Part One: The General Session.

# Comparative structures in Quebec Sign Language [1]

Astrid Vercaingne-Ménard
Université du Québec à Montréal

## Introduction

This paper is concerned with comparative structures in Quebec Sign Language (LSQ), a visual-gestural language used by the deaf community of Quebec. As is true for many other phenomena occurring in sign languages, the expression of comparison in LSQ is of interest for linguistic theory since comparatives are realized in syntactic structures that call upon syntactic organization similar to that of oral languages, but they also make use of the visual-gestural modality which brings into play various articulators (face, hands, body) which can act independently of each other.

Since Stokoe (1960), much work has been carried out on sign languages which applies the concepts and tools developed by linguists for the analysis of oral languages. Certain authors, such as Stokoe (1986), Perlmutter (1986), and Deuchar (1985) argue that it would be desirable that sign languages, as objects of study, should contribute in their own stead to the development of linguistic theory. Deuchar, in particular, expresses the hope that such studies will have important repercussions for our conception of the nature of language, considered by many to be essentially linear. Sign languages, which are realized in a visual-gestural modality, give reason to doubt that linearity is an essential characteristic of languages. For Deuchar, the non-linear aspect of signed languages should encourage linguists to give more importance to non-linear phenomena in oral languages, such as intonation, and to consider other types of analyses.

Grimes (1988) lists 69 sign languages, of which American Sign Language has without a doubt received the most attention from linguists. Various authors (Fischer and Gough (1978), Bellugi (1980), and Padden (1983) have brought to light a large variety of syntactic rules. Until recently, Quebec Sign Language has received little attention on the part of linguists. However, the first results of research being carried out in the Quebec Sign Language research group at UQAM show that LSQ shares formational characteristics with other languages that have been analysed to date. The visual-gestural modality in which these languages have developed has strongly influenced the form of their grammar. Being entirely visual and gestural in nature, sign languages make precise use of spatial mechanisms in their grammatical structure. Thus, referential indexing of nouns is established in different ways in space: a sign may be referenced by making it in a particular location, or by indicating a location by means of a pointing sign, eye gaze, or body shift. As well, space is used to indicate verbal agreement and anaphoric reference, a characteristic unique to a visual-gestural system.

Studies dealing with American Sign Language have shown that syntactic phenomena accounted for by mechanisms such as topicalization, relativization, and other subordinate phrase structures, are also grammaticalized in this sign language, but by other means. These syntactic phenomena are realized by means of specific facial expressions, head nods, and headshakes as an integral part of the language's grammar: non-manual behaviours are not in fact solely extralinguistic in nature. For example, Dubuisson (1991) shows that in LSQ, interrogatives are



distinguished from their corresponding affirmatives by nonmanual behaviours consisting of specific and obligatory movements performed by the head.

My interest is in studying the realization of comparative structures in a signed language such as LSQ in order to discover how much the nature of these structures is influenced by the visual-gestural modality. In French, comparatives pose the same kinds of problems as we find in subordinate constructions in general. In effect, a comparison can extend over two surface clauses, as shown in examples (1), (2), and (3).

(1) *Max a autant d'amis [que Louis en avait].*
"Max has as many friends [as Louis had]."
(2) *Max a autant d'amis [que Louis (n') a d'ennemis].*
"Max has as many friends [as Louis has enemies]."
(3) *Max est plus sportif [qu'il ne le paraît].*
"Max is more of an athlete [than he appears]."

Comparison can also be realized on the surface within a single clause:

(4) *Max a autant d'amis que Louis.*
"Max has as many friends as Louis."
(5) *Max est moins nerveux que Louis.*
"Max is less nervous than Louis."

These constructions have been the subject of numerous studies. In generative grammar, comparative structures were traditionally accounted for with three transformations: WH-movement, subdeletion, and comparative ellipsis. The first two generate complex sentences, the third generates simple sentences. We may recall the debate in the mid-70s that revolved around the status of WH-movement and subdeletion. For English syntax in particular, the movement thesis was argued for by Chomsky, whereas Bresnan argued in favor of deletion. Milner (1978), Kayne (1981), and Pinkham (1982), from a cross-linguistic perspective, took into account the differences between comparatives in English and French. More recently, Grimshaw (1987) reconsidered the problems posed by subdeletion and attempted to eliminate this rule from the grammar. As far as the transformation of comparative ellipsis is concerned, it was originally treated in terms of deletion under identity. At present, elliptic constructions are considered to constitute anaphors and analyses concentrate on the structural conditions that permit anaphora. Analyses of these structures are to be found in Haïk (1985), Larson (1987), and Larson and May (1990).

We will see in this paper that the behaviour of comparative constructions in LSQ is very different from that to be found in French.

To my knowledge, there have been no studies of comparative structures in signed languages, apart from a brief allusion in Yau (1978) to the language of a Mrs Pettikwi, an Amerindian (Cree) woman who was born deaf and lived in a hearing community, isolated from contact with any deaf communities. According to Yau, comparatives made by Mrs Pettikwi did not contain any subordinate structures. She did not use any specific comparative markers to express comparison, but adopted a strategy of juxtaposing the two elements to be compared and using antonyms, sometimes modifying the size and intensity of her

signs. Of course, this is only one isolated case and we would not expect this description to cover all of the structures that may be possible in sign languages.

A problem that faces any linguist who deals with data from an unknown language such as LSQ is how to determine what kinds of structures exist in the database. In our case, the question is, how do we determine whether a given utterance constitutes a comparative structure? Since it is precisely syntactic structures that we are attempting to discover, we must rely on a definition independent of the syntax of the language under study. For this reason, I propose a semantically-based definition of the notion "comparative construction."

> "A comparison always contains three elements: a graduated scale and two concepts. The scale represents the measure against which the concepts are contrasted. One of the two concepts represents the baseline against which the other is measured and is interpreted as being either equal or unequal."

For example, in

(6) *Jean est plus grand que Marie.*
"John is bigger than Mary."

the NP *Marie* constitutes the baseline. *Jean* is the NP that is compared, and the quantitative, *plus*, situates the relative heights of *Jean* and *Marie* on the vertical scale. We will now see how comparatives, as defined above, are realized in the syntactic constructions of LSQ.

## 1- Methodology

My data come from several different sources. In the first stage of data-gathering, I consulted the video corpus assembled by our research group. This corpus contains six hours of video recordings: six LSQ signers, profoundly deaf since birth, were filmed individually during free conversational interaction. However, as is well known in syntax, corpus-based analyses are often hampered by the lack of crucial structures. In my research, I was able to find only 14 utterances corresponding to the semantic definition of a comparative given above. In order to supplement these data to provide a sufficient base for the formulation of hypotheses, I elicited phrases from an informant. Clearly, there were risks inherent in this particular approach: since our informants are bilingual, and considering the sociolinguistic dynamics often present in interaction between hearing and deaf individuals, there existed the possibility that they might produce utterances calqued on French, their oral language. I presented my informant with a sentence written in French, then we discussed the meaning of the sentence and the various ways it could be produced in LSQ. On this basis I was able to formulate a number of hypotheses. The next step was to put together a mini video corpus designed to elicit comparative structures from our informants. Signers took part in a game in which they were to help a participant discover a particular individual's identity by comparing this person with another already known to the participant. Three deaf informants took part in this process, which provided a further 57 sentences to the corpus. After the data-gathering phase, I classified the utterances and was able to supplement or correct my original hypotheses. Afterwards, I carried out further work with a second informant and the structures

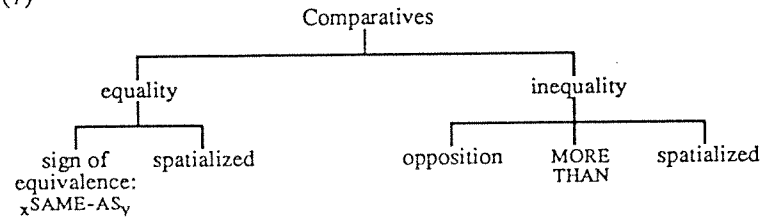


elicited at this stage appeared to agree with the classification made on the basis of the videos and certain structures already elicited from the first informant.

## 2- Classification of comparatives

A classification of the comparatives contained in the corpus is shown in (7).

(7)




## 3- Description

### 3.1- Comparisons of equality

Comparisons of equality are expressed by moving the sign of equivalence between the two elements compared as in example (8).

(8) SMILE INDEX$_3$ COLETTE $_3$SAME-AS$_{Colette}$
"X smiles as much as Colette does."

The sign of equivalence, which is executed with a handshape in which the pinky and the thumb are extended, is translated here by the gloss SAME-AS. What is notable about this sign is that by moving it between established spatial loci it is possible to link together elements bearing the same thematic relations. Thus, in French, the following sentence is ambiguous without the extra material in parentheses:

(9) *J'aime autant ton père que toi (tu l'aimes).*
"I like your father as much as you do."

In LSQ, this sentence will have the following form: ME YOU LIKE YOUR FATHER $_{me}$SAME-AS$_{you}$ and for the second sense,

(10) *J'aime autant ton père que toi (je t'aime).*
"I like your father as much as I like you."

signs. Of course, this is only one isolated case and we would not expect this description to cover all of the structures that may be possible in sign languages.

A problem that faces any linguist who deals with data from an unknown language such as LSQ is how to determine what kinds of structures exist in the database. In our case, the question is, how do we determine whether a given utterance constitutes a comparative structure? Since it is precisely syntactic structures that we are attempting to discover, we must rely on a definition independent of the syntax of the language under study. For this reason, I propose a semantically-based definition of the notion "comparative construction."

> "A comparison always contains three elements: a graduated scale and two concepts. The scale represents the measure against which the concepts are contrasted. One of the two concepts represents the baseline against which the other is measured and is interpreted as being either equal or unequal."

For example, in

(6) *Jean est plus grand que Marie.*
"John is bigger than Mary."

the NP *Marie* constitutes the baseline. *Jean* is the NP that is compared, and the quantitative, *plus,* situates the relative heights of *Jean* and *Marie* on the vertical scale. We will now see how comparatives, as defined above, are realized in the syntactic constructions of LSQ.

## 1- Methodology

My data come from several different sources. In the first stage of data-gathering, I consulted the video corpus assembled by our research group. This corpus contains six hours of video recordings: six LSQ signers, profoundly deaf since birth, were filmed individually during free conversational interaction. However, as is well known in syntax, corpus-based analyses are often hampered by the lack of crucial structures. In my research, I was able to find only 14 utterances corresponding to the semantic definition of a comparative given above. In order to supplement these data to provide a sufficient base for the formulation of hypotheses, I elicited phrases from an informant. Clearly, there were risks inherent in this particular approach: since our informants are bilingual, and considering the sociolinguistic dynamics often present in interaction between hearing and deaf individuals, there existed the possibility that they might produce utterances calqued on French, their oral language. I presented my informant with a sentence written in French, then we discussed the meaning of the sentence and the various ways it could be produced in LSQ. On this basis I was able to formulate a number of hypotheses. The next step was to put together a mini video corpus designed to elicit comparative structures from our informants. Signers took part in a game in which they were to help a participant discover a particular individual's identity by comparing this person with another already known to the participant. Three deaf informants took part in this process, which provided a further 57 sentences to the corpus. After the data-gathering phase, I classified the utterances and was able to supplement or correct my original hypotheses. Afterwards, I carried out further work with a second informant and the structures

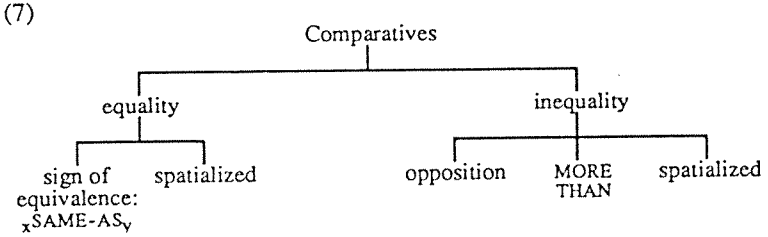


elicited at this stage appeared to agree with the classification made on the basis of the videos and certain structures already elicited from the first informant.

## 2- Classification of comparatives

A classification of the comparatives contained in the corpus is shown in (7).

(7)




## 3- Description

### 3.1- Comparisons of equality

Comparisons of equality are expressed by moving the sign of equivalence between the two elements compared as in example (8).

(8) SMILE INDEX$_3$ COLETTE $_3$SAME-AS$_{Colette}$
"X smiles as much as Colette does."

The sign of equivalence, which is executed with a handshape in which the pinky and the thumb are extended, is translated here by the gloss SAME-AS. What is notable about this sign is that by moving it between established spatial loci it is possible to link together elements bearing the same thematic relations. Thus, in French, the following sentence is ambiguous without the extra material in parentheses:

(9) *J'aime autant ton père que toi (tu l'aimes).*
"I like your father as much as you do."

In LSQ, this sentence will have the following form: ME YOU LIKE YOUR FATHER $_{me}$SAME-AS$_{you}$ and for the second sense,

(10) *J'aime autant ton père que toi (je t'aime).*
"I like your father as much as I like you."

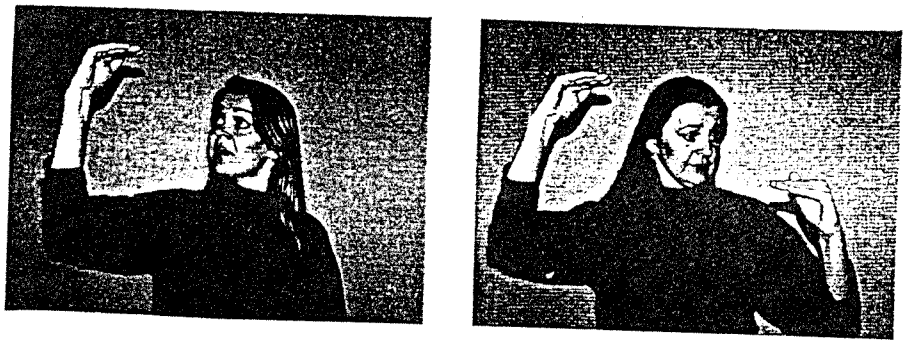
LSQ has ME YOU LIKE YOUR FATHER $_{father}$SAME-AS$_{you}$$^{2}$.

In the first case, the sign of equivalence marks the fact that I and YOU are the *actors*, and in the second case, that YOUR FATHER and YOU are the *beneficiaries* of the verb LIKE. Thus such comparisons in LSQ are not ambiguous in the way that they are in French.

3.1.1 - Spatialized comparisons

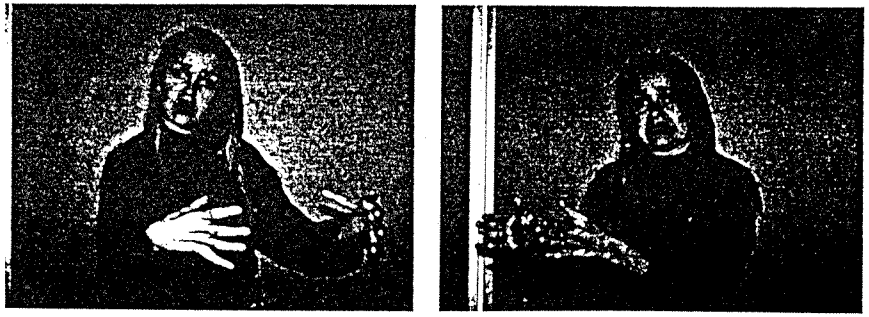
In this case, the gestural mode of communication permits the expression of equality or inequality without recourse to the syntactic structures necessary in oral languages. Such is the case for comparisons involving signs such as TALL, SHORT, LARGE, THIN, which are mapped iconically onto the signing space and require only minimal syntactic structure. For example, to express the statement "Mary is taller than Louise," the two hands express simultaneously the relative heights of Mary and Louise, as in example (11).

(11a) Mary is taller than Louise.





(11b) Mary is bigger than Louise.



3.2- Comparisons of inequality

3.2.1- Opposition: *(X (is) Y, Z less)*

What characterizes this category is that the relation between the two elements to be compared is marked on the graduated scale by one or two signs of quantity. In this category we find utterances such as the following:

(12) INDEX$_1$ STUDY STRONG INDEX$_2$ LESS.
(13) INDEX$_2$ MORE BIG INDEX$_3$ LESS.
(14) MORE INDEX$_1$ ASL, INDEX$_2$ LESS.
(15) *X* MEET A-LOT-OF PEOPLE, *Y* MEET MORE-OR-LESS PEOPLE.

3.2.2- Opposition: *(X (is) Y, Z not)*

These structures can be assimilated to those described by Yau. They are composed of two independent clauses, the gradation between the two being the subject of inference.

(16) INDEX$_1$ HAIR THIN INDEX$_2$ LOTS-OF HAIR.
(17) INDEX$_1$ BIG INDEX$_2$ NOT.

These examples are in fact juxtaposed constructions. To assure ourselves that this is the case, we can make use of Padden's diagnostic tests establishing the distinction between subordinate and juxtaposed clauses. Padden (1983) states that it is possible to find subordinate clauses in ASL, even if there are no surface indications of their existence. Among other diagnostics, she shows that a pronominal copy *i* of the subject of the root clause can appear at the end of the embedded clause. Thus, example (18), from ASL, contains an embedded clause since the sentence is grammatical when the pronominal subject is repeated phrase-finally.

(18) $_1$FORCE$_i$ MAN $_i$GIVE$_j$ BOY $_j$POSS BOOK ($_1$INDEX).
"I forced the man to give the boy his book, (I did)."

However, this type of repetition is judged ungrammatical in the presence of a conjoined structure. This can be seen in example (19):

(19) * ¡GIVE$_1$ MONEY ¡GIVE$_1$ FLOWER (¡INDEX).
* "He gave me money, but she gave me flowers, (he did)."

Now, in the comparative constructions we have seen, it is impossible to place a copy of the subject pronoun in utterance-final position, as shown in the following example:

(20) * BEFORE INDEX$_i$ FAT, INDEX$_j$ THIN (INDEX$_i$).
"Before, he was fat; she was thin, (he was)."

Another argument that clearly demonstrates that these comparatives are in effect juxtaposed structures, is based on the fact that is always possible to insert BUT between the two terms of the comparison, as in (21) and (22).

(21) JOHANNE VERY SPORT, BUT SEEM NOT.
(22) INDEX$_1$ STUDY STRONG BUT INDEX$_2$ LESS.

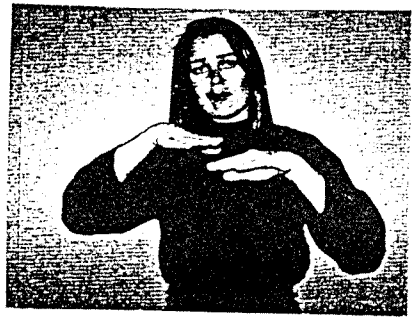
Thus, it seems that these comparatives are indeed juxtaposed structures and not subordinate clauses.

3.2.3- *More than.*

The sequence glossed as MORE THAN is executed by raising the closed dominant hand, thumb extended upward, then with both hands in a flat handshape and oriented palm downward, striking the fingertips of the non-dominant hand in a downward motion to produce the sign THAN. This is illustrated in (23).

(23) ME MORE THAN YOU.





What is striking about this construction, is the fact that it contains a comparative sign QUE. In French, The morpheme *que* introduces an embedded clause, not only in comparatives but in a number of other constructions. Now, one of the problems encountered by linguists in the analysis of sign languages is the existence or nonexistence of embedded structures. Certain authors such as Thompson (1977) state that ASL is composed of sequences of independent sentences or coordinated clauses. Liddell (1978), on the other hand, provides an analysis of a restrictive relative in ASL where he shows that this structure is internally headed and is marked by a non-manual behaviour consisting of raised eyebrows, a backward tilt of the head and raising of the muscles of the cheek and upper lip. These non-manual signals are specific to this type of construction: they are never produced when a signer is asked to produce the two clauses separately.

The existence of embedded clauses in LSQ has not yet been examined. We may note, however, that no manual sign has yet been found which might serve to introduce an embedded clause. We could ask the question whether the comparative QUE introduces an embedded clause. It goes without saying that we should not attribute to a sign in LSQ the same properties as a word in French on the basis of the gloss we have assigned to the sign. Nevertheless, the structures containing the sequence MORE THAN are different from the others we have dealt with so far. In effect, in a comparative containing MORE THAN, the second part of the comparison cannot contain the signs LESS or MORE-OR-LESS, unlike utterances containing juxtaposed structures. In juxtaposed structures, we find utterances such as the following, where the *more* and *less* elements are both present.

(24) INDEX$_3$ MORE BIG LESS INDEX$_4$.

But in comparatives containing MORE THAN, it is ungrammatical to use both quantifying elements. This is illustrated in (25).

(25) * INDEX$_3$ BIG MORE THAN *X* LESS
"He is bigger than X is less."

We can conclude from this that the sign glossed as QUE introduces a correlation into the utterance, that is to say, a relationship of dependency between the two elements. If we say of one of the elements that it is *more,* then the other is of necessity *less* and it is hence ungrammatical to specify it, as is done in example (24) for example, where the signer is free to use MORE in the first term of the comparison and LESS in the second.

From the above discussion, we can see that constructions containing PLUS QUE (MORE THAN) are clearly different from other constructions we have dealt with until now. But do we have sufficient evidence for saying that they correspond to embedded clauses? This is far from clear in the data I have collected. In fact, the second term of the comparison is almost always made up of a single element used on its own. None of the utterances in my corpus contains any verbal element that could justify th claim that the second term of the comparison is in fact a clause. In order to test whether this is in fact the case, I attempted to elicit comparatives that extend over two clauses from my informants. The results are as follows: in the first case, the verb is the same in both clauses and only the tense changes. The French sentence is:

(26) *Il mange plus qu'il mangeait.*
"He eats more than he used to (eat)."

The LSQ equivalent is:

(27) INDEX$_3$ EAT MORE THAN PAST.

In the second case, the verbs are different. The French sentence is:

(28) *Johanne est plus sportive qu'elle ne le paraît.*
"Johanne is more athletic than she seems."

In this case the two informants responded differently:

(29) 1: JOHANNE SEEM NOT SPORT BUT TRUE VERY SPORT.
"Johanne doesn't seem very athletic but in reality she is very athletic."
2: JOHANNE VERY SPORT, SEEM NOT.
"Johanne is very athletic but it doesn't look that way."

It appears that in this case, informants use a coordinate, not a subordinate, construction. We can therefore conclude that the element QUE introduces a correlation between the two terms of the comparison, but it is not clear that it introduces a subordinate clause.



## Conclusion

Perlmutter (1986) emphasizes the interest of the study of sign languages for linguistics. It is likely that the distinction between sign language and spoken language is a parameter of variation that children determine at a very early stage. If signed languages are qualitatively very different from oral languages, this may serve to indicate that phenomena should not be attributed with overdue haste to an innate language faculty. If on the contrary, signed languages are similar to oral languages in a manner that transcends differences of modality, the innatist hypothesis will be reinforced. It is conceivable that in a sign language, the expression of comparison could either be impossible, or that the range of realities it can represent might be restricted compared to oral languages. One could similarly suppose that the relation between the elements being compared could simply not be specified by linguistic means, being interpreted simply on the basis of immediate context and the skill of a signer in expressing a given idea. We have seen that, at least in LSQ, comparison is expressed by the use of specific syntactic structures. In comparatives of inequality, we have seen that there are utterances that contain the elements PLUS QUE, in which the element QUE introduces a dependency relation between the two terms of the comparison. These structures can be likened to those occurring in French, hence to the comparatives of certain oral languages. The two other types of comparatives of inequality are composed of two independent clauses that are connected by a relation of inference from which the gradation between the two elements being compared can be deduced. This type of structure is not restricted to sign languages. Léon Stassen (1987) in a study of the various manners in which comparison is expressed across 110 oral languages, lists some twenty languages which express comparison by means of coordinate structures such as those that are found in LSQ. In the two other categories, that is comparatives of inequality and those which are expressed by use of space, it appears that these structures behave in accordance with their own independent mechanisms, determined by a mode of communication that allows for certain means of expressing meanings unavailable in oral languages. In comparatives of equality, the sign of equivalence can be directed in space between the two terms of a comparison, and serves to link elements that are marked with the same thematic role. As for those utterances in which the relation is mapped directly into space, it is evident that the gestural mode of communication permits the expression of meanings without recourse to the syntactic structures necessary in oral languages.

## Notes

1-This research was supported by a grant from the Social Sciences and Humanities Research Council of Canada. I am grateful to Colette Dubuisson for helpful comments. I have also benefited from discussions with Chistopher Miller and from his assistance in the translation of this paper. I also want to thank my informants: Johanne Boulanger, Jules Desrosiers and Linda Lelièvre.

2-Johanne Boulanger appears in the pictures.

## References


BELLUGI, U. 1980. "The Structuring of Language : Clues from the Similarities between Signed and Spoken Languages." In U. Bellugi and M. Studdert-Kennedy (Eds.). *Signed and Spoken Languages : Biological Constraints on Linguistic Form.* Weinheim and Deerfield Beach, Fla. : Verlag Chemie, pp. 115-140.

BRESNAN, J. 1975. "Comparative Deletion and Constraints on Transformations." *Linguistic Analysis.* Vol. 1.

CHOMSKY, N. 1977. "On Wh-Movement." In P.W. Culicover, T. Wasow, and A. Akmajian (Eds.). *Formal Syntax.* New York : Academic Press.

DEUCHAR, M. 1985. "Implications of Sign Language Research for Linguistic Theory." In W. Stokoe and V. Volterra, *Sign Language Research'83.* Silver Spring, MD : Linstok Press, pp. 239-246.

DUBUISSON, C. et al. 1991. "Les mouvements de tête dans les interrogatives en langue des signes québécoise." *Revue québécoise de linguistique.* Vol. 3, No. 2.

FISCHER, S., and GOUGH. 1978. "Verbs in American Sign Language." *Sign Language Studies* . Vol. 18, pp.17-48.

GRIMES, B.F. 1988. *Ethnologue - Languages of the World.* Dallas, Texas : Summer Institute of Linguistics.

GRIMSHAW, J. 1987. "Subdeletion." *Linguistic Inquiry.* Vol. 18, No. 4.

HAÏK, I. 1985. *The Syntax of Operators.* Doctoral Dissertation, M.I.T.

KAYNE, R. 1981. "On Certain Differences between French and English." *Linguistic Inquiry.* Vol. 12, No 13.

LARSON, R.K. 1987. "Missing Preposition" and the Analysis of English Free Relative Clauses." *Linguistic Inquiry.* Vol. 18, No.2.

LARSON, R.K., and MAY R. 1990. "Antecedent Containment or Vacuous Movement : Reply to Baltin." *Linguistic Inquiry.* Vol. 21, No. 1.

LIDDELL, S. 1978. "An Introduction to Relative Clauses in ASL." In P. Siple (Ed.). *Understanding Language through Sign Language Research..* New York : Academic Press.

MILNER, J.C. 1978. "Cyclicité successive, comparatives et cross-over en français." *Linguistic Inquiry.* Vol. 9, pp. 673-693.

PADDEN, C. 1983. *Interaction of Morphology and Syntax in American Sign Language.* Doctoral Dissertation, University of California, San Diego.

PINKHAM, E.J. 1982. *The Formation of Comparative Clauses in French and English.* Doctoral Dissertation, distributed by IULC.

PERLMUTTER, D.M. 1986. "Topic... comment : No Nearer to the Soul." In *Natural Language and Linguistic Theory.* Vol. 4, No. 4, pp. 515-523.

STASSEN, L. 1985. *Comparison and Universal Grammar.* New York : Basil Blackwell Inc.

STOKOE, W. 1978. *Sign Language Structure.* Revised Edition. Silver Spring, MD : Linstok Press.

THOMPSON, H. 1977. "The Lack of Subordination in American Sign Language." In *On the other hand : New Perspectives on American Sign Language.* L. Friedman (Ed.). New York : Academic Press.





YAU, S. C. 1982. "Création d'anthroponymes gestuels par une sourde amérindienne isolée." *Amérindia : Revue d'ethnolinguistique amérindienne* Vol. 77, pp. 7-21.