corresponding discourse referent. When the discourse referent is known by the sender but not known by the addressee, this corresponds to a specific interpretation. When the discourse referent is not known by the sender nor the addressee, this corresponds to a non-specific interpretation. The specificity distinction is overtly expressed in the use of signing space in LSC. Specific discourse referents are associated with a locus established on the lower frontal plane (39) (graphically shown in Figure 10), while non-specific DRs are established on the upper part of the frontal plane, as indicated in the subscripts in (40) and shown in Figure 11.
(39)  IX1 CAT WANT BUY. IX3d CHARACTER OBEDIENT
'I want to buy a cat. It is very obedient.'

Figure 10. Lower localisation of a specific discourse referent

(40)  CAT IX3.pl ipsi-u IX1 WANT BUY. MUST CHARACTER OBEDIENT.
'I want to buy a cat. It must be obedient.'

Figure 11. Upper localisation of a specific discourse referent

The articulation of signs directed to signing space also varies depending on the direction and, more specifically, on the interpretation they get. Signs directed towards the lower frontal plane have a tensed realisation and are directed towards a concrete locus. In such cases, a specific reading arises. Signs directed to the upper part of the frontal plane corresponding to a non-specific interpretation are non-tensed, have a vague realisation and are directed towards a widespread area rather than a particular spatial location.

Concerning the inventory of LSC indefinite particles (listed in table 3), they may also be established (i.e. localised) towards the lower frontal plane. When this happens, a
specific (and in some cases, partitive) reading arises. When the indefinite particles are directed towards the upper frontal plane and thus establish the NP in an upper area, a non-specific interpretation arises. This contrast is shown in (41) and (42).

(41) HOUSE SOME\(_l\), HOUSE ONE\(_l\), HOUSE ANY\(_l\)
    ‘Some of the houses’, ‘one of the houses’, ‘any of the houses’

(42) HOUSE SOME\(_u\), HOUSE ONE\(_u\), HOUSE ANY\(_u\)
    ‘Some houses’, ‘one house’, ‘any house’

As exposed in section 3.3 (grammatical test i), one of the grammatical tests to distinguish between specific and non-specific readings is the possibility of having a coreferential pronoun. Only specific NPs establish a discourse referent. This means that once it has been established they can be referred back to by an anaphoric pronoun in following context. In contrast, when talking about a non-specific discourse referent, a coreferential anaphoric pronoun is not felicitous because a particular discourse referent has not been established.\(^5\) For the LSC case, only NPs established on the lower part of the frontal plane may have a coreferential pronoun in further discourse, corresponding to a specific interpretation (43). When the NP is localised in the upper frontal plane, the coreferential pronoun is not felicitous (44).

(43) CAT IX\(_3\), IX1 WANT BUY. IX\(_3\) LEG BIG CL:“big-legs”.
    ‘I want to buy a cat\(_{\text{spec}}\). It has long legs.’

(44) CAT IX\(_3\), IX1 WANT BUY. #IX\(_3\) LEG BIG CL:“big-legs”.
    ‘I want to buy a cat\(_{\text{non-spec}}\). #It has long legs.’

Section 3.3 (grammatical test ii) has shown that English determiner *certain* forces a specific reading because it can only refer to an identifiable entity. Thus, the use of this determiner in a NP positively identifies a specific NP. In LSC there is a sign glossed as CONCRET (Figure 12), which mainly occurs in non-specific contexts. Therefore, the use of the sign CONCRET positively identifies a non-specific discourse referent. The sign
restricts the domain of interpretation of the discourse referent referred to but always with a kind interpretation.

\[\text{Figure 12. Two instances of the sign CONCRET}\]

As (45) shows, the NP with the sign CONCRET is used to refer to an entity such that has the property of being a tool and more concretely has the property of being a screwdriver, but the signer doesn’t know the exact identity of this element. Among all the possible tools available, the one the signer is referring to needs to be of a screwdriver nature, although she doesn’t have one in mind. According to grammatical test iii in section 3.3, non-specific contexts are felicitous with a sluicing context. This is shown in the felicitous continuation in (45a) below, which indicates that the sender does not known the exact identity of the tool. However, a continuation with a context showing that the identity is known is not felicitous (45b).

\[\text{(45)}\] \quad \text{CARLOS WANT TAKE ONEu ANYu TOOL CONCRET FOR CL:”screwdriver” OUT}
\quad \text{‘Carlos is looking for any tool, which serves as a screwdriver.’}

\quad a. IX1 KNOW-NOT WHICH.
\quad \text{‘I don't know which one.’}
\quad b. #IX COLOR BLUE.
\quad \text{‘It is the blue one.’}
5.3 Nonmanual marking

Nonmanual marking is also a crucial part of the grammar of sign languages. In LSC nonmanuals also play a role in the encoding of information status, since indefiniteness is expressed with a particular nonmanual marking. It is articulated on the lower part of the facial expression and it consists in sucking the cheeks in and pulling the mouth ends down. This is sometimes combined with a shrug. The facial expression is shown in Figure 13 and is aligned with indefinite NPs that are not novel, non-unique and not familiar.

Moreover, when the indefinite NP corresponds to a non-specific discourse referent, the articulation of the nonmanual is aligned with a particular eye gaze. When expressing non-specificity, a non-fixed eye gaze towards a locus is expressed and a corresponding darting eye gaze is aligned with the NP.

Interestingly, this nonmanual articulated on the lower part of the facial expression provides semantic-pragmatic information (see Wilbur (2000), who claims that the nonmanuals from the upper part of the face are used for syntactic information (i.e. affirmation, negation, topics, conditionals), whereas the nonmanuals from the lower
part of the face are used to provide adverbial modification (i.e. adjectives, adverbials)). An interesting question that arises and which is outside the scope of this article is how this indefinite nonmanual marking is compositionally combined with other markings, as well as how the pulling down of the cheeks is combined with shrug, or whether there is a different meaning attributed to the two of them. Since the main focus of research of the present article is how (in)definiteness and (non-)specificity is encoded in LSC, these interesting issues have only been treated descriptively and will have to be analysed in deep in future research.

6 Conclusions

This article has offered a thorough analysis of how reference, and more particularly indefiniteness, is encoded in LSC, which contributes to the characterisation of the abstract import of signing space. By using a combined methodology of corpus data and grammatical tests, the present description shows that the encoding of definiteness and specificity in LSC is achieved by three main means, namely lexical signs, the use of nonmanuals, and the use of signing space. While the kinds of signs used are parallel to spoken language’s strategies (i.e. interrogative signs, generic ontological-category nouns, etc.), LSC also makes use of the natural means offered by the visual-spatial modality. Therefore, particular nonmanual markings aligned with the NP together with the manual modulations of signs in signing space are also used when conveying different referential status of the entities introduced in the discourse. It has been shown here that definiteness distinctions are based on particular manual signs and nonmanuals, whereas specificity distinctions are mostly achieved with the nonmanuals together with the use of signing space and more concretely with spatial modifications of signs in the frontal plane.

This article stands as a novel contribution to the young field of sign language semantics-pragmatics interface by focusing on the codification of referential status and, more concretely, on how LSC signers mark the knowledge they have about the discourse referent. It constitutes a first step towards the characterisation of the study of (in)definiteness marking use, which needs to be contrasted with other sign languages in order to expand our cross-linguistic knowledge specifically in the discourse domain.
Taking into account that indefinite particles form a rich paradigm, one possible way to further proceed in this area of research is to implement Haspelmath (1997)’s implicational map for functions of indefinite pronouns to a sign language and establish the various functions of indefinites, such as quantifiers, epistemic indefinites and free choice items. Moreover, the domain of quantification of indefinites has been recently studied for ASL (Davidson and Gagne 2014) and a novel proposal incorporating the three properties of indefinites, namely specificity, scope and domain of interpretation, has been outlined (Kuhn 2014). The combination of these aspects opens up an interesting avenue of research that needs to be further explored both intra and inter-language studies.

Acknowledgments

Acknowledgments will follow.

References


Mathur, Gaurav. 1996. A presuppositionality marker in ASL. Manuscript, MIT.


This article follows the usual glossing conventions in the sign language literature, according to which manual signs are represented by the capitalized word corresponding to the translation of the sign. The relevant abbreviations for the present purposes are the following: IX# (index pointing sign; the numbers refer to the grammatical person); #-VERB-# (verb agreeing with subject and object); subindices mark direction towards sign space: l (low), u (up), ip (ipsilateral); cl (contralateral); c (centre); binding relations (i); CL for classifier constructions and rough meaning description between inverted commas. A line above the glosses indicates the scope of nonmanuals: br (brow raise); sq (squinted eyes), rs (role shift). Reduplication of signs is indicated by +++.

This does not imply that all discourse referents not localised in signing space are not topical entities. Weak definites in LSC are not established in signing space, but rather realised in neutral space without having a corresponding spatial location established (see also Machado de Sá et al. 2012 for a study on weak and strong definites in Brazilian Sign Language). The lack of localisation of weak definites in signing space supports the hypothesis that loci stand for referential features.

Mosella (2012) claims that the nominal nature of relative clauses in LSC is due to the co-occurrence of the sign MATEIX, which may precede or postpone the noun.

The sign MATEIX shares many semantic-pragmatic features with the ASL sign SELF, which has also been considered to be a definiteness marker (Fischer and Johnson 1982 [2012]), a specificity marker (Wilbur 1996) and a presuppositionality marker (Mathur 1996). In many contexts, the sign MATEIX arises an emphatic meaning, and this is precisely another function attributed to SELF in recent research (Koulidobrova 2009; Wilbur 2011; Wilkinson 2013).

Intensional contexts in which the sender is referring to a non-specific discourse referent allow a coreferential pronoun as long as they are embedded under an operator. These are cases of modal subordination. Due to space limitations, I leave aside this issue here, but see Barberà (2012) for a thorough discussion on this aspect.