

Meaning beyond signs: Implicatures and presupposition in Catalan Sign Language (LSC)

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Summary: This paper offers a first description of non-truth conditional meaning in Catalan Sign Language (LSC). It analyses conventional implicatures, conversational implicatures and presuppositions, and different devices and structures that trigger them, such as the use of signing space, role shift, classifier constructions, focus particles, connectives, implicative verbs, parentheticals, clefts and interrogatives.

Keywords: Catalan Sign Language, implicature, presupposition, signing space, role shift, classifiers, focus particles, clefts ■

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■ 1 Introduction¹

In Catalan Sign Language (*llengua de signes catalana*, LSC), as in any other natural language, utterances often mean more than what is actually said. Generally, the target meaning goes beyond what is conveyed by the lexical and morphosyntactic units. The same utterance may contribute different meanings depending on the context where it is found. This is known as *non-truth conditional meaning*: the meaning that is conveyed but not actually said. This pragmatic enrichment derives from the conventions of the lan-

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guage and also from rich interaction between language and context use. The dialogues in LSC below show an instance of pragmatic enrichment in the answer of B. In the three dialogues the expression “I have a headache” takes different values in each context in which it is used. While the semantic (literal) meaning is “to have a headache”, its use or pragmatic meaning varies in each situation. In Situation 1, A proposes to go to the cinema and B refuses the invitation by conveying that he cannot go to the cinema because he has a headache. Instead of providing a negative answer, B provides an answer that has the same effect but in an indirect way (i.e. by telling that he has a headache). In Situation 2, A asks whether B feels better and B replies that he has a headache. Instead of providing a direct answer like ‘No, I do not feel better’, B wants A to implicate so. In Situation 3, A proposes to go to bed by means of a polar question. Instead of answering ‘yes’ or ‘no’, B wants A to implicate that he does not want to go to bed because of the headache.²

(1) Situation 1:

A: CINEMA LET’S-GO ‘Let’s go to the cinema?’

B: HEADACHE ‘I have a headache’

(2) Situation 2:

A: FEEL WELL ‘Do you feel better?’

B: HEADACHE ‘I have a headache’

(3) Situation 3:

A: LET’S-GO BED ‘Let’s go to bed?’

B: HEADACHE ‘I have a headache’

2 This article follows the usual glossing conventions in the sign language literature. Manual signs are represented by the capitalized word corresponding to the translation of the sign. The scope of nonmanual markings is represented with a line that spreads over the manual material with which it is co-articulated. The abbreviations used in the glosses are the following:

is a placeholder for the loci in signing space corresponding to 1st, 2nd and 3rd person referents: IX# (index pointing sign); #-VERB-# (verb agreeing with subject and object); br (raised eyebrows); ht (head tilt); hthr (head thrust); mth (mouthing); we (wide eyes); sp (space). Sub-indices mark localizations in signing space: low, high, left, right; lower indexed letters (a, b) mark lateral loci and coreference relations. When locations in signing space scope over more than one sign they are marked with a line that spreads over the relevant constituent(s). Hyphens are used with single signs translated into English with more than one word. Reduplication of signs is indicated by +++.

The meaning of all expressions may be divided into two dimensions: the descriptive meaning and the implicated meaning. The descriptive meaning of “I have a headache” refers to the truth conditional content, i.e. whether the sender has a headache or not in the time of utterance. This dimension is also known as ‘what is said’ (Grice, 1975, 1989) or the ‘at-issue’ content (Potts, 2005). The other dimension of meaning forms the implicated meaning (‘what is meant’) or the ‘not-at-issue’ content, that is, the meaning not directly included in the morphosyntactic unit but conveyed by the sender with the utterance in context, i.e. that the sender cannot do something because of a headache.

In some contexts the implicated meaning may be triggered by an element of the utterance. In (4) the descriptive meaning is the regular semantic content of the corresponding syntactic unit used in this utterance. The implicated meaning is the projected meaning not conveyed by the syntactic units but triggered in this particular case by the connective BUT. The use of the connective triggers an expressive meaning that ideas are usually new.

- (4) IDEA GOOD, BUT OLD.
‘It is a very good idea, but it is old.’

The next example shows another type of implicated meaning. Here, the implicated meaning (i.e. John was on holidays earlier) is a necessary condition in order for the descriptive content to be true.

- (5) A: JOHN WHERE? ‘Where is John?’
B: HOLIDAYS STILL ‘He’s still on holidays!’

At present, research on non-truth conditional meaning in a particular sign language is still incipient (Davidson, Caponigro & Mayberry, 2009; Davidson, 2014; Herrmann, 2013; Schlenker & Lamberton, 2012; Schlenker, Lamberton & Santoro, 2013, among others). The present paper aims at providing a first outlook on how implicated meaning is conveyed in LSC, and more concretely at the three general classes, namely conversational implicature (section 2), conventional implicature (section 3) and presupposition (section 4). Each section presents the same structure: definition of the particular class, brief revision of the literature, presentation of examples in LSC and description of elements that trigger the particular meaning. Finally, section 5 summarises the main findings.

The data used in this piece of research is a combination of two kinds. On the one hand, videos recorded for instructional purposes with the main aim of teaching pragmatics in LSC were gathered and analysed (Barberà & Frigola, 2015). On the other hand, data obtained from elicitation sessions made within the framework of a PhD dissertation were also included (Navarrete-González, to appear).

■ 2 Conversational implicature

Conversational implicatures are very much connected to the conversational maxims and the cooperative principle (Grice, 1975). Conversational maxims are a set of rules that interlocutors generally follow, and expect each other to follow, and without which the conversation would not be possible. These rules are embedded in the single overarching cooperative principle that states to “make your contribution as is required, when it is required, by the conversation in which you are engaged.” Each of the maxims covers one aspect of linguistic interaction and describes what is expected from a cooperative signer with respect to that maxim. The cooperative principle and the maxims are developed below (Grice, 1975; Levinson, 1983; Meibauer, 2006). Various authors developed and refined Grice’s theory of conversational implicatures, typically leading to a systematization and reduction of the maxims (Horn, 1984; Sperber & Wilson, 1995; Levinson, 2000; for an overview see Meibauer, 2006).

Cooperative principle

Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

The Maxim of Quantity

1. Make your contribution as informative as is required (for the current purposes of the exchange).
2. Do not make your contribution more informative than is required.

The Maxim of Quality

1. Do not say what you believe to be false.
2. Do not say that for which you lack adequate evidence.

The Maxim of Relevance

Be relevant (i.e. make your contributions relevant).

The Maxim of Manner

1. Avoid obscurity of expression.
2. Avoid ambiguity.
3. Be brief (avoid unnecessary circumlocution and redundancy).
4. Be orderly.

Let us imagine a context of an office where the work team members eat lunch at 1.30 p.m. every day. Since this is a fact well known by all the employees, the implicated meaning of B's answer (i.e. that it is (shortly after) 1.30 p.m.) in the following dialog in (6) is related to the topic under discussion and it thus follows the maxim of relevance. However, instead of saying that it is 1.30 p.m., B uses shared known evidence to provide the answer and expects the interlocutor to implicate this meaning.

- (6) A: What time is it?
 B: They all left to have lunch.

Frequently the maxims are not followed in purpose with the aim of wanting the receiver to generate a conversational implicature. Below it is shown an example of a context in which each maxim is flouted, together with the presentation of the context, the example, and a brief explanation of the corresponding descriptive meaning, the implicatum and the maxim flouted.

- (7) Context: A professor is about to enter a class, but he realises that the buttons of his shirt are broken.
- A: NOW IX₁ GO CLASS BREAK BUTTONS. 'Now I have to go to class and the buttons (of my shirt) are broken!'
- B: WORRY NOT. IX₁ SEW AS. 'Do not worry. I am a very good at sewing.'

The descriptive meaning in (7) is 'do not worry. I am very good at sewing' with the implicatum being 'I can help you by sewing the buttons of your shirt'. Although the maxim of relation is flouted, it thus follows the cooperative principle.

- (8) Context: They have just hired a new employee that a colleague already knows. When he is asked about his opinion he answers:

A: IX₃ WORK COLLEAGUE NEW IX₃. IX₃ EX IX₂ WORK COLLEAGUE. GOOD? ‘He is the new work colleague. He was a former colleague of yours, right? How was he?’

B: WELL, WORK TOGETHER DURATION SHORT. BEFORE WORK INTERRUPT+++ MOVE-DIFFERENT-PLACES. NOW NEXT-TURN LET’S-SEE. ‘Well... we worked together for a short period. Before he had worked in many different places but did not finished the work. This is his next workplace, let’s see...’.

The descriptive meaning in (8) is ‘we worked together for a short period; he worked shortly in other places without finishing all the work’. In this case the maxim of manner is flouted with the implicatum being ‘he is not a very dedicated worker’.

- (9) Context: There has been a meeting with the new president who is hearing. When a colleague is asked how the meeting was, she answers:

A: MEETING IX₃ PRESIDENT PERSON HEARING WELL? ‘How was the meeting with the new hearing president?’

B: IX₃₋₁ COMMUNICATION BEST ABILITY. ‘Oh! The communication between the two of us was super good. He’s many skills!’

The descriptive meaning in (9) is ‘communication was very good’. This is an instance of flouting the maxim of quality with the following implicatum ‘he’s hearing and he does not use sign language. Therefore, communication was very difficult’.

- (10) Context: A is planning with B an itinerary for a holiday in France. They want to visit their mutual friend Jordi, if to do so would not involve too great a prolongation of their journey.

A: TRIP LET’S-GO FRANCE LET’S-GO. ‘Let’s go to France on a trip!’

B: YES. TAKE-ADVANTAGE JORDI VISIT. WHERE? ‘Yes! And let’s visit Jordi on the way. Where (does he live)?’

A: LOOK-LIKE SOUTH AREA. ‘Somewhere in the south.’

Here the descriptive meaning is ‘somewhere in the South of France’. Because of the inaccuracy of A’s reply the maxim of quantity is flouted with the implicatum being ‘B does not know where Jordi lives exactly’.

There are some tests that characterize conversational implicatures in general, namely cancellability, reinforceability, non-detachability, and calculability. Below each test is defined and illustrated with an example in LSC.

Cancellability: the sender adds some lexical content to the utterance that entails the negation of the implicature. In (11) the implicature of the second utterance is that ‘most but not all players’ did a horrible job. However, with the last statement this implicature is negated with the more informative lexical item ALL.

- (11) A: YESTERDAY MATCH AGAINST MADRID BARCELONA HOW. ‘How was the Madrid against Barcelona match yesterday?’
 B: SHAME. MOST IX₃ PLAYERS PERSON++ BARCELONA HORRIBLE. WAIT, NO. REALITY ALL HORRIBLE.
 ‘What a shame! Most Barcelona players did a horrible job. No, wait! Indeed, all did a horrible job.’

Reinforceability: The sender implicates the extra information and then, if it seems important, adds some information to make sure that the conversational partner gets the point. Implicatures can be reinforced without redundancy, as shown in (12a) as opposed to reinforcement of entailments, that leads to redundancy, as shown in (12b), where eighty percent refers in fact to most of the answers.

- (12) a. CRISTINA WOMAN IX₃ YESTERDAY TEST TYPE MOST ANSWER, BUT LAST ANSWER NOTHING.
 ‘Yesterday Cristina replied most answers in the test, but the last one she didn’t reply.’
 b. YESTERDAY TEST WOMAN CRISTINA TYPE MOST ANSWER, REALITY APPROXIMATELY EIGHTY PERCENT.
 ‘Yesterday Cristina replied most answers in the test, in fact (she replied) approximately eighty percent’.

Non-detachability: Implicatures are not lexically triggered. That is, implicatures cannot be blamed on the meaning of particular words or signs that occur in the sentence. Implicatures are “non-detachable”: producing a synonymous utterance does not remove the implicature. The three instances in (13) show different utterances with all sharing the same implicature: ‘please, close the door’.

- (13) a. Context: Signer looking at the door open.
FEEL COLD.
'It's cold (in here).'
- b. Context: Door is open.
PLEASE DOOR.
'Please, (close) the door.'
- c. Context: Signer looking a bit upset.
DOOR OPEN AGAIN.
'The door is open again.'

The final test is *calculability*, which refers to the fact that the addressee should be able to infer the implicatures of an utterance.

- (14) A: TIME. 'What time is it?'
B: SECRETARY LEAVE ALREADY. 'The secretary already left.'

A goes through the following reasoning:

- B would be flouting the maxim of relevance unless she thinks there is a time in which the secretary always leaves.
- B is abiding the cooperative principle.
- Therefore, B is not flouting the maxim of relevance.
- B must think that the time the secretary leaves tells something about the time it is now since she may always leave at the same time.

The most distinguished kind of implicatures are scalar implicatures, which are often connected to lists of lexical items ordered by entailment and informativity, such as for example <all, most, many, some, few>, <and, or>, <always, often, sometimes> (Horn, 1972; Levinson, 1983). Scalar implicatures attribute an implicit meaning beyond the literal meaning of an utterance, which suggests that the sender had a reason for not using a more informative term on the scale. The choice of the weaker term suggests that none of the stronger items in the scale hold. This is shown in (15) in the use of 'some' to suggest the implicit meaning 'not all'. The lexical item SOME triggers the conversational implicature that 'not all professors in the faculty are dedicated to sign language'.

- (15) FACULTY, PROFESSORS SOME FOCUS LANGUAGE SIGN.
'At the faculty, some of the professors are dedicated to sign language.'

Davidson (2014) conducted an experiment to test the calculation of this type of conversational implicatures in American Sign Language (ASL). The goal was to determine if native signers of ASL calculated scalar implicatures in the same way English speakers do or rather there were some differences triggered by the difference in the modality (i.e. the channel of perception and production of the language). Results of this study found no differences between ASL signers and English speakers in the calculation of prototypical scales (<all, some>) nor in the interpretations of numbers (<three, two>). However, the use of signing space and classifier constructions in signed discourse triggered increased implicatures in ASL as compared to English speakers in ad hoc scalar implicatures. Signing space and classifiers are specific devices of the visual-spatial modality of SLs. Signing space is the three-dimensional space in front of the signer's torso where signs are articulated, which is used to provide linguistic meaning at the phonological, morphosyntactic and discourse level (Barberà, 2015). Classifiers are morphemes with a non-specific meaning that represent entities by depicting salient characteristics through manual configurations (Zwitserlood, 2012).

We partly replicated Davidson (2014) experiment in an elicitation task in order to see how LSC signers behave in the calculation of ad hoc scalar implicatures. The participants, two Deaf native LSC signers, were shown a picture in which there were three items (Figure 1).



Figure 1. Image used in the elicitation of scalar implicatures

Afterwards, different sentences with different conditions were signed in LSC. The participants had to rate if the sentences presented were felicitous in relation to the picture. The options of rating were: perfect, good, not good. The conditions for the task were the following:

1. +Position, +Number: Respecting the location in space and the number of items
 - a. +CL: Using classifiers
 - b. -CL: Not using classifiers
2. +Position, -Number: Respecting the location in space but not the number of items
 - a. +CL: Using classifiers
 - b. -CL: Not using classifiers
3. -Position, +Number: Respecting the number of items but not the location in space
 - a. +CL: Using classifiers
 - b. -CL: Not using classifiers
4. -Position, -Number: Not respecting neither the number of items nor the location in space
 - a. +CL: Using classifiers
 - b. -CL: Not using classifiers

Condition (1) was considered the most felicitous one with the use of classifiers. It was also acceptable without the use of classifiers, but both informants agreed in the preference for using classifier constructions in this type of descriptions, since you can provide more exhaustive information. Condition (2) was less felicitous than condition (1), since signers considered it underinformative, but it was considered quite acceptable too. In condition (2) the use of classifiers (2a) was preferred again to depict the image. However, the lack of an element was considered less acceptable in the condition with classifiers than in the condition in which only lexical signs were uttered (2b). By contrast, conditions (3) and (4), where the position in space was violated, were considered completely infelicitous independently of the use of classifier constructions.

Therefore, in LSC what seems to matter in the calculation of ad hoc scalar implicatures is primarily the use of signing space and classifier constructions. The location of the referents in signing space must correspond to their position in the actual world for the sentence to be felicitous. If this is the case, the utterance is not completely rejected even if it is underinformative, so the scalar implicature is not calculated, and the participants behave more logically. Moreover, the use of classifiers is important since it always triggers the calculation of the implicatures. In the depiction of an

image through classifier constructions the utterance describing the image is expected to be exhaustive, since not being exhaustive results in the depiction of a different image, whether when describing the same image by using only lexical signs this premise is more relaxed, and they may behave more logically accepting underinformative utterances. In sum, the use of signing space and classifier constructions trigger an increase in the calculation of scalar implicatures in LSC. These preliminary results are in line with Davidson (2014) who claimed that the use of space and classifiers triggered a more pragmatic behaviour in ASL signers in comparison to English speakers.

Moreover, participants were asked to rate the sentence ‘there are two items in the picture’, in order to see if the calculation of scalar implicatures with numbers worked in the same way. Both participants rated the sentence as completely infelicitous in relation to the picture, so implicatures with numbers seem to be calculated in the same way as ASL signers and English speakers.

■ 3 Conventional implicature

In the same way as conversational implicatures, conventional implicatures are independent of the truth-conditional meaning. Unlike conversational implicatures, though, conventional implicatures are not context dependent. According to Horn (2004: 4), conventional implicatures are “detachable but non-cancellable aspects of meaning that are neither part of, nor calculable from what is said, akin to pragmatic presuppositions.” They are rather entailed in the semantics of words or expressions. Some of the elements that trigger conventional implicatures are adverbials, connectives and conjunctions, implicative verbs, parentheticals, expressives, and some specific intonational contours (Potts, 2005, 2013). In what follows, some examples of connectives, adverbials, and parentheticals in LSC are shown.

In LSC as well as in many other languages, the connective *BUT* triggers an implicature of contrast that cannot be cancelled. In example (16) below, the descriptive meaning is that Jordi is tall and that Jordi is very bad at playing basketball. The conventional implicature triggered by the connective *BUT* in this sentence is that being tall normally precludes being good at playing basketball. There is an implicature of contrast that cannot be cancelled, since it would be pragmatically odd to say ‘Jordi is very tall but he’s very bad at playing basketball, and there is no contrast between being tall and good at basketball.’

(16) JORDI VERY-TALL **BUT** BASKETBALL PLAY VERY-BAD.

‘Jordi is very tall but he’s very bad at playing basketball.’

(Zorzi, 2018: 107)

Other examples of conventional implicatures in LSC are found in the use of some adverbials, like, for instance, the additive scalar focus particle *even*. König (1991) analyses ‘even’ as triggering conventional implicatures and not presuppositions, since this focus particle always has specific properties: i) it cannot be an entailment of its carrier sentence, and ii) it has a specific projection property: ‘a point of view’ uncertainty, which is entailed in the semantics of the word. In example (17), the belief that is implicated from the utterance (that Kohl is the least likely person to be eloquent) can be attributed to either the sender or to Harry.

(17) Harry believes that even Kohl will be eloquent. (König, 1991: 57)

Herrmann (2013) analyses this focus particle in German Sign Language (DGS) and points out that there is a debate around the nature of ‘even’, namely that it may trigger either a “conventional implicature” or a “pre-supposition” (see Francescotti [1995] and Potts [2012] for more details on this discussion). We rely on König’s (1991) tests and analyse ‘even’ as a conventional implicature.



Figure 2. Sign for ‘even’ in LSC (UNTIL)

In LSC ‘even’ is frequently expressed through the sign UNTIL (Figure 2) articulated along with specific non-manual marking (backwards head tilt, brow raise, eyes wide open, and a mouth gesture). In examples (18–21) below the adverbial UNTIL is triggering the implicature that something is unlikely to happen.

- _____ left sp _____ right sp+ht
 _____ ht,br,we,mth
- (18) IX_{1pl(poss)} GROUP PARTY SUCCESS. **UNTIL** ANNA COME
 ‘The party was so successful. Even Anna showed up!’
 Implicature: It is unlikely that Anna shows up at a party.
- _____ ht,br,we,mth
- (19) MATHS EXAM EASY VERY-EASY. **UNTIL** JORDI IX₃ PASS.
 ‘The maths exam was so easy. Even Jordi passed!’
 Implicature: It is unlikely that Jordi passes a maths exam.
- _____ ht,br,we,mth
- (20) MEETING FANTASTIC. **UNTIL** PERSON DIRECTOR COME TOO.
 ‘The meeting went very well. Even the director attended!’
 Implicature: It is unlikely that the director attends a meeting.
- _____ ht,br,we,mth
- (21) IX APP VERY-GOOD. DOCUMENTS MODIFY ALLOW. **UNTIL** IX_{poss1}
 TEMPLATE CAN.
 ‘This app is very good. It allows you to modify the documents and
 you can even create your own template.’
 Implicature: It is unlikely that an app allows you to create your own
 templates.

Lastly, some syntactic structures, like nominal appositives or non-restrictive relative clauses, can also trigger conventional implicatures in LSC. In example (22), the implicature triggered by the nominal appositive is that, in general, directors of department do not work a lot.

- (22) ROSA WOMAN, **DIRECTOR OF DEPARTMENT**, IX WORK VERY-HARD.
 ‘Rosa, the director of the department, works so hard.’

■ 4 Presupposition

In the presupposition of an utterance there is information that is assumed to be true by the interlocutor in order for the utterance to be meaningful. Some elements that trigger presuppositions in languages (of any modality) are implicative verbs, pronouns and determiners, discourse particles, clefts, and interrogative clauses (Potts, 2013). Moreover, the use of signing space in sign languages may also trigger presuppositional content (Schlenker & Lamberton 2012; Schlenker, Lamberton & Santoro, 2013). Schlenker, Lamberton & Santoro (2013: 111) state that in ASL when loci (that is, spatial locations associated with a discourse referent) appear in a high location in the signing space, they carry presuppositions that involve tallness and great power or importance. According to this research, “a real or metaphorical projection seems to be established between the position of locus *i* relative to the signer, and the position of the denotation of *i* relative to the signer on some salient scale (of height, power or respectability)”. In what follows, some examples of presuppositions triggered by implicative verbs, focus particles, clefts, interrogative clauses, and the use of the signing space in LSC are shown.

Implicative verbs like *continue*, *stop*, *fail* or *manage* trigger presuppositions. In examples (23) and (24) below, the utterances presuppose that Maria used to smoke, since for someone to quit or continue smoking he/she must have smoked in the first place. The triggers of these presuppositions in the following examples are the verbs CONTINUE and CUT.

- (23) MARIA SMOKE CONTINUE
 ‘Maria keep smoking.’
 Presupposition: Maria used to smoke
- (24) MARIA SMOKE CUT
 ‘Maria quit smoking.’
 Presupposition: Maria used to smoke

In examples (25) and (26) below, the presupposition that Maria used to smoke is kept. In addition, in these examples there is also a presupposition triggered by the signs FAIL and SUCCESS, namely that Maria tried to stop smoking.

- (25) MARIA SMOKE CUT FAIL
 ‘Maria failed quitting smoking.’
 Presupposition: Maria used to smoke
- (26) MARIA SMOKE CUT SUCCESS
 ‘Maria succeeded quitting smoking.’
 Presupposition: Maria used to smoke

Moreover, some adverbs and discourse particles like *too* and *only*, may also trigger presuppositions. König (1991: 54) uses two tests to confirm if a certain aspect of the meaning of a focus particle is a presupposition or not: i) the ‘entailment test’ and ii) the test of discourse acceptability. The ‘entailment test’ is based on the assumption that presuppositions are one type of entailment of the sentences they are embedded in: whenever A presupposes B ($A \gg B$), the possibility of not-B cannot be left open if A is uttered, since asserting ‘maybe not-B and/but A’ leads us to a contradiction. Thus, the information that is assumed for the utterance to be meaningful is a fact. On the other hand, the test of discourse acceptability distinguishes presuppositions from ordinary entailments: whenever $A \gg B$, the sequence ‘B and A’ must form a natural and acceptable piece of discourse. On the basis of these tests König (1991: 55) states the following:

- i) additive particles, like *also*, trigger the presupposition that there is an alternative value under consideration that satisfies the open sentence in the scope of the particle, and
- ii) restrictive particles, like *only*, trigger a presupposition that corresponds to the relevant sentence in the scope of the particle.

In what follows, we present some examples of LSC sentences with the focus particles ALSO ‘*also*’ and THAT’S-IT ‘*only*’. In example (27), ALSO is triggering the presupposition that the interlocutor already got advice other than ‘legal advice’.

- (27) IX₁ 1ADVICE₃ LAWYER ADVICE **ALSO**.
 ‘I advise you that you get advice from a lawyer too.’
 Presupposition: The sender already got advice from another person before.

As mentioned before, restrictive focus particles are also common triggers of presuppositions. In example (28) below, the sign THAT’S-IT triggers the presupposition that Mary ate pizza. Since presuppositions survive under

negation, in example (29) we can observe that the presupposition of (28) still holds even if we negate the utterance.

(28) MARIA PIZZA EAT **THAT'S-IT**.

'Mary ate only a pizza.'

Presupposition: Mary ate a pizza.

(29) MARIA PIZZA EAT **THAT'S-IT** NO, IX-LIST-1 PIZZA, IX-LIST-2 SALAD
IX-LIST-3 ICECREAM

'Mary didn't eat only a pizza, she ate a pizza, a salad, and an ice cream.'

Presupposition: Mary ate a pizza.

Regarding syntactic structures, it is very common in natural languages that the use of some clefts, interrogatives, and non-restrictive relative clauses trigger presuppositions (Potts, 2013). In examples (30–33) below, different syntactic structures are presented, all of which trigger the same presupposition, namely that someone took the chair.

(30) CHAIR TAKE WHO? JOAN (pseudocleft)

'The one who took the chair was Joan.'

Presupposition: Someone took the chair.

(31) JOAN SAME CHAIR TAKE (cleft)

'It was Joan who took the chair.'

Presupposition: Someone took the chair.

(32) CHAIR TAKE WHO? (interrogative)

'Who took the chair?'

Presupposition: Someone took the chair.

(33) BOY CHAIR TAKE OFFICE NEXT-TO

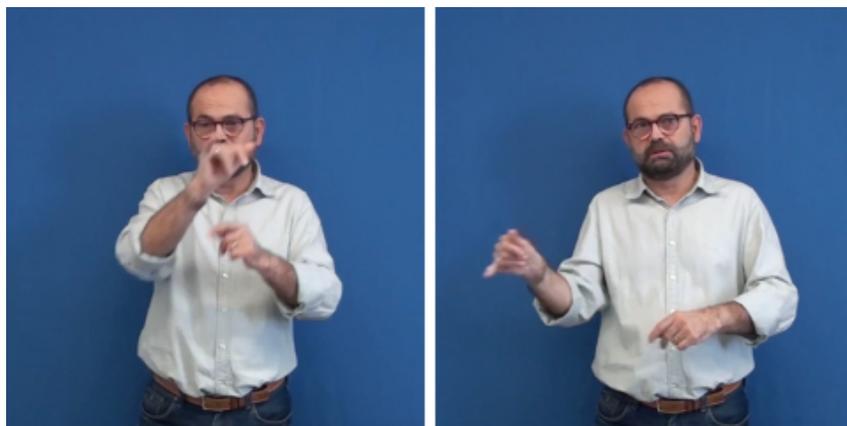
'The boy who took the chair is in the office next door.'

Presupposition: Someone took the chair

In LSC, the use of signing space can also trigger a presupposition. For instance, in some cases the space in front of the signer may be used as a map (topographic use). In example (34), the verb FLY is articulated on the vertical plane moving from a higher rightward position in signing space to a lower leftwards position. This movement is depicting the actual position of the two places being mentioned (the city of Barcelona and the island of Tenerife) in a map. Therefore, it is presupposed that Tenerife is actually located in a south-west position in relation to the position of Barcelona. In

example (35), the signer again makes a topographic use of the signing space by locating Amsterdam and Australia mapping their actual positions in the map (Figure 3).

- (34) WEEK NEXT IX₁ ^{high-right}FLY_{low-left} IX_b TENERIFE
 ‘Next week she will fly (from Barcelona) to Tenerife.’
 Presupposition: Tenerife is located south-west in relation to Barcelona.
- (35) ALICIA WEEK NEXT AMSTERDAM ^{high-left}FLY_{low-right} AUSTRALIA
 ‘Next week Alicia will fly from Amsterdam to Australia.’
 Presupposition: Australia is located south-east in relation to Amsterdam.



A. Location for Amsterdam

B. Location for Australia

Figure 3. Localisation mapping between Amsterdam and Australia by means of the verb FLY

We should highlight, though, that in many cases the signers may choose to use a more abstract location in signing space for expressing locative relations. In example (36) below, for instance, the island of Tenerife is not placed in the south-west position as expected. When there is only one locative in the sentence, the corresponding locus is mainly associated with a default high location and this spatial configuration triggers the presupposition that the locus refers to a location different from the actual discourse situation (Barberà, 2015).

- (36) WEEK NEXT IX₁ FLY_{high-left} TENERIFE
 ‘Next week she will fly (from Barcelona) to Tenerife.’

Moreover, the use of space combined with role shift may also trigger presuppositional content. Role shift is a grammatical phenomenon in sign languages whereby signers may shift into the role of a character, conveying information from that character’s perspective (Lillo-Martin, 2012. See also Simoens & Barberà, this volume). In example (37) below, the signer is addressing the man by looking up with the head tilting backwards, indicating that the person she is addressing to is taller than her. By contrast, in example (38) the signer is addressing the man by looking down, indicating that the addressee is smaller than her. The presupposition in these examples is based on iconicity (Schlenker, Lamberton & Santoro, 2013).

- (37) KNOW YESTERDAY METRO MAN CL(1): ‘person pushing’ RUDE_{high-left}
 ‘You know what? Yesterday in the metro a man pushed me, and I told him he was being rude.’

Presupposition: The man is very tall/taller than me.

- (38) KNOW YESTERDAY OFFICE MAN ENTER CL(1): ‘person_walking’
 RUDE_{low-left}!

‘You know what? Yesterday a man entered the office without saying anything, and I told him he was being rude.’

Presupposition: The man is very small/smaller than me.

In example (39), the signer makes use of a role shift construction again, in order to represent the citizens asking the government to free the political prisoners. In this example, the signer is addressing to a higher locus (figure 4) where the referent that has more power (the government) is localised (cf. Barberà [2015] for discussion on how in LSC the hierarchical constraint overrides iconicity).

- (39) IX_{3pl} CITIZEN++ ASK_FOR_{high-left} GOVERNMENT_{high-left} rsh: PRISONERS JAIL
high-left
high-left
 FREE_JAIL

‘The citizens asked the government to free the political prisoners.’

Presupposition: The government is hierarchically higher than the citizens.



Figure 4. Role shift addressing to a high locus

■ 5 Concluding remarks

This article has offered a first overview on different structures that trigger three types of non-truth conditional meaning content in LSC: conversational implicatures, conventional implicatures and presuppositions. Regarding conversational implicatures, we have found that these type of implicatures are mostly calculated in a similar way as described for other languages. We need to highlight, though, that there is a difference in the calculation of ad hoc scalar implicatures: LSC signers seem to behave in a more logical way when they have to compute ad hoc scalar implicatures, since they accept as felicitous underinformative sentences in which the number of items is reduced. Also, the use of space is an important factor in the calculation of ad hoc scalar implicatures, since the location of the referents in signing space must correspond to their position in the actual world for the sentence to be felicitous. When this condition is violated, it is not possible to know if they are computing the implicature or not, since the rejection comes from the violation of the location in the space.

As for conventional implicatures, this paper shows instances of the connective *BUT*, the focus particle *UNTIL* ('even'), and a parenthetical structure that trigger this type of expressive meaning class.

Lastly, the paper shows some examples of presuppositions in LSC triggered by the implicative verbs *CONTINUE*, *CUT*, *FAIL* and *SUCCESS*, the focus particles *ALSO* and *THAT'S-IT* ('only'), some syntactic structures (inter-

rogatives, clefts, and non-restrictive relative clauses), and the use of the signing space. Regarding the use of the signing space, LSC shows that when using the topographical function with various locatives, it triggers a presupposition of the location in signing space mapping the location in a real map. When there is only one locative in the sentence, it triggers the presupposition that the locus refers to a location different from the actual discourse situation. Moreover, the use of signing space in combination with role shift seems to always trigger a presupposition based on iconicity.

In sum, LSC computes non-truth conditional meaning though the usual triggers that have already been described for many other languages. The differences detected in this paper are due to modality specific effects triggered by the use of signing space, classifier constructions and non-manual markers, which are common elements in signed discourse. The article has focused on a broad topic in order to provide a first prospect in LSC. Particular sub-topics will have to wait for further determination, but at least the way has been paved for more fine-grained future proposals. ■

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