

Question sign position in LSQ (Québec Sign Language) †

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1 INTRODUCTION

The objective of this paper is to more accurately define the position of *wh*-interrogative signs in surface structure in Quebec Sign Language (LSQ). A brief overview of the research into interrogative signs in languages other than LSQ leads to the observation that these signs can occur in various positions and they may even be repeated within the same question. However, the use of these different positions is not predictable. Using a corpus of interrogatives collected in LSQ, we will test the hypothesis that emphasizing certain constituents (as in focus or echo constructions) will influence the position of *WH*-sign, and furthermore, that the factors determining *WH*-sign position are largely articulatory rather than syntactic in nature.

2 POSITION OF *WH*-SIGNS IN DIFFERENT SIGN LANGUAGES

Many research papers on sign languages, as well as various sign language teaching manuals, make both direct and indirect reference to the position of the interrogative sign in the sentence.

Table 1 is a summary of the references we have found in American Sign Language (ASL), British Sign Language (BSL), French Sign Language (LSF) and Sign Language of the Netherlands (SLN).

Table 1: Position of *wh*-signs in various sign languages

Author(s)	Year	Language	Position of <i>WH</i> -sign		
			Initial	Final	Echo
Cokely and Baker	1980	ASL		•	•
Humphries et al.	1980	ASL	•	•	•
Liddell	1980	ASL	•	•	•
Baker-Shenk	1983	ASL	•	•	•
Wilbur	1987	ASL	•	•	•
Lillo-Martin	1990	ASL	•	•	•
Woll	1981	BSL	•	•	•
Moody	1983	LSF		•	•
Fève-Tagger	1991	LSF		•	•
Coerts	1992	SLN	•	•	•

It is clear from the data presented in Table 1 that in the majority of these sign languages, the interrogative sign can be placed either at the beginning or at the end of a sentence, or both. Available examples in LSF do not show any at the beginning of a sentence. However, although Moody [1983] only gives examples in which the interrogative sign is placed at the end of the sentence, or at both the beginning and the end of the same sentence, he does not specifically exclude the possibility of an interrogative sign being placed solely at the beginning of a sentence. The same remark can be applied to Fève-Tagger [1991] who also made use of Moody's corpus.

The evidence provided by these references leads to the hypothesis that if LSQ follows the pattern of the other languages, we expect to find a *WH*-sign in either sentence-initial¹ or sentence-final position, or both. However, there is insufficient evidence to differentiate between the three possibilities, or to determine which one of them occurs most frequently.

3 METHOD

Our informants experienced considerable difficulty in judging the relative grammaticality of different *WH*-sign positions in an interrogative. Consequently, we based our work on a corpus compiled from thirty-five hours of video-taped free conversation between our deaf informants (LSQ88 corpus). We have identified one hundred *WH*-questions that contain interrogative signs. We transcribed these interrogatives, using French glosses, identifying sentence boundaries, and then proceeded to analyse the data.

3.1 *WH*-signs

The interrogative signs that we have taken into consideration in the corpus are *QUI* (who), *QUOI* (what), *OU* (where), *COMMENT* (how), and *POURQUOI* (why)².

3.2 Positions of *WH*-signs

In order to determine the beginning of a *WH*-question, we took into consideration the backward tilt of the head which obligatorily accompanies this type of sentence [see Dubuisson et al., 1991]. The initial position of the sentence was thus determined as being the position of the first sign following the sentence boundary; exceptions to this definition are sentences beginning with a coordinating conjunction, such as "mais" (but), and certain sentences which begin with an *INDEX*₂. In effect, we observed that an interrogative can be preceded or followed by an *INDEX*₂ which is used as an interjection to draw the addressee's attention to the signer's question or statement but does not have any syntactic function in the sentence.

In the interrogatives illustrated in (2), the *WH*-sign is the first syntactically relevant

sign in the sentence as is the case for QUI in (1), and is therefore considered to be sentence-initial.

Example 1.

_____ whq

QUI RENVOYER

WHO FIRE

'Who was fired?'

Example 2.

_____ whq

PTÊ2 QUI PRÉSIDENT

INDEX2 WHO PRESIDENT

'Tell me, who is president?'

The end of an overt interrogative can be marked in several ways. The one most easily recognizable is where the signer stops and awaits a reply. In many cases, however, the signer will ask a series of questions, so as to be more explicit, or to propose possible answers (in which case, the final questions in series are yes/no questions). In these instances, the end of the question is determined by the meaning of the sentence, although it will generally be accompanied by a turning of the head to the left or to the right. In the case of "false" or "rhetorical" questions, the end of the question is determined by the beginning of the answer, also given by the signer. In the case of questions which form part of role-playing, it is again the beginning of the answer (given by the signer) which determines the end of the question. The sentence-final position is the position of the last sign before the sentence boundary, except when the question is terminated by the type of INDEX2 that we described earlier.

In the interrogatives illustrated in (3) and (4), we take the WH-sign to be in sentence-final position.

Example 3.

_____ whq

POURCENTAGE QUOI

PERCENTAGE WHAT

'What is the percentage?'

Example 4.

_____ whq

PRÉSIDENT QUI PTÊ2

PRESIDENT WHO INDEX2

'Who is the president?'

In several other interrogatives, the WH-sign occurs neither at the beginning nor at the end of the sentence, thus we are led to consider a third possibility that the WH-sign occurs in some undefined position or placement. (5) and (6) are examples of this type.

Example 5.

_____ whq
 PARLER QUOI SUITE
 SPEAK WHAT NEXT
 'What do we talk about next?'

Example 6.

_____ whq
 DISTRIBUER COMMENT PTÉI
 DISTRIBUTE HOW INDEXI
 'How am I going to distribute that?'

We considered the occurrence of a same WH-sign in both sentence-initial and sentence-final positions to represent an echo. Examples (7), (8) and (9) illustrate echo WH-signs.

Example 7.

_____ whq
 COMMENT PREUVE COMMENT
 HOW PROVE HOW
 'How can it be proved?'

Example 8.

_____ whq
 PTÉ2 QUOI PREMIER QUOI
 INDEX2 WHAT FIRST WHAT
 'Tell me, what do we do first?'

Example 9.

_____ whq
 QUI CONQUÉRIR QUI APRES
 WHO CONQUER WHO AFTER
 'Who is he going to conquer next?'

3.3 Corpus

Table 2 shows the breakdown of *WH*-signs according to the place they occupy in questions.

Table 2: Details of *WH*-signs according to their positions

s-initial	34
s-final	30
s-internal	9
echo	27
Total	100

Our data indicate that the diversity of *WH*-sign placements in LSQ reflects what is found in other sign languages, sentence-initial placement appearing to be somewhat more common. Since sentence-internal *WH*-sign placement is relatively rare in LSQ, and unattested in other sign languages, we were unable to establish any clear cross-linguistic similarities for anything other than initial and final positions.

Table 3 shows the details of the placement of different *WH*-signs.

Table 3: Sentential positions of individual *WH*-signs

<i>WH</i> -sign	initial	final	internal	echo	total
QUI (<i>who</i>)	10	3	2	9	24
QUOI (<i>what</i>)	–	15	3	10	28
OU (<i>where</i>)	2	9	–	5	16
COMMENT (<i>how</i>)	8	2	4	1	15
POURQUOI (<i>why</i>)	14	1	–	2	17
Total	34	30	9	27	100

A general pattern emerges from this table, in the preference for sentence-initial position for QUI (*who*), COMMENT (*how*) and POURQUOI (*why*), as opposed to sentence-final position which is preferred for QUOI (*what*) and OU (*where*).

3.4 Analysis of the data

3.4.1 QUI (*who*)

The observed pattern of placing QUI (*who*) in sentence-initial position and QUOI (*what*) in sentence-final position could be linked to the positioning of the subject and object, before and after the verb, respectively. On the hypothesis linking *WH*-sign position to its grammatical function, we would expect to find only QUI (*who*) subjects in sentence-initial position and QUI (*who*) objects in sentence-final position. However, we have not been able to make any distinction of this type between the ten QUI's (*who*) in sentence-initial position and the three QUI's (*who*) in sentence-final

position. In addition, there is no independent motivation, at the moment, for assuming that LSQ has an SVO structure.

All the occurrences of QUI (who) that we identified were subjects. Nevertheless, our informants assure us that sentences such as (10) and (11) are grammatically correct.

Example 10.

whq

QUI PIERRE ₃ENGAGER_a
 WHO PIERRE_a ₃HIRE_a
 'Who is Pierre hiring?'

Example 11.

whq

QUI PIERRE_a _aENGAGER₃
 WHO PIERRE_a _aHIRE₃
 'Who is hiring Pierre?'

The different grammatical functions played by the sign PIERRE is not translated by a difference in sign order, but by a change in the movement of the directional verb which moves from the object to the subject locus. In (10), the movement is towards the place where PIERRE is situated, whereas in (11) it was away from where PIERRE is situated.

Moreover, some of the sentences in our corpus with QUI (who) in sentence-initial position and some with QUI (who) in sentence-final position appear to be of exactly the same type. Examples (12) to (15) illustrate these instances.

Example 12.

whq

ELLE-MEME QUI
 SELF WHO
 'Who is this person?'

Example 13.

whq

QUI BEAULIEU
 WHO BEAULIEU
 'Who is Beaulieu?'

Example 14.

whq

(...) cl-I/ QUI ENGAGER
 (...) cl-I/ WHO HIRE
 'Who has hired him?'

Example 15.

 _____ whq

(...) VOTER/ DÉCIDER QUI

(...) VOTE/ DECIDE WHO

'Who has decided?'

The interrogatives in (I2) and (I3) were signed by a person who was observing a conversation and then interrupted it to ask for a clarification. In both cases, the signer's hands were at rest (on their knees) before and after the sentence. It is different for sentences (I4) and (I5), both of which were preceded by a stretch of discourse.

In the view of our informants, sentences (I2) and (I3) can alternate with (I6) and (I7) respectively, without any change of meaning or emphasis.

Example 16.

 _____ whq

QUI ELLE-MEME

WHO SELF

'Who is this person?'

Example 17.

 _____ whq

BEAULIEU QUI

BEAULIEU WHO

'Who is Beaulieu?'

This leads us to the preliminary hypothesis that two positions exist for the WH-sign QUI (who), sentence-initial or sentence-final.

As for sentences (I4) and (I5), our informants believe that for isolated sentences, it should be possible to find the forms (I8) and (I9), respectively.

Example 18.

 _____ whq

ENGAGER QUI

HIRE WHO

'Who has hired him?'

Example 19.

 _____ whq

QUI DÉCIDER

WHO DECIDE

'Who has decided?'

However, they felt that taken in the context of the preceding signs in the video excerpts (14) and (15) were more natural. We observed in (14) that, when the signer begins to articulate QUI (who), he has just produced the classifier ONE (CL-1) ('individual') with the dominant hand. Both signs have a similar handshape as well as the same orientation. The transition from one sign to the other involves a minimum of changes at the phonological level. The choice of the order ENGAGER QUI (hire who) would have been less economical since the formational parameters of ENGAGER are less similar to those of the person classifier. In the case of (15), the signer begins to articulate DÉCIDER (decide) immediately after the sign VOTER (vote) which ends the previous sentence. Both signs are two-handed; the handshape and orientation of the non-dominant hand are the same for both signs, and the movement for the second sign begins at the location where the first sign ends. Here again, the transition from one sign to the other involves a minimum of change of phonological form between signs. If the order QUI DÉCIDER had been chosen, the one-handed sign QUI, with contact on the chin, would have required more extensive changes of form in the transition between the two two-handed signs, thus breaking the overall smooth movement contour.

This leads us to refine our previous observations: even if two positions do exist for the WH-sign, which could be used interchangeably in isolated interrogatives, in context, the signer makes a choice on essentially articulatory grounds. This choice concerns the fluidity of movement between adjacent signs: we hypothesize that this is not a constraint but rather a tendency.

Let us now consider the examples (20) and (21), which correspond to sentence-internal placement:

Example 20.

whq

MAIS (OR) PTÉ₂_a QUI INFORMERA
 BUT INDEX₂_a WHO INFORM_a
 'But, who has told you?'

Example 21.

whq

MARRAINE QUI DIRE-3
 GODMOTHER WHO SAY-3
 'Who did the godmother say it to?'

In (20), INDEX₂ is not being used as an interjection, as in (8), but serves rather as the object of the verb. In this sentence, INDEX₂ appears to be focused⁴. The same may be said of MARRAINE (godmother) in (21). However, we have not yet conducted any

systematic studies into the criteria which characterize focused constituents, so for the time being, we must rely upon our informants' intuitions concerning the manner in which any particular constituent may be emphasized.

An analysis of the movements involved in producing the question (20) shows that INDEX2 is articulated with the dominant hand away from the body; it then returns toward the body, in order to make contact with the chin for the sign QUI and then both hands move outwards from the level of the forehead in order to sign INFORMER (inform). This sequence of movements would clearly have been more fluid if the sentence had been constructed as in (22), but the emphasis on INDEX2 would then have been lost.

Example 22.

whq

MAIS QUI INFORMER₂ PTÉ2
 BUT WHO INFORM_a INDEX2
 'But who has told you?'

The focusing of a constituent takes precedence, therefore, over the fluidity of transition from sign to sign. Echoes, which constitute another means of emphasizing a constituent, also take precedence⁵.

One fact which remains unexplained is the preference for placing QUI (who) in sentence-initial position as opposed to sentence-final position. Out of the ten cases of QUI in sentence-initial position, six are preceded by a resting position (hands on the knees), one is preceded by a person classifier (cf. 14), one is preceded by a INDEX2, from which there is a natural transition to QUI, and one is preceded by the sign ORGANISER (organize). In this last case, our informants believe that in order for the question to be made clear, it is indispensable to begin the question with QUI and then continue with ORGANISER (organize).

Our hypothesis is, therefore, as follows: there are three possible placements for QUI, sentence-initial, sentence-final and sentence-internal. When there is no focusing or emphasis of other elements in the sentence involved, we anticipate that QUI would be signed in sentence-initial position. This is explained by the observation that signers tend to produce an overall movement away from the body during the sentence. Occasionally, however, the sign preceding the beginning of the interrogative is closer in form (i.e. in configuration, point of articulation, etc.) to another sign of the question than it is to the sign QUI (who) itself. In these cases, we anticipate that QUI (who) would be placed sentence-finally or sentence-internally so as to preserve the overall economy of movement in the sentence.

3.4.2 Position of QUOI

Unlike the WH-sign QUI (who), the sign QUOI (what) is not signed on the body, but rather in neutral space in front of the signer. In fact, the sign QUOI (what) is variable, being signed with one or both hands, close to the body or away from it, depending on the sign preceding it. In (23) QUOI (what) is signed with the dominant hand close to the body, at neck level, as it is a continuation of PARLER (talk) (a sign in which the hand is in contact with the chin). In (24) QUOI (what) is signed with both hands in neutral space, at a distance away from the body equal to the length of the forearm.

Example 23.

_____ whq

PARLER QUOI PTÉI
 SPEAK WHAT INDEXI
 'What was I talking about?'

Example 24.

_____ whq

QUOI ÉDUCATION QUOI
 WHAT EDUCATION WHAT
 'What is education?'

The hypothesis that we formulated for QUI can also be extended to include QUOI (what). The fact that signers prefer an overall movement away from the body during the sentence explains why the sign QUOI (what) is generally in sentence-final position. Example (25) is an illustration of this tendency. The signer has both hands in a rest position at the beginning and at the end of the sentence. The sign SANTÉ (health) begins on the body and moves outward, and is followed by the two-handed sign QUOI (what).

Example 25.

_____ whq

SANTÉ QUOI
 HEALTH WHAT
 'What do you mean by health?'

We have not observed any examples of QUOI (what) in sentence-initial position, although we have found three instances of it occurring sentence-internally. One of these examples, beginning with PARLER (talk), was given in (23), the others being (26) and (27).

Example 26.

 _____ whq

PARLER QUOI SUITE

SPEAK WHAT NEXT

'What are you talking about after (that)?'

Example 27.

 _____ whq

PTÉI QUOI CODE-BASEBALL

INDEXI WHAT BASEBALL-CODE

'What do I think about baseball?'

The sentences (23) and (26) begin with *PARLER* (talk) signed in contact with the chin, the dominant hand moving only slightly away from the body to produce *QUOI* (what). In (26), the hand continues to move away to produce *SUITE* (next), whereas in (23), it comes back into contact with the body to produce *INDEXI*. This time, however, contact is made at the level of the upper body. These facts lead us to revise our hypothesis: signers have a tendency to favour a consistent flow of overall movement in a single direction. Thus, our informants judge (28) to be correct.

Example 28.

 _____ whq

PTÉI QUOI PARLER

INDEXI WHAT SPEAK

'What was I talking about?'

The same type of continuous movement can be seen in (27), where the sign *BASEBALL-CODE* finishes with the dominant hand making contact with the nose.

What is avoided in normal case is any overall zigzagging movement, however it can be found as a consequence of forcing a sign into initial position for emphasis.

3.4.3 Other interrogative signs

Further analysis of our data reveals that the hypothesis proposed to account for the position of *QUI* (who) and *QUOI* (what) also appears to be valid for the position of *OU* (where) (which generally appears in sentence-finally because it is mobile and is signed away from the body) and *POURQUOI* (why) (generally sentence-initial because it is signed on the body). As for *COMMENT* (how), it can be observed that it is most often placed in sentence-initial position, as in (29).

Example 29.

whq

COMMENT I-CONTACTER-3

HOW I-CONTACT-3

'How do I contact him?'

Nevertheless, COMMENT (how) may appear in final position, as in (30). In this example we note that the sequencing of the signs involves a minimum of articulatory change: the final location and orientation of PERTE (loss) correspond to the initial location and orientation of COMMENT (how).

Example 30.

whq

DÉFICIT DIX MILLE PERTE COMMENT

DEFICIT TEN THOUSAND LOSS HOW

'How is it that there is a deficit of ten thousand?'

To conclude, we have shown that three possible placements exist for WH-signs in LSQ. We have proposed that in a sentence involving neither a focus construction nor an echo construction, and divorced from any discourse context, any WH-sign can appear in any of the three placements. We have hypothesized that these tendencies can be explained as resulting from articulatory, and not syntactic, factors. In general, signers favour a sentence-level movement contour that is maximally economical to articulate, in which the arms show a tendency to an overall outwards or downwards movement contour. Movements in the opposite direction are not excluded however: what is by and large avoided is zigzagging back and forth over the length of the utterance. This hypothesis is compatible with the observation of Liddell and Johnson [1989] regarding contextual metatheses observed in certain signs in ASL - observations that can be extended to LSQ. For example, Liddell and Johnson observe that DEAF is normally signed with two contacts, the first on the cheek near the ear and the second on the chin, close to the mouth. This order is followed when DEAF follows FATHER, which is signed on the forehead, but the order is reversed to chin/cheek when DEAF follows MOTHER which is signed on the chin. Similar observations with regard to directionality are found in Brennan [1990] who notes that "... the overall tendency in BSL compounds is for movement away from the body rather than towards: the first sign most frequently has a head location and much less frequently a body, hand or neutral space location. The second sign most typically has a hand or neutral space location." [p.147] She cites Friedman and Battison [1973] as stating that in ASL, signs with more than one contact typically move from the head to the trunk, arm or hand, and a movement from the hand to the head is common; whereas movements from the trunk or arm to the head or hand are not found, nor

are movements from the trunk to the arm and vice versa, nor from the hand to the trunk or the arm.

Given the unexpected nature of the factors involved in determining question sign placement in LSQ, it would be interesting to see to what extent articulatory factors come into play as a determinant of sign order in general in LSQ.

Footnotes:

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1. We will henceforth use the terms "sentence-initial (final) placement" to refer to placements in minimal sentence i.e., the sentence excluding any extraposed or fronted elements.
2. We have observed that, in certain questions, the *WH*-word is mouthed and not signed, but we have restricted our analysis to *WH*-signs only.
3. According to our informants' intuitions, when something is more important, it is moved to the initial position in the sentence.
4. The echo is, in all probability, the result of copying from one position to another, since an interrogative is always grammatical with just one *WH*-sign. Based on the available data, we believe that the copy could equally apply from sentence-initial position onto sentence-final position or vice-versa.

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1. INTRODUCTION

One of the unique aspects of sign languages is the ability to use the signing space as a means of referring to participants in the discourse. In particular, the ability of pronouns and verbs to use space in order to refer to entities both present and absent is both well known and, apparently, unique to sign languages. During the past few decades it has been accepted in work on ASL that signers could 'establish an index' or a locus in the signing space and thereafter in the discourse 'established' thereby directing signs toward that locus. In this view the locus serves a referential function in that signers can subsequently point to that locus in order to refer to the entity associated with it (Liddell 1995, Klima and Bellugi 1979, Woll 1979, 1987, Lillo-Martin and Klima 1989, Miller 1990). While Liddell (1995) and Foxson, Stone, and Bellugi (1987) expand this concept by dividing the signing space into two cognitively and grammatically distinct spaces, which are realized as partially overlapping spaces ahead of the signer.

One space is topographical and allows for very detailed, highly descriptive, spatial representations. Classifier predicates, for example, are required to locate entities in topographical space while the nature of topographical relationships are evident from the placement of the entities involved. This is the second type of space, a 'locus' or a 'syntactic space', have no topographical import whatsoever. Concepts such as 'near', 'far', 'above', and 'below' are simply not relevant in syntactic space, both pronouns and indicating verbs are claimed to make use of the syntactic space.

One of the central claims of proponents of syntactic space is that after a locus is established, verbs and pronouns refer to the entity associated with that locus by being directed toward that locus. Liddell (1995) presents arguments against this view, citing evidence which shows that, contrary to these claims, indicating verbs and pronouns are not, in fact, directed toward the locus at which an index is established. Instead, they are directed heights above the locus, depending on the index used to sign. Such evidence shows that the locus serves only to represent the location of the entity, but does not represent the entity itself.

This paper extends the ideas in Liddell (1995) and further elaborates that conceptualization of how space is used in ASL by arguing that pronouns and indicating verbs both make use of topographical space and both operate according to the same set of principles.