

SQUIB

The expression of time in Spanish Sign Language (LSE)

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Our aim in this paper is to describe and systematize the processes used to express time in Spanish Sign Language (LSE). The conception of time as a line, as well as its nature as a deictic category, are confirmed for both spoken languages and sign languages, although in the former time has been studied mainly as inflection, while other types of resources are common in the latter, particularly the expression of time by means of time lines.

In our analysis we have focused mainly on the description of the lexical processes and the time lines that participate in time marking in LSE. We have also referred to an iconic process, which involves the use of so-called “classifier” predicates.

Keywords: time, time line, Spanish Sign Language

1. Introduction

The visual-gestural manner in which sign languages (SLs) are transmitted conditions the grammaticalisation of any category, and time is no exception. In Section 2 we offer a brief survey of the studies about time in SLs. Section 3 explains the methodology we have used in our attempt to describe how time works in LSE, and the following sections focus on the resources we have identified: in Section 4 we provide a general overview, in Section 5 we draw attention to the lexical processes, and in Section 6 we describe the functioning of time lines. Section 7 is devoted to a specific SL resource: the iconic use of units of language, particularly hand configuration and movement in formations commonly known as “classifiers” (cf. Engberg-Pedersen 1993: 21 and Section 7.3).

2. The expression of time in sign languages

This section presents a brief survey of the processes employed to express time in SLs. We will need to bear in mind the fact that time can manifest itself as a form of deixis. Time is a deictic category when the association of an event with a particular moment is achieved by means of resources related to the act of speech. In the case of SLs, the signer (sender) can use real space to create temporal references, through the metaphorical association of points in space with locations in time. However, he or she can also situate an event in relation to a temporal dimension without turning to deixis, using, for instance, a lexical process to refer to that temporal dimension.

Nevertheless, as we have already suggested, deixis is not limited to grammatical processes, since lexical expression can also be associated with the act of speech. Thus, in SLs it is common to find time signs that are articulated in the signing space, making use of the time references created. Space and deixis extend also to the expression of other categories, such as person (Cogen 1977; Engberg-Pedersen 1993, 1999). The consequence of this linguistic use of space is the anaphoric use of *loci*.

We are using the term “signing space” to refer to the area in which the signer locates all of the signs that he or she makes. In this space we can identify several places of articulation, which may be found in the body or in the space surrounding the signer. Liddell (1990) studied how location was used in American Sign Language (ASL) and introduced the term *locus* to refer to it. He also distinguished four functions performed by the *locus* in different signing contexts: the Articulatory Function, present in all signs; the 3-D Function, characteristic of spatial verbs (space is used mainly to locate three-dimensional objects);¹ a Location Fixing Function (which refers to the capacity to express location by means of deixis); and a Referential Equality Function, which allows us to match certain locations with certain entities, as in the case of agreement verbs.

Time lines are the result of the locational use of these *loci*, since the spatial characteristics of the SL can be exploited, for instance, by moving the body or the articulators towards a space behind or in front (taking the signer’s body as present), in order to mark past or future time references.

The view of time represented by time lines is the central theme of many of the studies carried out about temporal expression in SLs, in which time is seen as a line. The establishment of time lines has ranged from considering a single line to mentioning up to five different ones.

The basic or primary time line is the one that takes the signer’s body as its point of reference and allows us to express general time references. In this line, the present

1. This can be observed, in particular, in the use of the so-called “classifier predicates” and in spatial or locative verbs.

time is seen as unmarked, and it is associated in expression with the signer's body (which constitutes the point of reference). The future (near or distant) is represented in front of the signer's body and the past (also recent or distant), behind. The near or distant future and the recent or distant past are distinguished by the size of the movement and the facial expression.

Other authors discuss more time lines: Brennan (1983) and Sutton-Spence & Woll (1999) mention four (in British Sign Language, BSL); Engberg-Pedersen (1993, 1999) also refers to four lines and adds a temporal plane for Danish Sign Language (DSL); Schermer & Koolhof (1990) establish a total of five lines in Sign Language of the Netherlands (SLN). Most of these authors claim that the use of the time line is fundamental, and greater importance is granted to this process than to the rest of the processes used to express time.

The time lines most frequently mentioned in the literature are the following:

- The line that runs perpendicular to the signer's body, according to which the past is behind and the future, in front.
- The line located in front of the signer's body. In this line, earlier events are ordered from left to right. There are slight differences in the interpretations of this line and its functions in SLs. In some SLs, it is used to indicate continuity or duration, as well as to establish specific time references.
- The growth line:² it exploits the conception of time from the point of view of the individual, that is to say, time is seen as flowing in parallel to the person's life and signalling his or her development. It is usually located to the right of the signer, from foot to head.

Another one of the processes most frequently mentioned by all authors is the lexical expression of time. The use of lexical units constitutes for many of them an alternative to time lines in the expression of temporal notions (Friedman 1975). Within these units, we can distinguish several types:

- Independent lexical items: MORNING, AFTERNOON, EVENING.
- Independent lexical items whose articulation, however, seems to require the time line: YESTERDAY, TODAY. Some authors (Cogen 1977) have studied these lexical units, relating them to the movements that indicate past or future.
- More precise temporal modifiers: ALL-DAY, FROM-MORNING-TILL-NIGHT.
- Signs incorporating numerals. In LSE, the possibility of incorporating numeral quantifiers is limited almost exclusively to the signs that express time. Through this process, we are able to express a more specific reference (TWO-WEEKS),

2. The remaining lines are not used uniformly and may explain specific resources in certain SLs.

combined in the case of some signs with a deictic reference in a specific temporal direction (TWO-YEARS-AGO).

The expression of time by means of nonmanual features is another one of the processes we have encountered (although this would be one of the many functions included in the nonmanual component of SLs). Some authors include this form of expression among the morphological processes (Sutton-Spence & Woll 1999, for BSL). Nonmanual features allow us to express temporal references and, on some occasions, they appear simultaneously with time expressions. They can also indicate if such references are near or distant. Some of the most frequent nonmanual components in these contexts are:

- Upright body: present; backwards tilt of the body or the head: past; forwards tilt: future.
- Facial movements: puffed-out cheeks, etc.
- Use of the eye gaze.

We can also mention morphological expression. We are referring in this case to modifications in the signs to express more specific contents, such as the duration of an event or its habitual nature. However, it is quite unusual to find references in the literature to morphological processes similar to tense inflection in oral languages.³ In the case of BSL, Brennan (1983) discusses the existence of suppletive forms for the past in the following pairs: SEE/SAW, WIN/WON, LEAVE/LEFT, SAY/SAID. She claims that the first two could be considered compound words, since they incorporate a verbal lexeme and the sign FINISH into a single sign. In the cases of LEFT and SAID, both used in Scotland, the perfective marker is not employed. In all cases, the distinction between present and past is always accompanied by a non-manual component. Jacobowitz & Stokoe (1988) suggest that differences in tense are expressed by means of articulatory modifications of the verbs in ASL. This type of descriptions are usually illustrated by a limited number of verbs (both in BSL and ASL), so it does not seem possible to speak of regular grammatical processes.

With regard to ASL, Friedman (1975) discusses the expression of the future by means of the lexicalized modal verb *will* and the use of the perfective markers *finish* and *not-yet*. In the study of linguistic time, we also find a relation between temporal sequencing and other logico-semantic contents (Cogen 1977). We are referring in this case to the chronological order of the events in a signed sequence, in which the sequential ordering can be implicitly understood as a relation of causality.

The time of speaking is seen as unmarked. Once a time reference is established, it is maintained until a new one is explicitly expressed. Time references are established

3. The term tense is reserved for the inflectional expression of the notion of time.

by means of a temporal lexical item or by pointing indexically to a point or a set of points on the time axis.

In short, the study of linguistic time in the sign language literature covers mainly the following aspects:

1. Expression by means of time lines, interpreted as successive loci in the signing space.
2. Time signs: independent lexical items that refer to culturally established units of time.
3. Other resources: nonmanual components, finished time/aspect markers (FINISH, NOT-YET), verbal inflection for tense.

In this paper we will deal with the expression of time in LSE, focusing of the first two types of resources, that is to say, time lines and time signs.

3. Methodology

3.1 Preparing questionnaires and video recording two signers

Two questionnaires were constructed. The first attempted to elicit lexical expressions of time in LSE and their combination with the expression of plural number and quantifiers. Spanish words were used to refer to units of time, in different contexts, in order to elicit the corresponding signs in LSE.

The second questionnaire was intended to prompt different time expressions under four headings:

1. When did it happen? Eight utterances to locate a process in the past. Example: *The Spanish civil war started in 1936.*
2. From when until when? Eighteen utterances that attempt to delimit periods during which an activity takes place. Example: *The class started at 9 and ended at 10.*
3. In what order? Eleven utterances that introduce sequences of events. Example: *Explain how you prepare the chicken.*
4. When will it happen? Ten utterances to locate a process in the future. Example: *In a few years we will all use the Internet.*

Using written statements in Spanish, similar to the examples mentioned above, one of the signers “translates” into LSE; the second person signs without looking at the written Spanish version, following what the first has signed. In the case of some items, to prevent the signing from being influenced by the expression in written Spanish, only one of the deaf signers participated (for instance, the story of Little Red Riding Hood

under heading 3). Our informants are native LSE speakers (Galician variety) and are both between 30 and 40 years old.

The entire process was recorded on video. When both signers participated, two cameras were used simultaneously.

3.2 Recording a semi-spontaneous conversation

Once the relevant temporal contents in LSE were identified, together with what seemed to be their main means of expression, the study was completed by recording a semi-guided conversation. Both deaf participants signed before the camera for slightly over thirty minutes about topics that required the frequent use of time expressions (school and childhood friends, future plans, such as trips or weddings, among others).

3.3 Decoding and glossing

The questionnaires and the semi-spontaneous conversation were both decoded and glossed, using a traditional glossing system based on the one developed by Klima and Bellugi (1979), with the aim of identifying and analyzing the resources used to express time.

4. Time in LSE: General characteristics

After analyzing the data obtained from the questionnaires and spontaneous conversation, the following general characteristics can be outlined regarding temporal marking in LSE:

Present: By default, time is not marked if it is present.

When it is expressed by lexical processes, such as a year, a concurrent grammatical expression may not appear. The sign that situates the event in time usually appears at the beginning:

- (1) 1492 HIMSELF SIGN_[COLUMBUS] DISCOVER AMERICA
'Columbus discovered America in 1492'

Lexical expression and the use of a time line may also co-occur, in which the expression that situates the event in time is articulated on the primary time line (FUTURE-YEARS is made from the signer's chin forward on the time line):

- (2) FUTURE-YEARS ALREADY INCREASE USE INTERNET
'In a few years we will all use the Internet'

The limits of a time period may be fixed either in an analytical way (signing first the moment it begins and then the moment it ends), or using one of the time axes. The following examples illustrate the first possibility, marking first the initial moment (e.g. 'start at ten') and then the final moment ('end quarter to three'). In addition, in example (4) the sign PERIOD 'period of duration' is added; this sign is formed with two **B** hands with palms facing each other, leaving a space in between.

_____lips vibrating

- (3) PAST WEEK MEETING START TEN END QUARTER TO THREE
'Last week the meeting started at ten and ended at a quarter to three.'

_____furrowed brows, rounded lips

- (4) MOST SPANISH MOST TIME ALWAYS EAT TWO TO THREE PERIOD
'Most Spanish people eat between two and three in the afternoon.'

At a specific point in the conversation recorded as part of our corpus, there is an example that illustrates the use of a time line to indicate a period of time. The signer locates a point of reference on the secondary time line with the non-dominant (or passive) hand in a **B** configuration and the fingertips facing forwards; this point of reference is associated by our deaf informants with the year zero, the historical moment of the birth of Christ. The dominant hand then moves from that point, which coincides with the non-dominant hand, towards the right, and, at the same location where the limit of the period is marked, the sign DIE is made, referring to Christ, in order to indicate the moment of his death and, therefore, the period of his life.

To sequence events, the most common process is to order them, that is to say, to sign them in the order in which the events occur in real time. However, we have also identified some signs whose function seems to be similar to that of temporal connectors, although their degree of fixedness and grammaticalization is low. This is the case of READY and TURN in the following examples:

- (5) PRO.1 PREPARE HOME REMOVE-SCALE READY // CLEAN READY // CL:
FISH-PLACE-TRAY

[Extract of the sequence Explain how you prepare the fish]

'I prepare the fish at home; once I remove the scales and clean it, I place it on the tray.'

_____furrowed brows, rounded lips

- (6) PRO.1 PAST CHILD EVERY-DAY MORNING_[N:REPETITION] ALWAYS JUICE ORANGE END
TURN CHOCOLATE DUNK-PASTRY
'When I was a child, every morning I had orange juice and hot chocolate with pastries for breakfast.'

In (5), the sign glossed as *READY*, which follows each of the actions (*REMOVE-SCALE* and *CLEAN*), expresses a finished action, and it is followed by a pause each time it appears. This double use of a sign with a perfect meaning and the subsequent pause give the sequence a highly repetitive rhythm, which achieves a cohesive effect in the discourse. Regarding the second example, it is interesting to note the appearance of the sign *END*, which has an aspectual content of finished action. This is another example (like *READY* and *TURN*) of a lexeme that could be on the way towards becoming grammatically fixed. These signs, and probably other LSE signs as well, could be losing part of their semantic content in order to gradually become function markers.⁴

Examples (3), (4), (5) and (6) all contain lexical elements linked to the expression of aspect. More specifically, in (3) *START* expresses inceptive content; in (4) and (6) we find the notion of habitual action in the signs *ALWAYS* and, in the second case, in *EVERY-DAY MORNING* _[N:REPETITION] *ALWAYS*. Example (5) contains the perfect, as we have already mentioned. In these expressions it is quite frequent to find associated non-manual components, which are recurrent: this is the case of the lip vibration in *START*, or the rounding of the lips to express the notion of habituality.⁵



Figure 1. *START*

4. It is not possible to predict whether or not LSE will consolidate these apparent processes of grammaticalization. Besides, an in-depth study of this phenomenon has yet to be carried out.

5. It seems difficult, however, to make a similar generalization regarding the modal contents of possibility, uncertainty, probability, etc. associated with the future. The data analyzed do not provide enough information.



Figure 2. ALWAYS

We will now analyze in greater detail the two processes that we have considered the most relevant: on the one hand, lexical expression and, on the other, the use of time lines.

5. Lexical expression of time in LSE

We have already mentioned that one of the processes discussed by all authors is the lexical expression of time, that is to say, the expression of time by means of signs that refer to temporal units.

Among the concepts we have found associated with the lexical expression of time in LSE are: *present, past, future, to be late, morning, afternoon, evening, second, minute, hour, day, week, month, year, century, today, yesterday, the day before yesterday, tomorrow, calendar, before, after, now, to spend time, to take time, recently.*

Some of the signs associated with these concepts are deictic, that is to say, they are articulated on the time lines, whereas others are not. Among the deictic ones are: PRESENT, PAST, FUTURE, TODAY, YESTERDAY, THE-DAY-BEFORE-YESTERDAY, BEFORE, AFTER, NOW. Among those not associated with time lines are: HOUR, DAY, MONTH, MINUTE, SECOND, MORNING, AFTERNOON, EVENING.

In LSE, some units of time are expressed by means of a single sign. This is the case, for instance, of MINUTE or SECOND. Others may be conceptualized in different ways, which implies that they can be expressed by means of different signs. Usually, there is a neutral sign that provides the general conceptual meaning (example 7) and other

signs that provide temporal nuances (examples 8 and 9). For instance, there is a neutral sign to refer to the concept *year*, but there are up to eight additional articulations for more specific meanings, such as *365-day period*, *every year*, *every x years*.

- (7) YEAR ONE-THOUSAND 900 9 2 OLYMPICS BARCELONA // PRO.1 PAST AGE 20
 ‘The Barcelona Olympics were in the year nineteen ninety-two. I was twenty years old.’



Figure 3. YEAR (general)

- (8) ONE-YEAR BE TWELVE MONTHS
 ‘There are twelve months in a year.’

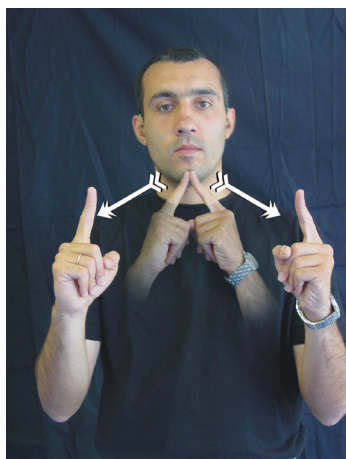


Figure 4. YEAR (period)

- (9) SCHOOL ALWAYS EVERY-YEAR STUDENT EX CL:GET-TOGETHER
 ‘An alumni reunion is organized every year at my school.’



Figure 5. YEAR (cycle)

We have also found time signs that provide information related to the duration or completeness of the particular unit of time: ALL-DAY, FROM-MORNING-TIL-NIGHT. These may be either stable signs, that is to say, signs that exist in the standard lexicon, or time signs that have undergone the modification of one of their parameters, such as an increase in movement size, usually associated with the expression of aspectual contents.

5.1 Deictic signs articulated on time lines

We can express temporal concepts by means of independent lexical items whose configuration seems to require the use of time lines. The signs YESTERDAY, TODAY, PRESENT, PAST, FUTURE, BEFORE, AFTER and NOW are deictic signs, that is to say, they move in the signing space, performing a forwards or backwards movement associated with the time lines. In the case of the sign YESTERDAY, for instance, the movement is performed at the shoulder (in the same direction as the sign PAST). In certain contexts, some of the signs we have considered in the previous section, such as YEAR, move along the primary time line in order to indicate “past year” or “future year.”

5.2 The quantification of units of time

In LSE, the possibility of incorporating numeral quantifiers is restricted almost exclusively to the signs that express time (Fernández Soneira and Martínez Fuentes 2003). Through this process we can express a specific quantity (*two weeks*, for instance), combined in the case of some signs with a deictic reference in a particular temporal direction (*two years ago*).

Not all signs allow the incorporation of a numeral. The possibilities of incorporating a numeral configuration into a time sign, whose form maintains the remaining parameters, are limited to those that present the basic handshape index finger extended from closed fist. In LSE, numeral incorporation is allowed by the signs HOUR (expressing duration), WEEK, MONTH and YEAR (past or future). Although this condition is met in most cases, exceptions such as SECOND, which also has the same basic handshape in LSE, lead us to think that the restrictions to the incorporation of numerals into time signs are not just of an articulatory nature.

This incorporation is combined with other morphological processes, such as a circular movement to express habitual actions, the anaphoric use of spatial location to indicate frequency (*every two days*), and the use of the primary and secondary axes for anterior or posterior time references (*two years ago*, *in two years' time*, or *every four years*, as in example 10).

- (10) 2 9 FEBRUARY PRO.1 ALWAYS PRO.1 BIRTHDAY PARTY
 EVERY-4_YEARS_[A: REITERATIVE]
 'My birthday is on February 29th. My party is every four years.'⁶

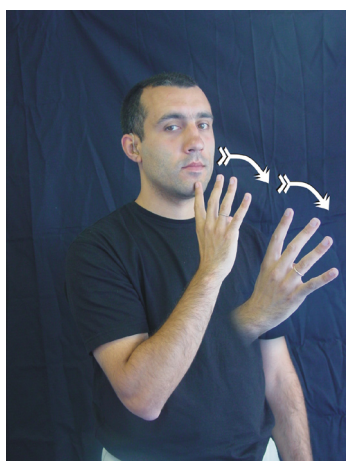


Figure 6. EVERY-FOUR-YEARS

Here the signer speaks about his birthday (29th February). To express the time unit *four years*, he uses a sign with numeral incorporation (YEAR starting at the chin) along the primary time line, directing the sign forward from the chin. He adds a circular movement to indicate habitualness and repeats it several times. We can see, therefore, the exploitation of two grammatical processes.

6. The underscore is used to represent numeral incorporation, since it indicates the fusion of two or more signs.

6. Time lines in LSE

As in other sign languages described, the signing space is used in LSE to express time. For this purpose, the *loci* that are likely to be used in the expression of this category are ordered linearly, so that the notions of before and after are associated with the arrangement of the imaginary points that form the time lines.

Our observations have led us to suggest that there are two axes or lines on which temporal deixis is marked in LSE.⁷ We have called them the *basic time line* and the *secondary time line*. The fact that two lines can be distinguished is associated, in our opinion, with the difference between absolute temporal relations (expressed along the basic time line) and relative temporal relations (expressed along the secondary time line).⁸

In the absence of any kind of time reference, the signed discourse is understood as referring to the present, the time that is not marked in relation to the signer. Once the basic or primary time line is activated, the present moment is made to coincide with the signer's body, so that temporal deixis expresses relations of simple simultaneity, anteriority or posteriority with regard to that basic point of reference. If the signer wishes to express indirect temporal relations by means of a point of reference introduced in the discourse, it must be made explicit. This is done in neutral space, thus creating a second time line in which temporal relations are established with relation to that point of reference introduced by the signer.

6.1 The basic or primary time line

The basic or primary time line expresses the conception of *before* and *after* adopting the basic metaphor of space as time: the past is behind the signer, while the future is in front of him or her. The point of reference is, therefore, the individual's body and, unless otherwise indicated, it coincides with the moment of speaking.

- (11) NOW PRO.2 PAST REMEMBER CLASS_[N:REPETITION] LIFE PAST TODAY NOW DIFFERENT
 NOW DIFFERENT PAST DIFFERENT
 'The signers reminisce about their school days and talk about the differences
 between their past and present lives.'

7. We have also identified the resource that consists in marking, from head to foot, on the signer's body, the time line associated with the individual's growth, that is to say, with the person's lifetime measured as age (for instance, in the sign BIRTHDAY). However, we have decided not to consider it a different time line and to focus instead on more general expressions of time as a deictic category.

8. We have noticed that it is possible to introduce BEFORE in the basic axis, although this time reference is more generic than the examples we have found in the secondary axis. When our informants wish to sign "before" in relation to a specific time reference, they change to the secondary time line.



Figure 7. BASIC TIME LINE

The use of the basic time line constitutes a very productive grammatical process in LSE. It not only allows us to refer to the past or the future in a deictic and direct manner, as absolute verb tenses do in oral languages, but some lexical units can also be articulated along it, as we have already pointed out in Section 6.

The use of the basic time line can also be combined with other morphological processes characteristic of LSE, in order to express notions such as aspect in time units. In (12), the sign glossed as EVERY-FRIDAY is made with a repetitive movement, which is not part of the usual articulation of this sign, along the basic time line. In this way, the aspectual content of habitualness is expressed (see video stills).

- (12) YES TRUE PRO.1 OBSERVE_[A: REITERATIVE] EVERY-FRIDAY SURE TIME DELAY TRUE
 ‘Really notice how we are late every friday’



Figure 8. EVERY-FRIDAY

- (13) LIFE EVOLVE PAST SAME NO CHANGE_[A: PROGRESSIVE] [LOC X-LOC Y] LIFE EVOLVE
 CHANGE_[A: PROGRESSIVE]
 ‘Life evolves, it is not the same it used to be, it changes’

The movement is performed along the time line, articulating a sign (CHANGE) which, in general, does not refer to units of time, but which does take on a temporal-aspectual meaning, since the slowed-down movement forwards expresses iconically that the change referred to is gradual.



Figure 9. CHANGE (CAMBIAR) unmarked



Figure 10. CHANGE (CAMBIAR) marked for time-aspect

6.2 The secondary time line

A frontal axis may be used in LSE to situate events in relation to a point of reference marked along this line. Relations of anteriority are expressed to the left (from the signer's perspective) and relations of posteriority are expressed to the right, with regard to the point of reference. Due to the existence of that temporal reference marked by the signer, the temporal relations expressed in this way are indirect, and these uses are similar to those of relative tenses in oral languages. Like the basic time line, the secondary time line also constitutes a highly grammaticalized resource in LSE.

In example (14), the point of reference (POINT-X) is made to coincide with the birth of Christ. The signer asks if her interlocutor knows which events happened before and after that moment.⁹

- (14) PRO.2 KNOW_[NONDOMH] POINT-X/BEFORE JESUS-CHRIST BORN OR
 _____ q (furrowed brows)
_[NONDOMH] POINT-X/AFTER HOW



Figure 11. Secondary time line

Once a point of reference is introduced in the discourse along this time line, it is maintained or reused.

It may also be combined with other grammatical resources characteristic of LSE. In the same context as the previous examples, in which the point of reference is made to coincide with the birth of Christ, one of the signers maintains that point of reference

9. There is a point of temporal reference (X) that is marked by the passive hand, with a flat palm, fingers together and extended, facing forwards. The active hand moves from the passive hand leftwards to mark BEFORE/PAST and rightwards to mark AFTER/FUTURE. We would like to point out that our informants are right-handed.

with the non-dominant hand (in a configuration of flat palm facing rightwards with fingers together facing forwards), while the dominant hand, in an **A** handshape with extended thumb, makes a slow movement from left to right on the left side of the point of reference. The direction of the movement reproduces the direction of passing time, and the fact that it is made slowly conveys the notion of durative aspect.

The use of this line may be extended, since it may become a plane in certain circumstances, such as when we express calendric units: *EVERY-TWO-DAYS*, *EVERY-TWO-WEEKS*. The signs move not only along the frontal-horizontal axis (the days), but also from top to bottom, reproducing the spatial arrangement of weeks in a calendar.

Comparing our observations regarding the use of the two time lines we have described in LSE, we can highlight the following aspects:

- The difference between one and the other does not lie in the reference to a nearer or more distant past.
- It is more clearly related to the expression of a direct relation with the moment of the discourse (primary time line) as opposed to the expression of an indirect relation (secondary time line). We could establish a comparison with the classic distinction between absolute tenses and relative tenses.
- As a result, we believe that the references indicated on the secondary time line are more specific, because the signer creates a definite point of reference, which is then used to indicate the particular temporal relation.
- The reference established on the secondary time line is always a point in the past, such as the birth of Christ in example (14). Relations of anteriority and posteriority are expressed with respect to this point, but we must bear in mind that the simple future (just like the simple past) is only expressed on the primary time line.

7. Iconic use of the non-dominant hand to express calendric units

LSE allows us to create a point of reference with the non-dominant hand, which acts as the representation of an object.¹⁰ The hand can serve as a pocket calendar, which bears the months on the front (the inner surface of the hand) and a drawing or photograph on the back (the outer surface of the hand).

10. It is not our intention to enter into the discussion of the status of the signing units known as “classifiers” or “classifier predicates.” They have recently undergone thorough study, as shown by the papers collected in Emmorey (2003). Cogill-Koez (2000a and b) suggests an interesting distinction between a linguistic perspective and a visual perspective in the analysis of these signs, which are present in all known SLs, and she states that she is in favor of considering them a visual representation. This decision is based on the acknowledgement of the analogical and iconic nature of classifiers.

This resource appears in the conversation we analyzed, where it reaches a high degree of mimetism. At a particular point, speaking about the date of a wedding, the non-dominant hand is used as a proform, as we have already suggested, open, with the palm facing the signer and the extended fingers oriented to his right. In the previous discourse it is specified that it refers to the month of August. It becomes clear that each of the fingers represents a week, because the signer goes through them with the index finger of his right hand (dominant). After reaching the third week (ring finger), the signer marks a point in it, which he identifies as Saturday (he signs SATURDAY) and then he points to that location once again, employing the handshape used for the sign SPECIFIC-DAY, which is the one used to refer to a particular date. During the process of manual articulation, while the non-dominant hand is used as a classifier, the signer's eye gaze is fixed on it.¹¹ Then he signs numerically the day of the month, 25, and repeats the handshape SPECIFIC-DAY at the same point. The pictures below show the sign SPECIFIC-DAY in the articulation described and, separately, the configuration of the dominant hand.

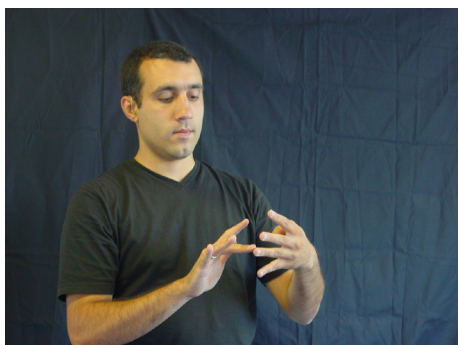


Figure 12. SPECIFIC-DAY

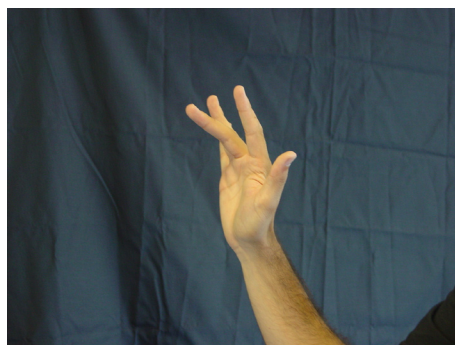


Figure 13. Handshape for SPECIFIC-DAY

Despite the highly iconic nature of this process, and the fact that a very specific reference is developed, we can consider it a standard process within LSE for several reasons:

1. The contact between the dominant hand and the non-dominant hand is used as an indicator of simultaneity, in a manner that is not very different from that described for the secondary time line.
2. The point of reference established by the non-dominant hand is iconic but regular (it acts as a “classifier”).
3. Despite being strongly linked to the context, it is not completely dependent on it.

11. The analysis of our data leads us to suggest that the eye gaze does not have a direct function in the expression of time in LSE. In this particular case, it serves to actualize the referent (the weeks of the calendar). The fact that an iconic process is used is associated with a high degree of specificity. The signer is referring to a particular day, expressed also by a highly specific resource — the hand representing the monthly calendar.

8. Conclusions

The visual-gestural mode of transmission, which is characteristic of sign languages, leads to the use of the signing space to express time. This particular feature is also widely employed in LSE, especially in the use of the basic and secondary time lines as a grammatical resource. Thus, the deictic nature of the time category is revealed in the possibility of marking direct or indirect temporal relations along these lines.

The study of the literature on this topic has led us to identify a series of resources that are present in the expression of time in SLs. These resources are those mentioned in Section 2: time lines, lexical processes (signs that refer to units of time), non-manual components, finished time/aspect markers, and verbal inflection.

In our analysis of LSE, which we have based both on questionnaires and on the recording of a semi-guided conversation, we have confirmed that LSE does use some of those resources, particularly lexical expression and time lines.

The lexical expression of units of time in LSE is achieved by means of both deictic signs (PRESENT, PAST, TODAY) and non-deictic signs (HOUR, DAY, MONTH). The former are articulated on the time lines. In addition, some are conceptualized in a single lexeme (MONTH, MINUTE, SECOND) and others in several, which allows different perspectives on a particular time unit (YEAR, HOUR, DAY). Another characteristic of certain of these signs is that they admit a process of quantification of a morphological nature. In LSE, the possibility of incorporating numerals is limited almost exclusively to lexical expressions of time, since these are virtually the only ones that allow this particular type of quantification.

There are two time lines that function in the expression of time in LSE, which we know as the basic or primary time line and the secondary time line. The former takes the signer's body as its point of reference, locating the past behind it and the future in front. The latter is created when the sender locates a point in the signing space and establishes references of simultaneity (on the point of reference), anteriority (to the left of the point of reference), and posteriority (to the right of the point of reference). Therefore, the basic time line establishes direct relations with respect to the speech act, while the secondary time line indicates them by means of a point of reference created specifically for this purpose, and therefore expresses indirect temporal relations.

LSE allows the association of time marking with other categories, particularly aspect. Aspectual markers are associated with temporal markers to specify the manner in which actions take place, according to their duration, their habitualness or other notions generally associated with the concept of aspect. They may appear both combined with the time lines and linked to signs that refer to calendric units. The articulation of a particular sign may undergo alterations in order to express the manner in which the action develops internally, as in (13). Aspectual contents may also

be conveyed by means of specific aspectual signs (START, EVERY-DAY, END), which are frequently accompanied by recurrent nonmanual components.

Another resource that has attracted our attention is the use of iconic devices that allow time deixis to be interpreted as a locative predication, where the place is represented by the non-dominant hand in a configuration that represents the shape of the object.

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References

- Brennan, M. (1983). "Marking time in British Sign Language". In Kyle, J. & B. Woll (eds.), *Language in sign: An international perspective on sign language*, pp. 10–31. London: Croom Helm.
- Cogen, C. (1977). "On three aspects of time expression in American Sign Language". In L. A. Friedman (ed.), *On the other hand: New perspectives on American Sign Language*, pp. 197–214. New York: Academic Press.
- Cogill-Koez, D. (2000a). "Signed language classifier predicates: Linguistic structures or schematic visual representation?" *Sign Language & Linguistics* 3/2: 153–208.
- Cogill-Koez, D. (2000b). "A model of signed language 'classifier predicates' as templated visual representation". *Sign Language & Linguistics* 3/2: 209–236.
- Emmorey, K. (eds.) (2003). *Perspectives on classifier constructions in sign languages*. Mahwah: Lawrence Erlbaum Associates.
- Engberg-Pedersen, E. (1993). *Space in Danish Sign Language: The Semantics and Morphosyntax of the Use of Space in a Visual Language*. Hamburg: Signum Press.
- Engberg-Pedersen, E. (1999). "Space and time". In Allwood, J. & P. Gärdenfors (eds.), *Cognitive semantics: Meaning and cognition*, pp. 131–152. Amsterdam and Philadelphia: Benjamins.
- Fernández Soneira, A. & S. Martínez Fuentes (2003). "La incorporación numeral en las lenguas signadas". *Revista de Investigación Lingüística* 1/1:67–86.
- Friedman, L. A. (1975). "Space, time, and person reference in American Sign Language". *Language* 51: 940–961.

- Jacobowitz, E. L. & W. C. Stokoe (1988). "Signs of tense in ASL verbs". *Sign Language Studies* 60: 331–340.
- Klima, E. & U. Bellugi (1979). *The signs of language*. Cambridge, MA: Harvard University Press.
- Liddell, S. K. (1990). "Four functions of a locus: Reexamining the structure of space in ASL". In C. Lucas (ed.), *Sign language research*, pp. 176–198. Washington DC: Gallaudet University Press.
- Schermer, T. & C. Koolhof (1990). "The reality of time-lines: Aspects of tense in Sign Languages of the Netherlands (SLN)". In Prillwitz, S. & T. Vollhaber (eds.), *Current trends in European Sign Language Research: Proceedings of the third European Congress on Sign Language Research* (Hamburg, July 26–29, 1989), pp. 295–305. Hamburg: Signum Press.
- Sutton-Spence, R. & B. Woll (1999). *Linguistics of British Sign Language: An introduction*. Cambridge: Cambridge University Press.

Appendix: Spanish source sentences

Some of the examples used in this paper have been taken from questionnaires in Spanish, as we have explained in Section 3.1. They are examples (1), (2), (3), (4), (6), (7), (8), (9) and (10). The source expression in Spanish is provided below:

- (1) Colón descubrió América en 1492.
- (2) Dentro de unos años todos usaremos internet.
- (3) La semana pasada la reunión empezó a las diez y acabó a las tres menos cuarto.
- (4) La mayoría de los españoles come entre las dos y las tres de la tarde.
- (6) Cuando era pequeña todas las mañanas desayunaba un zumo de naranja y después un chocolate con churros.
- (7) En el año 1992 fueron las Olimpiadas de Barcelona. Yo tenía veinte años.
- (8) Un año tiene doce meses.
- (9) En mi colegio organizan anualmente una reunión de ex-alumnas.
- (10) El 29 de febrero estoy de cumpleaños. Mi fiesta es cada cuatro años.

Example (5) has also been taken from one of the questionnaires, but it was more loosely worded, so that the LSE version is not the result of translation. The question was: *Explica cómo preparas el pescado*.

The remaining examples have been taken from the semi-spontaneous conversation, which was recorded as explained in Section 3.2.

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