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# 30 Quebec Sign Language

## 1 Basic facts about the language

**Language name:** Langue des signes québécoise (LSQ) is the name of the language used by the signing community and by researchers.

**Location:** The Canadian Association of the Deaf recognizes both LSQ and American Sign Language as the only official languages of Deaf Canadians. Nevertheless, as pointed out by Parisot and Rinfret (2012), three other Sign Languages make up the

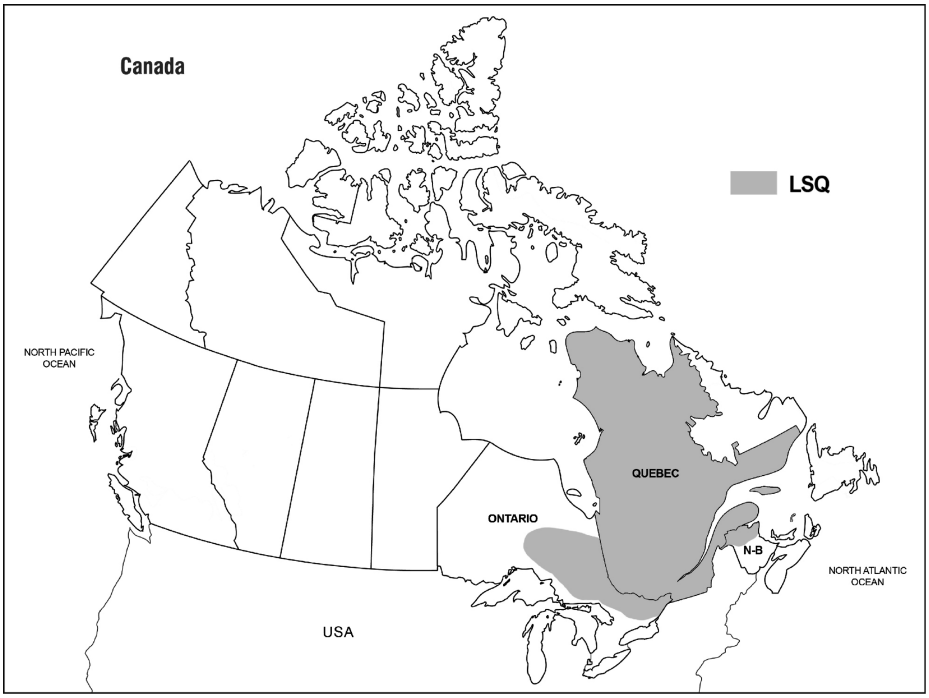


**Fig. 1:** Map of Canada.

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Canadian linguistic landscape: the Inuit Sign Language (Schuit, Baker, and Pfau 2011), the Plain Indians Sign Language (Davis 2010) and the Maritimes Sign Language (Yoel 2009), all of which are dying or endangered and expected to disappear with the last generation of users.

LSQ is used in the eastern Canadian provinces where there is a mainly French speaking population, especially in the province of Quebec and in the east of Ontario, New Brunswick and Nova Scotia.

**Related languages:** American Sign Language (ASL) and Langue des signes française (French Sign Language, LSF).

**Number of signers:** The estimated number of sign language users in Canada is extremely variable. For example, the Canadian Association of the Deaf (CAD) postulates that there are 300,000 culturally and linguistically Deaf people using a sign language as their reference language. Alongside this estimation based on the US ratio, the 2006 Canadian Census (Statistics Canada 2008) counted 35,370 users of a "gestural language" in Canada, including ASL, LSQ and other gestural forms of communication (home signs, signed codes, etc.). Regarding LSQ, Padden (2010) estimates the number of signers between 5000 and 6000, mostly located in francophone Canadian regions, and mainly in Quebec.

## 2 Organizations for the Deaf

The Canadian Association of the Deaf (CAD) is a national organization representing approximately 300,000 deaf individuals in Canada. The languages used by Canadian deaf persons are ASL, LSQ, English and French. In the Province of Quebec (which has a French-speaking majority), the *Société Culturelle Québécoise des Sourds* (SCQS) is a provincial association whose role is to preserve, promote and develop the cultural and linguistic interests of Deaf people in Quebec as well as to record, protect and promote LSQ.

## 3 Origin and history

Even though ASL and LSF have largely influenced LSQ, there is no information on signs used by Deaf people before 1831 (Dubuisson and Nadeau 1993). The first teacher to open a school for the deaf in Quebec, Ronald MacDonald, learned sign language in the United States with Laurent Clerc (Miller 1997). This first school, which rapidly closed due to a lack of funds (1831–1834), was followed by another that opened in Saint-Hyacinthe in 1836 and relocated to Montreal a few years later (1848). The signs used in these first schools were derived from the ASL of the time.

A little later, two deaf Frenchmen, Jean-Marie-Joseph Young and Auguste Crog, taught at the boys' and girls' institutes. In 1851, a school for girls, the *Institution des Sourdes-Muettes*, was founded in Montreal by sister Albine Gadbois, who had studied ASL in the United States. All of these teachers, who were fully versed in either ASL or LSF, greatly influenced the sign language of that time and significantly increased the LSQ lexicon. The above-mentioned institutions were the only Canadian ones to serve the French Catholic deaf populations, and students from all over Canada would attend them (Perreault 1996). Sign language was used in the schoolyard, but it was taught exclusively to students showing an inability to lips reading. These students were called the *manual group*. This label would remain in use until the 1960's, when the clergy withdrew from education administration and was replaced by the state. This went along with the integration of deaf students into the regular school system.

In the late 1970's, a McGill University researcher realized that the sign language used in the French community differed from the one used in the English community (Mayberry 1978). Raymond Dewar, a politically engaged Deaf person and great advocate for the Deaf cause, coined the term "langue des signes québécois" in the 1980's (the language had until then been called "langue des signes canadiens français" [French-Canadian sign language]) (Lachance 2002). With the work of Dubuisson conducted with the *Groupe de recherche sur la LSQ et le français sourd* (Research Group on LSQ and Deaf French), which was created at *Université du Québec à Montréal* (UQAM) in 1988, LSQ became a subject of research in the field of linguistics. To date, this group has published two volumes of descriptive grammar, many scientific papers and some 40 Web files on LSQ grammar.

# 4 Bilingualism and language contact

## 4.1 Language contact

The geographical and cultural proximity of the United States is largely responsible for the influence of ASL on LSQ today. Moreover, the bilingual context of the country, namely Quebec, New Brunswick and East of Ontario, where LSQ and ASL are the two languages used by the Deaf population, facilitate language contact.

In Quebec, LSQ is constantly in contact with French, the spoken language of Quebec, and also with ASL, which is used in Montreal and everywhere else in North America. Borrowings from French, a result of language contact, take different forms, such as mouthing, spelling and initialization. Mouthing, the total or partial silent reproduction of spoken language lip movement, is the most frequent form of borrowing in LSQ and involves verbs, adjectives and nouns. Mouthing plays a role in disambiguation and sign clarification, as well as term formation, and is sometimes used without manual signs. Spelling, the representation of writ-

ten language words through a manual alphabet, is not as important as mouthing in LSQ and is mostly used for technical or specialized terms (Dubuisson et al. 1996). Finally, initialization, the sign formation process by which a handshape matches the first letter of a French word with the same meaning, is also used in LSQ. Many initialized signs (Figure 2 and 3) share a lexical space with new non-initialized signs (e.g., ASSOCIATION and FAMILY) following a strong reaction from Quebec signers against initialization (Machabée and Dubuisson 1995).

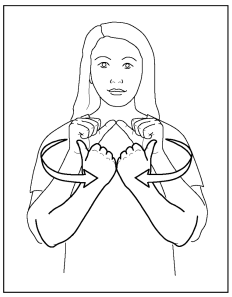

**Fig. 2:** ASSOCIATION.

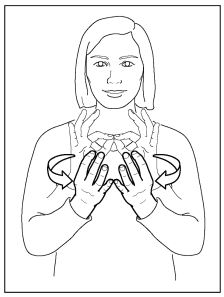

**Fig. 3:** FAMILY.[1]

Related to the origin of language, Dubuisson et al. (1996) report that many LSQ signs appear in Lambert's LSF dictionary (1865). Interrogative signs (e.g., HOW, WHY) and the sign for WORK are deemed to be borrowed from LSF (Miller 2001). Furthermore, LSQ has borrowed the manual alphabet and number system from ASL as well as many lexical items such as signs relating to the family (MOTHER, FATHER,[2] SISTER, BROTHER) and time (MONTH, WEEK), as well as the signs YES and NO (Miller 2001). Other signs originate in British Sign Language (used in the Maritimes), such as FIGHT and COLOR. Nowadays, recent borrowings from ASL are common, particularly in the Montreal area (for example, the sign ALL[3] have been integrated into LSQ). With participation in international conferences, International Sign Language (ISL) also has an influence on LSQ, mostly for toponyms. Thus the international signs for CHINA and JAPAN are slowly becoming part of LSQ, particularly among the younger generation.

**1** The sign illustrations come from the image bank of the Groupe de recherche sur la LSQ (2003).

**2** However, Delaporte (2006) maintains that the signs FATHER and MOTHER would have come from the old French signs MISTER and MADAM. The latter shows a strong resemblance to the Italian sign SIGNORA (Delaporte 2006: 150).

**3** The Canadian Dictionary of ASL, ALL (sign#2) p. 15.

## 4.2 Education

From 1875 to 1970, Catholic education was controlled by the Clergy, and the education of deaf children was given by the Clerics of St. Viator (to boys) and the Sisters of Providence (to girls). Children six to nine years of age had to leave their families from everywhere in Canada to live in one of the boarding schools located in the two large communities of Montreal and Québec City. In 1970, the government began the deinstitutionalization of educational institutions, and the school model would mainly become a mainstream one.[4]

The province of Quebec is divided in 17 administrative regions covering its vast territory of 1,667,441 km$^2$. Note that according to the *Institut de la statistique du Québec* (ISQ), the population in 2007 was 7,700,807. Even though this population is mostly distributed in the south, the vastness of the province creates difficulties in accessing special education services in all the regions.

There are now three types of teaching environments in Quebec: regular classes (where the child is integrated with or without an interpreter), special classes in regular schools, and special schools. Officially, the model acknowledged by the *Ministère de l'Éducation* for special classes or schools is total communication. However, a bilingual-bimodal educational approach, in which LSQ is the language of teaching and where LSQ is taught as a subject of learning, was adopted for the Montreal school board in 2004, after being piloted for six years (Vercaingne-Ménard et al. 2004). Thus both written French and LSQ are taught and evaluated. An evaluation of the approach during the first six years has demonstrated a correlation between the understanding of certain concepts of LSQ structure and written French (Dubuisson, Parisot, and Vercaingne-Ménard 2008).

Deaf people in Quebec who use LSQ have only been able to access higher education through interpretation services since the 1980's, where the policy on social inclusion *À part ... égale* (OPHQ 1984) provides interpretation services for all levels of education. At higher education levels, the specific needs of deaf students also include note takers and French writing tutors.

## 4.3 Standardization

The *Société culturelle québécoise des sourds* (SCQS) is mandated by the community to preserve, protect and promote LSQ within the Deaf community in Quebec and works actively on the development of an LSQ dictionary. Standardization is a growing concern in the Deaf community and the SCQS supervises work on the dictionary with the involvement of representatives from the different regions and organizations in the Deaf community. This dictionary will be comprised of signs from the

4 Unless parents choose a different model or if oral integration in school failed.

community, including regional variants. Apart from this community work, there have been several individual and group initiatives since the 1980's, such as the dictionary of signs by Bourcier and Roy (1985),[5] the lexical lists of the *Coalition Sida des Sourds* du Québec (1998, 2007), and the RESO dictionary[6] of family-related signs (2005). Moreover, some sign lists are available on the Web, for example, on the site of Quebec Deaf Foundation (http://www.courslsq.net/ewac/lsq/dictionary.php) and on the literacy site *Français en mains* (francaisenmains.uqam.ca).

## 4.4 Men's and women's varieties

For a long period of time, boys and girls received their education in different institutions (colleges for boys and convents for girls). There were lexical differences between the two institutions for historical reasons (girls were schooled by teachers who learned ASL and boys by teachers who learned LSF). Also, many signs executed at the chest level were localized elsewhere by the nuns, who considered the original signs to be too sensual (e.g., BUT, a unimanual sign produced on the chest, became BUT-2, a bimanual sign produced in the neutral space). These signs are now considered synonyms in the language lexicon.

## 4.5 Hand alphabet

LSQ uses the same digital alphabet used in ASL. LSQ also has the same number system as ASL, which is a one-hand system where the number one is located on the index.

## 4.6 Mouth-hand system

In Quebec, the most popular mouth-hand system is called *Langue parlé completé* (LPC), which is a French system like Cued Speech is for English. It uses eight handshapes and five places of articulation to express the phonetic units of spoken French.

**5** This dictionary contains 1,700 signs and was widely used in teaching LSQ as a second language to hearing students. It is no longer in print.

**6** This specialized dictionary of the parent/child communication lexicon contains 1,900 signs and is now in its fourth edition.

# 5 The structure of signs

Following the work of Stokoe (1960) on the description of ASL's minimal structural units, it has been suggested that LSQ has a phonological structure just as natural spoken languages do (Dubuisson and Nadeau 1993). This description shows that signs in LSQ can be broken down into non-meaning-bearing units.

In this section we present the four main parameters of the LSQ sign structure: handshape, place of articulation, movement and hand orientation. Each of these parameters forms what we call a phoneme inventory. From the point of view of articulation, these elements constitute the basis for the materialization of the language's signs. All LSQ manual signs require at least one handshape, one movement, one place of articulation and one orientation. Cognitively speaking, each of these elements helps make a contrast between two meanings (see examples below) and all play a part in the lexical recognition of signs (Emmorey 2002).

## 5.1 Handshape

Handshape is the shape taken by the hand during sign articulation. This shape is defined by three criteria: a group of selected fingers, their position (aperture in relation to the palm, tension, spreading of fingers in relation to one another), and the position of the thumb vs. other fingers. For example, handshape /$1^{S}$/ (Figure 4) indicates that only the index is selected and that it is in complete extension, while the other fingers are in a closed position. The thumb is in a flexed position, bent over the other fingers ($^{S}$ symbol).

**Fig. 4:** Handshape /$1^{S}$/.

LSQ reports 116 handshapes (Dubuisson et al. 1999). The handshape can be the only element allowing the distinction of lexical units in a minimal pair, as shown in Figures 4 and 5 representing respectively the signs for FEAR and POLICEMAN. All the parameters of these two signs are identical with the exception of the handshape (/$1^{S}$/ for the former and /$B^{\ddot{}C}$/[7] for the latter), which makes it possible to differentiate between the two.

7 In this handshape, all fingers are selected and in a curved position, and the thumb is in extension towards the front.

**Fig. 5:** FEAR.

**Fig. 6:** POLICEMAN.

## 5.2 Place of articulation

The place of articulation of a sign has a phonological value because, while it is not meaning-bearing, it helps distinguish two meaning-bearing lexical units, as shown in Figure 6 and 7, where the signs for FATHER and MOTHER are produced using the same parameters with the exception of the place of articulation (at the forehead for the former, and at the chin level for the latter).

**Fig. 7:** FATHER.

**Fig. 8:** MOTHER.

The three main areas of articulation are the signer's body, the space in front of the signer's body, and the fingerspelling area at shoulder height in front of the signer. A sign may have more than one place of articulation, as for DEAF (ear and chin) and LEARN (neutral space and forehead).

Also, a sign can have more than one handshape. Unlike the signs FEAR and POLICEMAN shown previously, the signs for HEARING and DUCK are considered having two hand shapes (open and close).

A sign is said to be body-anchored if its place of articulation cannot be moved in space. In contrast, a sign is not body-anchored if it can be moved in space, i.e. the sign can be produced directly on a location of the space.

**Fig. 9:** DEAF.

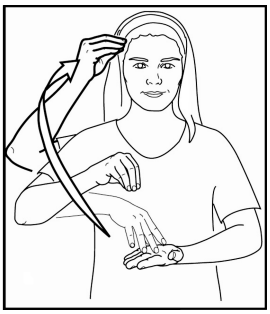

**Fig. 10:** LEARN.

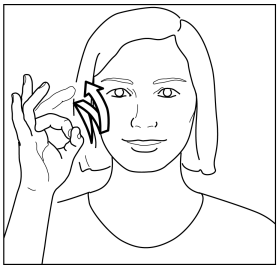

**Fig. 11:** HEARING.

**Fig. 12:** DUCK.

## 5.3 Movement

Movement is the dynamic phonological element. It is the temporal link between states represented by shapes (handshapes) and positions (place of articulation and orientation) of the hand at the time of articulation of signs on the body and in space. It is described according to three characteristics: geometrical form, articulatory aspect and temporal aspect (Miller 1997).

At the geometrical level, the movement represents the path followed by hands in space (straight line, arc, circle, ellipse or a combination of these different outlines), based on planes on which the shape is articulated (horizontal, vertical and transversal). At the articulatory level, movement is analysed according to transitions between different states of articulators, for example, going from a closed handshape to an open handshape, or going from one place of articulation to another. The movement's temporal feature corresponds to the length and repetition of the movement. Signs requiring proximal articulations (shoulders, elbows) are generally longer to produce than signs requiring distal articulations (wrists, phalanges). The following examples show the significance of considering all three descriptive features of movement (geometrical, articulatory and temporal) with the comparison of the signs MEASURE (Figure 13) and STAY (Figure 14). These two signs

**Fig. 13:** MEASURE.

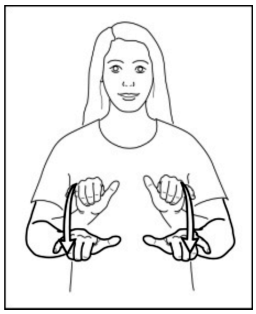

**Fig. 14:** STAY.

have the same handshape (/I'/) and the same place of articulation (neutral space). Only the movement makes the distinction possible.

At the geometrical level, the shape of the movement for the sign MESURE is a straight line produced on the horizontal plane. The trajectory of the sign STAY follows an arc in the transversal plane. At the articulatory level, the movement of the sign MEASURE can be described as an internal rotation of the shoulder. From the same point of view, the sign STAY is composed by an extension of the forearm from the elbow. Finally, at the temporal level, while the movement of the sign MEASURE is generated from a major articulator (the shoulder), it is oscillating and short, the movement for the sign STAY is long.

## 5.4 Orientation

Like for movement, orientation can be described from different points of view: internal and external. From an internal point of view, the orientation of the hand is described according to the different positions of the forearm (supination, pronation, neutral) and the hand (radial or ulnar inclination, flexion, extension, neutral position). From the external point of view, this structural parameter is described according to the orientation of the various parts of the hand, such as the palm (perpendicular projection of the palm) and the bones (projection of a parallel on the bones of the back of the hand). Orientation enables us to distinguish between the signs NEED-TO and TAX, shown in Figures 15 and 16.

The sign NEED-TO is produced by a pronation position of the forearm as the hand moves from an extension to a flexion position (internal point of view). The palm is oriented towards the ground and the bones upwards and forward (external point of view). As for the sign TAX, it is performed with a neutral position of the forearm as the hand moves from a radial to an ulnar inclination (internal point of view). The palm is oriented to the left and the bones are oriented upwards, then towards the front (external point of view).

**Fig. 15:** NEED-TO.

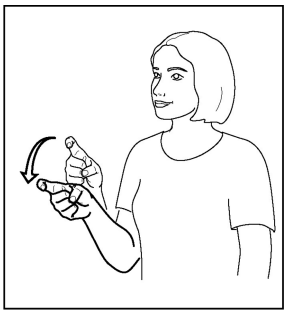

**Fig. 16:** TAX.

## 5.5 Phonological assimilation phenomena

Each of the above-mentioned phonological elements can be assimilated in a lexical or morphosyntactic context if the phonological environment of the preceding or following items shares common characteristics. For LSQ, cases of phonological assimilation in a lexical context have been documented in the evolution of spelling borrowings (Dubuisson et al. 1999). The sign for JULY has been borrowed from the written language of the majority, i.e. *juillet*. Its original form (J-U-I-L-L-E-T) is uneconomical and manipulation is not easy in the morphosyntactic frame of LSQ. The lexicalized form (J-L) has evolved by keeping the common characteristics of the handshapes involving the extension of thumb and index.

In a morphosyntactic context, phonological assimilation is productive in LSQ and has been described extensively. Apart from the cases of assimilation by derivation in signs involving quantities or negation (Dubuisson et al. 1996), studies on verb agreement have demonstrated that the pointing sign following the verb can have a weak form which is materialized by a regressive assimilation of the verb movement, orientation and/or handshape (Parisot 2003). Figure 17 shows a case of

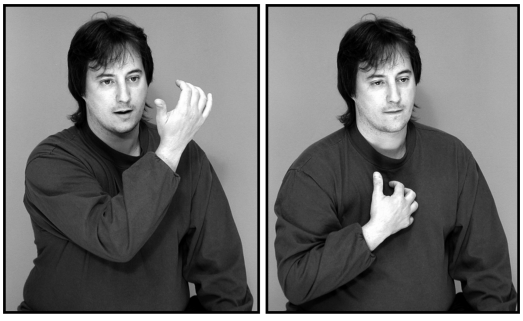

**Fig. 17:** DREAM INDEX1.
'I dream'.

assimilation of the handshape for the verb DREAM in the postverbal pointing sign. While the canonical form of first person pronouns is performed by the extended index oriented towards the signer, it can be assimilated in context to the form of the preceding verb.

In addition, when there is a series of two pronouns in LSQ, the orientation and movement of the first pronoun can be assimilated to the second one. Example 1[8] contains a series of two weak postverbal pronouns. The orientation and movement direction of the first pronoun are the same as the second one. We can still treat this sequence like a series of two pronouns because of their different locations in space, respectively on the spatial locus of the agent (the principal) and the patient (the student).

(1) STUDENT(a) INDEX3(ax) PRINCIPAL(b) 3b-LIKE-3a(Ty)
**INDEX3**(by)(Ty) **INDEX3**(ax)(Ty)[9]
'The principal likes the student.'

# 6 Basic morphology and lexicon

## 6.1 Classifiers

LSQ has classifier morphemes, which are generally represented by handshapes. These morphemes have a meaning indicating a typical or noticeable characteristic of the entity they refer to, which is associated with a noun in the speech. The classified noun generally appears before the classifier, as shown in Example 2. Classifiers are used in the formation of classifier verbs representing a movement, action (or series of actions), the localisation of a referent, feature, or characteristic of a referent.

(2) Dominant hand BRIDGE(byz)
2hands HIGHWAY(a)
Non-dominant hand ----------
Dominant hand 3c-CL:/V$^{s}$/:CROSS(y-z)
2hands BICYCLE(c)
Non-dominant hand ----------
'The bicycle crosses the bridge over the highway.'

**8** All the LSQ examples presented in this paper can be found in the DVD appendix, and come from the corpora listed in the references (DATA SOURCES).

**9** The authors have prepared a simplified adaptation of the Parisot's transcription protocol (2003). For the purpose of this chapter, we will only use the markers bearing semantic (a, b, c) and spatial (x, y, z) information, as well as codes indicating the direction of the eye gaze towards a point of

In Example 2, the noun BICYCLE is produced first and is followed by the verb CROSS that contains the vehicle classifier used to refer to the vehicle's entity category.

A first attempt to describe LSQ classifiers (Dubuisson et al. 1999) suggested four categories: semantic, handling, size and shape, and instrumental. The current state of knowledge on LSQ leads us to propose a different typology with the following categories: entities, handling and size and shape classifiers (following the work of Schembri 2003; Voghel, forthcoming). The verbs with which they can appear have different syntactic and semantic characteristics.

Entity classifiers are the most abstract in terms of object representation. The entity classifier represents the global entity. They include the following classes: *long, thin entity* (Figure 18) (an upright person, a cigarette, a pencil, etc.), *wheeled vehicle* (Figure 19) (a car, a bus, a train or a bicycle, as in Example 2), *surface* (Figure 20), *two long thin entities* (Figure 21) (used to describe two upright people or long entities, specific leg movements, if the fingers are pointing downwards, or a person lying down, if the classifier is placed horizontally, etc.). Entity classifiers are found in intransitive verbs and they express a property of a noun, which is the external argument of the verb (the subject), as in Example 2.

With handling classifiers, the handshape represents the shape of the hand when manipulating an object. Figures 22 and 23 respectively show a handling classifier used to illustrate the manipulation of two objects, a book in the first one and a key in the second one. Handling classifiers are found in transitive verbs and they express a property of a noun, which is the internal argument of the verb (the object). Example 3 contains two handling classifiers: the first one refers to the opening of a refrigerator door through the manipulation of its handle and the second

**Fig. 18:** CL:/$1^{s}$/.

**Fig. 19:** CL:/V'/.

**Fig. 20:** CL:/B'/

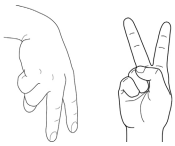

**Fig. 21:** CL:/$V^{s}$/.

**Fig. 22:** CL:/$B^{c}$/

**Fig. 23:** CL:/T''/

**Fig. 24:** CL:/$A^{s}$/

**Fig. 25:** CL:/$B^{¨c}$/.

space (R) and a lateral inclination of the torso (T). A dash between spatial markers indicates a movement between loci. The numbers 1, 2 and 3 indicate the grammatical person.

one to the manipulation of a jar of milk. The two classifiers are illustrated in Figures 24 and 25.

(3) REFRIGERATOR(ax) 1-CL:/A$^{s}$/:OPEN(a)(x-y) MILK(b)
1-CL:/B$^{\ddot{}c}$/TAKE(b)(x-1)
'I open the refrigerator and I take the jar of milk.'

Size and shape classifiers are built around strictly formal perceptive properties of objects. With these classifiers, the shape of the hand represents a characteristic of the shape and contour of the entity with which the noun is associated, and the movement represents its size or width. Size and shape classifiers are found in intransitive verbs and they classify the external argument of the verb (the subject). Their main function is to describe physical properties of objects and locate them within space, as in Example 4, in which the movement of the dominant hand traces the contour of the pile.

(4) CLOTHES(a) 3a-CL:/B'/:ROUND-PILE(aX)
'The clothes are (there) in a pile.'

Classifiers are also used to form many nouns of the established LSQ lexicon. For example, the signs GLASS and SCISSORS are respectively the result of a handling classifier and an entity classifier.

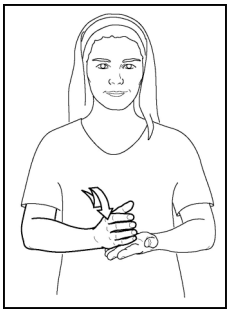

**Fig. 26:** GLASS.

**Fig. 27:** SCISSORS.

## 6.2 Compounds

In LSQ, it is possible to create new words through compounds (Dubuisson et al. 1996). These tend to be sequential rather than simultaneous. To illustrate this, the sign MISTER (Figure 28), is formed by the combination of the signs MAN and PO-

**Fig. 28:** MISTER.

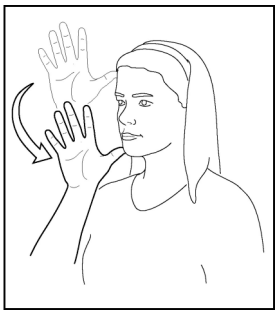

**Fig. 29:** PARENT.

LITE. The sign PARENT (Figure 29) is a combination of the signs FATHER and MOTHER.

## 6.3 Verb morphology

The majority of the verb classifications proposed in the sign language literature are based on the morphological properties of verbs, which determine the type of morphological agreement permitted (Padden 1988). While the characteristics described in these works also apply to LSQ verbs, Parisot (2003) suggests a phonological classification of LSQ verbs based on the number of structural constituents that can be modified to enable their agreement with spatial loci (many, one or none). The goal of this classification is to predict how the manual agreement will occur according to the verb group. When the phonological form of a verb does not allow for a simultaneous flexion, the agreement is made through pointing. Verbs with a static or semi-static form use this strategy[10].

(5) Phonological classification of verbs in LSQ:
   1. Flexible-form verbs: composed of several modifiable structural constituents;
   2. Semi-static-form verbs: composed of only one modifiable structural constituent;
   3. Static-form verbs: the anchored phonological form does not allow modification of any structural constituent.

First group verbs have a flexible form, i.e. many of their structural constituents can be modified to achieve verbal agreement. This is the case with the verb GIVE, shown in Figure 30, where the direction of the movement between two spatial loci indicates the roles of the arguments represented by these loci.

**10** In many cases, the agreement can be realized by non-manual markers.

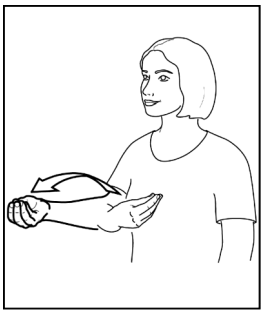

**Fig. 30:** GIVE.

With these verbs, the structural constituents that can be modified are the place of articulation and the orientation. The verb LOOK-AT has two places of articulation that can be modified. In Example 6, the movement of the verb starts on the y locus and ends on the x locus, respectively indicating the agreement with the verb agent and patient arguments.

(6) GIRL(a) INDEX3(ax) BOY(b)(Ty) 3b-LOOK-AT-3a(y-x)
'The boy looks at the girl.'

Second group verbs are semi-static-form verbs. These verbs have only one modifiable structural constituent, the place of articulation, as in the verb WORK (Figure 31). The place of articulation in its citation form is the neutral space located in front of the signer. In syntactic context, the sign can be placed to achieve a simultaneous agreement with the subject or object (already located on a specific spatial locus, as shown in Figure 32, where the verb is moved to the left space).

If a second argument must be indicated, the signer must then resort to pointing. The verb DESIRE shown in Example 7 is located on its agent locus, previously assigned to the sign DOLL. The second argument of the verb DESIRE, the theme, is indicated through pointing.

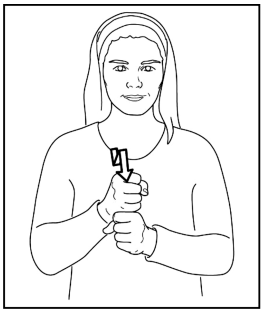

**Fig. 31:** WORK.

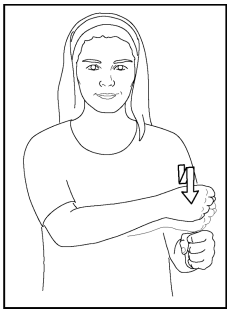

**Fig. 32:** WORK(x).

(7) GIRL(a) INDEX3(ax) JEAN(by) 3b-DESIRE-3a(y) INDEX3(ax)
'Jean desires the girl.'

Third group verbs are static-form verbs, i.e. they have no modifiable structural constituent. Those verbs are anchored; their form in discourse is always identical to their citation form. The signer will resort to a clitic pointing sign (attached to the verb) to achieve verbal agreement. This happens when the signer uses the verb LOVE (Figure 33).

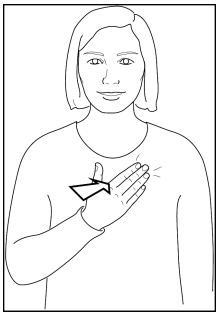

**Fig. 33:** LOVE.

In the Example 1, rewritten in Example 8, the verb LIKE is produced in its citation form, i.e. on the signer's chest. Then the two post-verbal clitic pointing signs reuse loci x and y, indicating respectively the verb agreement with the agent and patient arguments.

(8) STUDENT(a) INDEX3(ax) PRINCIPAL(b) 3b-LIKE-3a(Ty) **INDEX3**(by)(Ty) **INDEX3**(ax)(Ty)
'The principal likes the student.'

Agreement is not mandatory in LSQ if there is no semantic ambiguity regarding the agent's role. A sentence with only one animate argument, in which the context is clear enough that there is no ambiguity as to the role of the arguments, may not have an agreement marker. Example 9, with only one animate argument, has no agreement marker.

(9) CHOCOLATE(a) MARCEL(bx) 3b-LIKE-3a
'Marcel likes chocolate.'

Non-manual verb agreement strategies apply to all three verb groups. They can be superimposed on manual strategies, in which case they serve to highlight an element, or they can appear in complementary distribution to mark the animate ar-

guments in an object-subject-verb structure, as shown in Example 10 (Parisot 2003).

(10) SECRETARY(ax) MANAGER(by) 3b-LOVE-3a(Ry, Tx)
'The manager loves the secretary.'

Furthermore, it has been demonstrated that non-manual and manual forms are inversely represented according to the accessibility or non-accessibility of the indicated referent, from a semantic and morphosyntactic point of view. A less accessible referent or a referent to be emphasized in the expressed grammatical relationship will often be activated by a manual indicator (pointing sign or localisation), whereas an accessible referent (for example, one which has just been mentioned) will more often be activated by a non-manual indicator, such as the direction of the eye gaze or torso inclination (Parisot and Rinfret 2009; Rinfret 2009).

## 6.4 Derivational morphology

Derivation happens in many ways. For example, derivation of a sign may involve modification of the movement, like in the sign LEXICON (Figure 34), which is derived from the sign WORD (Figure 35) by adding a straight movement downwards, indicating a semantic plural. It is also possible to modify the handshape of a sign to create a new one, as in the signs ASSOCIATION (Figure 1) and SOCIETY (Figure 36), which are formed by the attribution of new handshapes to the base sign GROUP (Figure 37). In addition, the location or the non manual signal can be modified (Dubuisson et al. 1996). Derivation is also possible by modifying mouth movements. For example, the signs COMFORTABLE and SOFT have the same handshape. But, the first is a derivation of the second one with the addition of mouthing of the French word *confortable*.

**Fig. 34:** LEXICON.

**Fig. 35:** WORD.

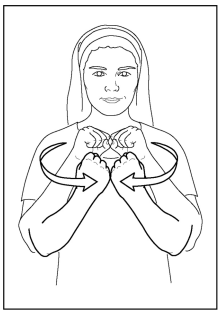

**Fig. 36:** SOCIETY.

**Fig. 37:** GROUP.

## 6.5 Proper nouns

Proper nouns in LSQ differ from proper nouns in spoken languages in the way they are used (Dubuisson et al. 1996). They are never used to address a person directly, but are used to talk about that person to someone else. Signed proper nouns can be assigned to Deaf people, and to hearing individuals in the entourage of Deaf community, as well as to public, historical, political or religious figures, etc. While some signed proper nouns are only assigned to one individual, others can be passed down from generation to generation, such as a family name. It should be noted that an individual can have more than one signed name, and that the signed name can change during a person's lifetime.

In general, the creation of signed proper nouns in LSQ follows the lexical sign formation rules (Desrosiers and Dubuisson 1992; Dubuisson et al. 1996). The majority of signed proper nouns are descriptive, i.e. based on a physical or specific characteristic of the individual. For example, an individual with very short hair was assigned the signed name CREW-CUT (Figure 38).

Many signed proper nouns are borrowed from the spoken language, French, and then translated into signs. Some use signs that match perfectly the French

**Fig. 38:** CREW-CUT.

word. The use of an approximate match for the family name Lavoie, such as the sign for VOICE (Figure 39) used for the family name *Lavoie* (*voie*, the French word for *way*, which is a homonym of *voix*, the French word for *voice*). There are also signed proper nouns created by breaking down the French word, like the name *Laverdure* (*greenery*, in English), which is produced in LSQ with the signs LAVER (WASH) and DUR (HARD) (Figure 40).

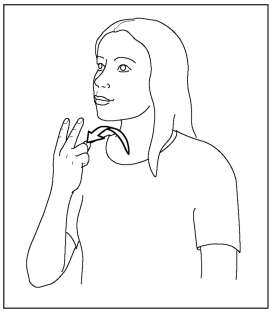

**Fig. 39:** VOICE.

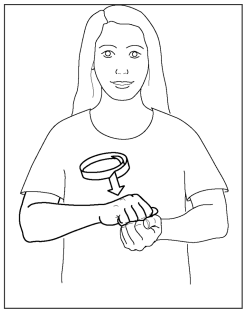

**Fig. 39:** LAVERDURE.

Many signed names are also initialized. The first letter or prominent letters of the French name are used to create the signed personal name.

Some signed proper nouns in LSQ have become common nouns. There are two well-known examples. The sign for ELECTED-MEMBER (Figure 41) comes from the signed personal name used for *Maurice Duplessis*, a former Premier of Quebec, who always had his hands in his waistcoat pockets.

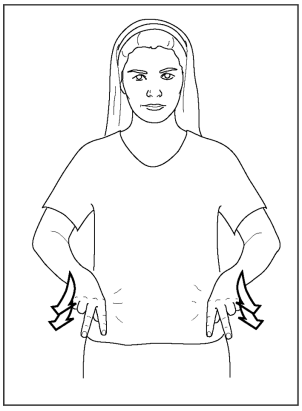

**Fig. 41:** ELECTED-MEMBER.

# 7 Basic Syntax

## 7.1 Construction in space

The role of space in sign languages is probably what differentiates them most from spoken languages. In sign languages, space is used to express syntactic and semantic relationships between elements (Pettito and Bellugi 1988). Nouns in signed speech are generally associated with spatial loci, and relationships between signs are specified by manipulating speech elements in relation to these loci (Bellugi and Klima 1982). Example 11 shows a syntactic use of space in LSQ, as the arbitrary localisation of lexical elements does not account for a spatial relationship between entities. It does however allow the establishment of a grammatical link between the arguments and verb. The locations of verb articulation serve to determine the roles of arguments.

(11) JUDGE(ax) LAWYER(by) 3b-EXPLAIN-3a(yx)
'The lawyer explains (something) to the judge.'

The permanence of marks created by assigning loci to nouns allows direct determination of relationships between speech elements without having to resort to a set of abstract features or having to rename the elements. This type of construction, which is enabled by spatial modality, affects how linguistic elements that express grammatical links relate to each other. A noun actualized in an area of space, for example MARIE, leaves a spatial mark that later can only refer to MARIE. The recovery of this mark with the articulation of another element on the same locus, for example READ, indicates a grammatical relationship between the referent MARIE and the action READ. In Example 12, two feminine, singular third-person referents are related to distinct actions. The grammatical relationship between nouns and verbs is essentially expressed through spatial associations.

(12) MARIE(ax) LOUISE(by) 3a-READ(ax) 3b-WRITE(by)
'Marie reads while Louise writes.'

Reactivation of a noun is never ambiguous in a language such as LSQ, even if several speech nouns share the same grammatical characteristics. In French (Example 13) the pronouns *elle (she)* and *lui (her)* are ambiguous because their referents share the same formal gender and number characteristics.

(13) *Marie offre des fleurs à Lise et elle lui a dit merci.*
'Marie offers flowers to Lise and she thanks her.

In LSQ (Example 14), there is no ambiguity because reactivation of the referent is not achieved by a filtering of features that are potentially common to more than

one referent. The reactivation of a locus that refers solely to one element allows for disambiguation.

(14) LISE(ax) MARIE(by) FLOWERS 3b-OFFER-3a(yx) 3a-THANK-3b(xy)
'Marie offers flowers to Lise and Lise thanks Mary.

This association allows a noun to be actualized in space and later be reactivated, without having to be repeated before being related to other elements of discourse.

The elements that can be related in this manner can be verbs (Example 15), adjectives (Example 16), clauses (Example 17) or other parts of discourse. In this last case, the part of speech associated with the mark left by the actualisation of a noun can be the character's point of view (Miller et al. 2006), or even the time of a location associated with the character or different than the rest of the reported event (Parisot 2003).

(15) PRINCIPAL(ax) STUDENT(by) 3b-PHONE-3(ayx)
'The student phones the principal.'

(16) MY-HOME CLOSE INDEX(ax) PARK(ax) SMALL(ax )
'Close to my home, there is a small park.'

(17) GIRL(a) 3a-DRAW(Ry) INDEX3(aRy) NAME(aTx) MARIE(aTx)
'There is a girl drawing whose name is Marie.'

The strategies used to assign loci or establish relations between elements through spatial marks are the same and include:
- Use of pointing directed towards a locus;
- Direct localisation of an element on a locus;
- Inclination of torso towards a locus;
- Direction of eye gaze towards a locus.

Thus in Example 18, the first strategy is used to assign a locus to the noun POLICEMAN using INDEX3 directed towards locus ... In the same example, the second strategy allowed us to assign the locus *x* to the noun WORK by articulating the noun directly on the locus instead of producing it in the neutral space, as is done in its citation form.

(18) POLICEMAN(a) INDEX3(ax) WORK(by) POSS.3(bx) 3a-ABANDON(xy)
'The policeman abandons his work.'

In the Example 19, non-manual strategies enable attribution of a locus to the noun STUDENT by directing the eye gaze towards locus *x* and by leaning the torso towards locus . and articulating the noun PRINCIPAL simultaneously.

(19) STUDENT(aRx) PRINCIPAL(bTy) 3b- LOVE-3a(yx)
'The student loves the principal.'

## 7.2 Order of signs

Although the LSQ sign order is typically Arguments-Verb, we find many different cases of element distribution in sentences. Nonetheless, the verb is never in the first position and arguments are often produced in the *Ground-figure* order (Bouchard et al. 1999). Following the example of two animate arguments, where one is a subject and the other an object, the four recorded orders in a corpus of 144 sentences are as follows:

- Object-subject-verb (54 %);
- Subject-object-verb (40 %);
- Subject-verb-object (3 %);
- Object-verb-subject (1 %);
- Others (2 %).

In LSQ, the order is defined as flexible and results from articulatory and conceptual factors. Conceptually, the representation of relationships between elements is expressed in the language following a *Ground-Figure* construction. The speaker will likely position the *Ground* and then the *Figure*. This order is reflected in all LSQ grammatical relationships:

- Argument-verb (MARIE PIERRE LOVE, Pierre loves Marie.)
- Container-content (VASE FLOWERS PUT, To put flowers in a vase.)
- Owner-object owned (MARIE BOOK POSS., Marie's book.)
- Site-target (MONTREAL QUEBEC GO, Go from Quebec to Montreal.)
- Etc.

With regards to the order Argument-Verb, it seems to be governed more by articulatory constraints than by the category of the verb. Indeed, plain verbs, i.e. those that cannot move in space, do not essentially follow the SVO order in LSQ as it has been proposed for plain verbs in ASL. Both strategies presented above, the manual one (the addition of pointing signs) as well as the non-manual ones (the superimposing of eye gaze and torso position) allow free distribution of this verb category. Example 19 shows an Arguments-Verb distribution including the plain verb LOVE. This distribution is often accompanied by two animate arguments, regardless of the verb category (Parisot 2003).

Bouchard et al. (1999) demonstrate that the variation in LSQ sign order can be explained by considering articulatory economy. They propose four types of economy to identify the choices offered to signers in relation to the various orders noted in LSQ, such as transition economy between:

- handshapes;
- places of articulation;
- movements;
- manual disposition.

The order chosen in (20) shows economy in transitions between handshapes.

(20) EMPLOYEE(a) INDEX(ax) NEWSPAPER(b) 3a-BRING-3b EVERY-DAY)
'The employee brings the newspaper every day.'

The SOV order in this example from Bouchard et al. (1999) eliminates the transition movements between the handshapes for the signs NEWSPAPER (open hand), EMPLOYEE (index and thumbs touching) and BRING (open hand). The handshapes for the signs NEWSPAPER and BRING being the same, the chosen order (SOV) is more economical than the more frequent order (OSV). The same applies in Example 21, where the economy of the transition between the loci for the signs CHILD (space) LISTEN (ear) TEACHER (temple height) enables understanding of the order chosen by the signer (SVO).

(21) CHILD(ax) 3a-LISTEN-3(by) TEACHER(by)
'The children are listening to the teacher.'

## 7.3 Types of sentence

Simple sentences in LSQ contain a verb and at least one argument. Sentences with no semantic ambiguity in the relationship between the verb and its arguments can be articulated without spatial association; in which case there is no movement to indicate the direction of the relationship. This is the case in one-argument sentences such as Example 22, or two-argument sentences with one inanimate argument such as Example 23.

(22) MARIE DREAM
'Marie dreams.'

(23) MARIE CHOCOLATE LOVE
'Marie loves chocolate.'

Sentences with two animate arguments or two locative arguments must include a spatial distinction in the location of the two arguments. This is the case in Examples 24 and 25. Most of the time, these spatial distinctions are distributed arbitrarily to the left and to the right of the signer, or in more isomorphic positions such as down/up in the expression of authority relationships.

(24) JEAN(ax) COOK(by) 3b-KNOW-neg3a(yx)
'Jean doesn't know the cook.'

(25) TOMORROW MONTREAL(x) PARIS(y) 1-PLANE(yx)
'I am taking a plane from Paris to Montreal tomorrow'

Complex sentences use the same spatial association pattern as two-argument sentences. However, this consists of the spatial localization of one clause with regard to another. If the clauses in the relationship have the same semantic weight (e.g., enumeration, comparison), they can be produced in different locations using the same localization indicators. This is the case in Example 26, where the signer lists several cities in the Montreal area. Note that a lexical indicator of coordination as a counterpart for spoken French *and* is not used in coordinated structures in LSQ. Coordination can be expressed by simple enumeration (juxtaposition of clauses or noun phrases), spatial enumeration (localisation of clauses or noun phrases in different loci), or even by using the digital enumeration process (localisation of clauses or noun phrases on different digital loci).

(26) FOR INDEX3(ax) MONTREAL(ax) INDEX3(aX) LONGUEUIL(b)(Rv)
LAVAL(c)(Tw, Rw)) ST-HUBERT(d)(Ty, Ry)) SOREL(e) INDEX3(ez)(Rz)
[...]
'[Services are offered] here, in Montreal, [for cities of the area] Longueuil, Laval, St-Hubert, and farther, Sorel [...]'

The comparative structure in LSQ is achieved by producing two clauses in two different loci (usually to the left and to the right) and by optionally connecting these two clauses with a comparison indicator (e.g., LIKE, SAME, DIFFERENT, OR, etc.).

Complex sentences involving a subordinate relationship (e.g., conditional as in Example 27, relative as in Example 28, etc.), i.e. where completion of the meaning of one clause depends on completion of the clause with which it is related, are structured differently from enumerations or comparisons. In sentences involving a relationship of dependence, the subordinate clause and the main clause will be located in different locations in space, with distinct spatial association markers, usually an eye gaze on one clause and a body shift (torso inclination) on the other clause, as shown in the following examples. In Example 27, the condition (DOLL FIND) is spatially marked by an eye gaze in a non-first person location while the main clause (SLEEP) is spatially marked by a torso movement in the first person position. In Example 28, the main clause (GIRL DRAW INDEX), localised by an eye gaze, is followed by the explanation (NAME MARIE), spatially marked by a distinct torso inclinations.

(27) DOLL(a) 1-FIND-3a(x)(Rx) 1b-SLEEP
'If I find my doll, I will sleep.'

(28) GIRL(a) 3a-DRAW(Ry) INDEX3(aRy) NAME(aTx) MARIE(aTx)
'There is a girl drawing whose name is Marie.'

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