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Published in:
Studies in Language Companion Series

DOI:
[10.1075/slcs.228.07van](https://doi.org/10.1075/slcs.228.07van)

Publication date:
2023

Document Version
Peer reviewed version

[Link to publication](#)

Citation for published version (HARVARD):

Vandenitte, S 2023, When referents are seen and heard: A comparative study of constructed action in the discourse of LSF (French Belgian Sign Language) signers and Belgian French speakers. in L Gardelle, L Vincent-Durroux & H Vinckel-Roisin (eds), *Studies in Language Companion Series: From conventions to pragmatics*. Studies in Language Companion Series, vol. 228, pp. 127 - 149.
<https://doi.org/10.1075/slcs.228.07van>

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**When referents are seen and heard: A comparative study of
constructed action in the discourse of LSF (French Belgian Sign
Language) signers and Belgian French speakers**

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Constructed action is a referential strategy whereby signers and speakers use their bodies and/or voices to depict referents and their actions. Using a corpus-based study, this chapter compares constructed action in LSF and Belgian French. It shows both that LSF signers use constructed action to denote referents more frequently than Belgian French speakers do and that the two language communities use an overlapping set of articulators to enact referents. However, it also sheds light on differences in the use of these articulators, notably facial expression and the use of hand and arm movements, across LSF and Belgian French. By documenting this referential strategy in a signed and a spoken language, this study informs the field of comparative semiotics.

Keywords: Signed language, gesture, corpus linguistics, multimodal, comparative semiotics

1. Reference in signed and spoken languages

In their history of the study of reference, Clark & Bangerter (2004: 41) show how the concept of referring shifted from a decontextualised process to an interactive one. At first, referring was treated as an autonomous act based mostly on literary or armchair examples. But once investigators began studying sound recordings of conversations, that conception changed and referring was treated as a participatory act that requires coordination between speakers and addressees. Clark & Bangerter add that a more recent methodological development was yet to reshape the concept of reference: “[O]nce investigators began studying conversations on videotape, that conception changed yet again” (2004: 41). The present chapter brings support to the proposal to reconsider the act of reference by moving beyond traditional foci on unimodal language use and spoken language (SpL), using videotaped corpus data from two languages.

1.1. Referring in a signed language and its ambient spoken language: An illustration

Utterances (1) in Figure 1 and (2) in Figure 2 illustrate some referential strategies used by both Belgian French (BF) speakers and signers of French

Belgian Sign Language (LSFB), *Langue des signes de Belgique francophone* in French, the signed language (SL) found in the French-speaking regions of Belgium – Brussels and Wallonia. (1) is retrieved from the FRAPé Corpus, a corpus aiming at collecting BF multimodal data capturing both participants’ voice and bodily movements¹.

(1)



‘...passer’ avec accent aigu /iii/’

‘...passer’ with an acute accent /iii/’

Figure 1. Utterance in Belgian French (FRAPé Corpus, L019 Task 5,
00:07:00.981 - 00:07:03.837)

¹ Informed consent was obtained from all participants (using LSFB for the LSFB Corpus and French for the FRAPé Corpus). The LSFB Corpus is available online (<https://www.corpus-lsfb.be>). The FRAPé Corpus is currently being collected. The research project leading to this publication, including the protocols used for data collection and protection, has been subjected to the evaluation of the Human Sciences Ethics Committee of the University of Namur.

(2)



LH

CA:BOSS CLOSES WINDOW

RH PT:PRO3

MAN

The angry boss closed the window.

Figure 2. Utterance in LSFb (LSFB Corpus, S075 Task 12, 00:05:06.727 - 00:05:08.404)

The speaker in utterance (1) is telling their addressee about their language attitudes towards deviations from orthographic conventions. After mentioning a student writing a word with <é> (i.e., using a final <e> with an acute accent) instead of <er>, the speaker lifts their hands slightly upwards, clenches their fingers, draws an annoyed facial expression and produces a lengthy /i/ sound (see third still). Through this gestural ensemble, the speaker gives their addressee a glimpse of their reaction upon noticing the spelling mistake. They have thus denoted an individual referent – themselves – involved in some process – perceiving a mistake and reacting to it. It is striking that the communicated meaning here relies not only on French words

and word order but also on the interplay of visible actions that are part and parcel of the speaker's referential intent.

Utterance (2) is retrieved from the LSFBS Corpus (Meurant 2015). In this utterance, the LSFBS signer is retelling a story from an animated short film that they have just watched. (2) occurs after the signer retells that an employee is trying to send paper planes through a window to a person in the building across the street. In (2), the signer explains that the employee's boss angrily closes the window. In addition to identifying the boss using the LSFBS signs PT:PRO3 (which can be translated as a third person pronoun in English) and MAN, the signer denotes the referent closing the window using another strategy: they depict the action by imitating it. As in (1), reference is achieved by combining both conventional and less conventional semiotics. (1) and (2) exemplify that reference is a multimodal and semiotically complex activity. This is because it relies on both the visual-kinesic and the oral-aural modalities, in which varied strategies, from conventional words or lexical signs to largely improvised forms, are used. These two observations will now be explored in more detail using research findings in linguistics and gesture studies addressing both SLs and SpLs.

1.2. *Reference, a multimodal and semiotically composite phenomenon*

Research in linguistics has long focused on a specific combination of two parameters of meaning construction. On the one hand, meaning has been studied in one specific modality, i.e., the speech component of SpLs. A large amount of research carried out in linguistics has used transcripts of spoken data as its baseline for language theory (Kusters et al. 2020). Developments in recording technologies then enabled linguists to study speech in a systematic way rather than having to rely on its transcription. These changes were paired with a renewed understanding of language as an activity that is essentially grounded in social interaction. Yet, even though speech provided more authentic data to study SpL, the picture was far from complete. One remaining misconception was that speakers' use of their bodies did not contribute to meaning-making (McNeill 1985). A second myth that needed debunking was that the SLs of deaf communities were not real languages but rather rudimentary communication systems, closer to what was then considered as mere "gesture" (Kusters et al. 2020: 6). Yet, it is now clear that SLs are fully fledged linguistic systems that need to be accounted for by language theory on par with SpLs. This lasted until researchers started investigating SLs, e.g., Stokoe (1960) for American Sign Language (ASL).

On the other hand, partly as a result of the history of linguistics discussed above, linguists came to view language as being essentially a system of lexical and morpho-syntactic conventions (Vigliocco et al. 2014). As Hodge et al. (2019b: 34) phrase it, “most investigations of referencing in spoken and/or written language use have tended to focus on the pro/nominal, lexically encoded and/or anaphoric aspects”. In addition, an important part of linguistic inquiry dealt with a small sample of the world’s languages and the communities who speak them, i.e., (Western) Indo-European languages. This focus is likely to have caused a downplaying of the role of less conventional semiotics by marginalising phenomena that are prominent in other language communities (Vigliocco et al. 2014; Dingemanse 2018). More recently, an increasing number of linguists have started acknowledging the extent of semiotic diversity across communities and contexts (Clark 1996; Ferrara & Hodge 2018). In addition to conventional meaning-making, which they label *description*, researchers have taken an interest in two more methods of communication: *indication* and *depiction* (Clark 1996; Ferrara & Hodge 2018).

This approach is rooted in Peirce’s (1955) trichotomy of symbols, indices and icons. In this neo-Peircean framework, description is defined as the use of symbols:

Descriptions are typically arbitrary, without a motivated link between form and meaning. They encode meaning using strings of symbols with conventional significations [...] To interpret descriptions, we decode such strings of symbols according to a system of conventions (Dingemanse 2015: 950-951).

Descriptive meaning-making is pervasive in the speech of communities using SpLs but is also found in their conventionalised gestures, also called *emblems* or *quotable gestures* (Kendon 1984). Description has been an object of inquiry in signed language linguistics since the emergence of the field. For instance, SLs have been shown to display repertoires of conventional, lexical, signs that are specific to the different communities in which they are used (e.g., Ferrara & Hodge 2018). Indication consists in signaling:

specific referents via indices using a variety of forms [...] that anchor communicative events to a specific time and place. These forms are physically connected to their referents [...], and work to create focused joint attention (Ferrara & Hodge 2018: 4).

Well-known examples of indication include pointing actions as well as indexical pronominal forms in SpLs (Ferrara & Hodge 2018). Because the present work does not deal with indication, this method will not be further

discussed. Depiction is yet another signaling method identified by Neo-Peircean semioticists. Defined as the use of icons, depictive meaning-making exploits “perceptual resemblances” between a form and its corresponding referential target (Ferrara & Hodge 2018: 5). Dingemanse (2015: 950) defines depictions as:

[T]ypically iconic, representing what they stand for in terms of structural resemblances between form and meaning. They use material gradiently so that certain changes in form imply analogical differences in meaning. [...] To interpret depictions, we imagine what it is like to see the thing depicted.²

Examples of depiction in SpLs span from onomatopoeia or ideophones, to speakers’ iconic gestures (Vigliocco et al. 2014; Dingemanse 2018; McNeill 1992; Müller 2014). Depiction has also been one of the main preoccupations of signed language linguists (e.g., Cuxac 2000). Across many of the world’s SLs, similar depictive strategies appear to have emerged (Garcia & Sallandre 2020). For instance, depicting signs can be used to show, among other aspects of meaning, the shape or movement trajectory of a referent (Liddell 2003).

Another well-known example of depiction in both SLs and SpLs lies in the way language users enact or imitate referents. This referential strategy called

² Dingemanse’s definition also applies, by extension, to other sensory experiences, such as sound or touch.

constructed action (CA) (Metzger 1995), also labelled *role-shift* (Quer 2011), *personal transfer* (Cuxac 2000), *acting* (Müller 2014), or *enactment* (Hodge & Ferrara 2014) is the main focus of the present work. Cormier et al. (2015: 167)'s definition of CA is adopted here: "a representational device where one or more bodily articulators [...] are used to represent the utterances, thoughts, feelings and/or actions of one or more referents". CA is found in both utterances (1) and (2). In (1), the BF speaker reenacts themselves upon noticing a spelling mistake and reacting in annoyed manner using their facial expression, hands as well as voice (see third still). In (2), the LSFBSigner enacts an angry employer closing a window (see third still).

The neo-Peircean framework goes beyond traditional linguistics and raises new issues about language use and linguistic diversity, such as how language users rely on and combine different semiotics in different contexts. Indeed, description, depiction and indication are often combined to create so-called *composite utterances* (Enfield 2009). One fundamental research avenue in this framework relates to how different language communities use and combine these methods (Kendon 2014; Ferrara & Hodge 2018). One object of comparative semiotics has been the comparison of SpLs and SLs (Ferrara & Hodge 2018). This implies comparing SLs to speakers' multimodal language use, i.e., taking both speech and gesture into account (Vermeerbergen & Demey 2007). One way this can be done is by using

directly comparable corpora of SLs and of their ambient SpLs (Hodge et al. 2019a). The present study inscribes itself in a similar approach by analysing CA in a SL and its ambient SpL, using directly comparable corpus data. After a survey of studies that compare CA in SLs and SpLs, the method and results of this study on LSFBS and BF are presented.

1.3. Referring with constructed action across signed and spoken languages

In the next sections, I attempt to draw a short outline of studies comparing CA across SLs and SpLs. One major reason to do so is that there are several reports in the literature establishing that this referential strategy looks different across SLs and SpLs. In particular, I discuss the frequency of use of CA and the different articulators that can be used to enact referents.

1.3.1. Frequency of use

There is a consensus in the literature that CA is more frequent in SLs than in SpLs. For example, when comparing German Sign Language (DGS) to their intuition of speakers' use of CA, Herrmann & Pendzich (2018: 285) noted that they “do not find the identical frequency of such comparable strategies in spoken language”. Several studies that addressed SLs together with their ambient SpLs came to the same conclusion. In a study on ASL and American

English (AmEn) narrative retellings of *The Tortoise and the Hare*, Rayman (1999: 63) noted that CA is more frequently used in ASL than in AmEn:

The Deaf storytellers reliably characterized the rabbit and the turtle [...] and maintained this characterization through use of role-shifting throughout the story. [...] Typically, the English speakers did not enter into the role of either of the characters.

In a more recent comparison of ASL and AmEn, Quinto-Pozos & Parrill (2015) studied elicited cartoon retellings from 10 ASL signers using the same materials as Parrill (2010) to investigate AmEn. Analysing some key events from the source narrations (e.g., a character holding an object or moving in a given space), they found that signers' and speakers' uses of CA and external viewpoint (depicting signs and observer viewpoint iconic gestures) were distributed differently: even though signers regularly used depicting signs for events that speakers depicted using observer viewpoint gestures, they also used CA. Unlike for speakers, it appears that the strategy was used "throughout all categories of events" in the signers' narratives (Quinto-Pozos & Parrill 2015: 27). In a comparison of British Sign Language (BSL) and British English (BrEn), Earis & Cormier (2013: 340) also noted that discourse in BSL featured more CA than BrEN discourse: "Depicting characters using [...] co-speech gesture does not always occur in spoken English, but depicting characters [...] appears to be a very important element of storytelling in signed narratives". Prior studies have thus shown that referents are more often

denoted using CA in SLs than in their ambient SpLs. In addition to asking whether and to what extent CA is used, comparative studies have also asked how CA is performed across SLs and SpLs.

1.3.2. Orchestrating different articulators to enact referents

Several claims have also been made about how frequently specific articulators are used for CA in SLs. Traditionally, so-called *non-manual articulators*, like gaze, face, head, and torso, have been considered more prominent (e.g., Quer 2011). The use of these articulators has also been reported for SpLs (e.g., Stec Huiskes & Redeker 2016). In the same vein, the contribution of hand and arm movements has been discussed for both SLs (e.g., Cormier et al. 2015; Ferrara & Halvorsen 2017) and SpLs (e.g., McNeill 1992, Müller 2014). However, despite similarities in the articulators that are used for CA, the literature suggests that speakers and signers might use them differently.

Quer (2019: 225) proposes that their use in SLs is regulated “in a richer and more structured fashion than in co-speech gesture”. Rayman (1999: 78) notes that ASL signers rely on “multiple channels [...] to represent the characters’ personalities and behaviours through facial expressions, attitudes, and body movements”. AmEn speakers however do not show the same regularity in the use of these articulators: “In contrast, the hearing narrators rarely used facial expression to depict characters or a means comparable to role-shifting”.

Similarly, Quinto-Pozos & Parrill (2015)'s results suggest that the use of two articulators, facial expression and torso, is more specific to ASL: "uses of affect and the torso by signers are common and important ways to engage in the retelling or narration of a set of events" (2015: 27). In their study on BSL and BrEn, Earis & Cormier (2013) also note that signers' uses of bodily articulators such as eye gaze, facial expression as well as head and body position for CA "are clearly more conventionalised than those [...] by the spoken English storytellers" (2013: 340). The use of feet and/or legs (FL) has not been studied in comparisons of SLs and their ambient SpLs. While mentioned in a few studies on individual SLs (e.g., Quinto-Pozos & Mehta 2010; Jantunen et al. 2020), Herrmann & Pendzich (2018) claim that the use of these articulators for CA is only found in SpLs but not in SLs. Finally, the vocal tract is yet another articulator that has been studied in SpLs. In addition to the use of visible bodily articulators, studies have shown that language users also resort to their voices to enact what the referents that they depict sound like (e.g., Rayman 1999; Earis & Cormier 2013). In short, comparative studies on CA in SLs and their ambient SpLs show that while there is important overlap in the articulators that are used in spoken and signed interaction, their use for CA may not be as systematic nor evenly distributed across the two types of languages. However, more research might be needed to better understand how different signing and speaking linguistic communities use different body parts and voice to denote referents using CA.

Indeed, studies on CA have sometimes made comparative claims on how the phenomenon compares across SLs and SpLs in the absence of comparable data. For studies which have addressed CA from a comparative perspective, it seems that most have focused on the narrative genre exclusively. To take one step towards addressing these challenges, the present work carries out comparative research on CA narrative and conversational data using a directly comparable corpus of LSFb and BF. Inspired by prior research in comparative semiotics, particularly on CA, the present work will try to answer the following research questions: To what extent do LSFb signers' and BF speakers' uses of CA look alike? How frequently do they resort to this strategy and which bodily articulators do they use? Based on prior works on SLs and their ambient SpLs, one could expect for CA to be more frequent in LSFb than BF. Similarly, it could be hypothesized that LSFb signers use specific articulators, like non-manuals, more systematically than BF speakers do. In the following sections, I explain how the video data was collected, selected and enriched by means of annotations to carry out the corpus study.

2. Method

The LSFB Corpus consists in a collection of discourses produced by 100 signers in semi-directed dyadic conversations. To enable researchers to perform a fair comparison of LSFB and its ambient SpL, BF, the FRAPé Corpus is currently being collected. It is built with the same procedure for data collection as the LSFB Corpus, ensuring maximal comparability. The use of dialogic data allows for a usage-based approach to CA by analysing and measuring how it emerges and patterns in social interaction. Participants' interactions were guided in LSFB by a deaf moderator for the LSFB Corpus whereas FRAPé Corpus moderators addressed the participants in French. A few tasks related to topics specific to the LSFB community and its language were adapted to the specificities of the BF community. Figure 3 illustrates the filming conditions in which both corpora are collected. A total of three cameras are used, two record an upper body view of each participant and the last one records a wide-shot of the dyad. A microphone is also placed next to each participant for the FRAPé Corpus recordings.



Figure 3. Illustration of the data collection procedure, involving three cameras.

2.1. *Corpus selection*

Two sub-corpora with four native LSFBS signers and four native BF speakers were analysed for the present study. The LSFBS sub-corpus consists in the discourses of 3 male and 1 female signers whereas the FRAPÉ Corpus includes the productions of three female and one male speakers. All participants were between 22 and 45 years of age. Two tasks were selected: tasks 5 and 12. Task 5 is a conversational task in which, after being provided with elicitation questions like “*What is proficient French speaking/LSFB signing?*”, the participants exchange about their language attitudes. Task 12 is a narrative retelling task. After watching a short film or reading part of the picture book *Frog, Where Are You?* (Mayer 1969), participants retell the story to their conversational partner. Both tasks were selected because of their likeliness to favour the use of CA. On the one hand, it was hypothesized that

speakers and signers would reenact language events like utterances when talking about their language attitudes. On the other hand, narration is well-known for favouring the occurrence of CA (Ferrara & Hodge 2014). Table 1 shows the duration of the analysed data by task and recorded dyad. The analysis focused on 55 minutes and 29 seconds of video data (23 minutes and 22 seconds in LSFb, 32 minutes and 7 seconds in BF).

Table 1. Selected sub-corpus

LSFB Corpus		FRAPé Corpus	
S059, S060		L001, L002	
T5	T12	T5	T12
05:07	08:39	09:47	06:06
S075, S076		L019, L020	
T5	T12	T5	T12
03:33	06:03	08:21	07:53
23:22		32:07	

2.2. *Annotation procedure*

The corpus was annotated using the multimodal annotation software ELAN (Crasborn & Sloetjes 2008)³. The annotation protocol was largely inspired by Cormier et al. (2015). It identifies CA segments as continued, unified wholes involving different, not necessarily simultaneous, enacting behaviours. In addition to identifying the occurrence of CA, Cormier et al. (2015) identify which articulators are used by annotating for enacting behaviour in the following body parts: gaze, face, head, torso, hands and/or arms. Based on reports from other works (see section 1.3.2.), the use of foot/feet and/or leg(s) and voice is also investigated in this study. The annotation performed in ELAN relied on multiple tiers, listed below, together with the annotation conventions that were used (see Table 2 for a list of the tiers and Figure 4 for an illustration of the annotation procedure in ELAN). Two rounds of annotation were performed by the author. Identified tokens of CA were annotated on the *CA:summary* tier. On each annotation cell of this tier, the *CA:prefix* is followed by a short description of the enacted referent and/or some action they perform. For each articulator under scrutiny, a corresponding tier under the *CA:summary* tier (e.g., *CA:gaze* or *CA:torso*)

³ Max Planck Institute for Psycholinguistics, The Language Archive, Nijmegen, The Netherlands (<https://archive.mpi.nl/tla/elan>)

tracks whether and when the articulator is used. When an articulator is active for CA, an annotation cell is added on the corresponding tier. Depending on the annotator's degree of certainty, the articulator is either coded as active (*yes*) or as *unclear*. If a given articulator is not enacting during a token of CA, no annotation is found on its corresponding tier.

Table 2. Annotation tiers and protocol

Tier name	Enrichment	Additional explanation
CA:summary	CA:enacted referent and/or action	The annotation was preceded by '?' if the annotator was uncertain as to whether some behaviour indeed constituted CA.
CA:articulator (gaze, ⁴ face, head, torso, left hand and/or arm, right hand and/or arm, feet and/or legs, and voice)	yes	The articulator is used for CA.
	unclear	It is unclear to the annotator whether the articulator is used for CA or for some other function.

⁴ Gaze was annotated as active based on the combination of two criteria. First, the language user breaks gaze address with their conversational partner. Second, their gaze is perceived to depict the constructed referent's gaze behaviour, like its direction or blinking. Thompson & Suzuki (2014) note that language users, while enacting a referent, sometimes redirect their gaze towards the addressee as if the latter were another referent. Because it is difficult to formally distinguish between regular and enacting addressee-directed gaze, these instances are not captured by the present coding scheme.

In Figure 4, the LSFBSigner depicts a man looking at a departing train on his right side. The activation order of the time-aligned annotations reflects that the signer first leans their head forwards and rotates it to the left while also turning their gaze in the same direction. The signer then also uses their face and torso to depict the man's disappointment and his leaning forwards. Unlike for other articulators, facial expression and gaze are used for a shorter time and their activation does not last until the end of the depiction. As the absence of annotations on other tiers shows, no other articulator was used to enact the referent in this token of CA.

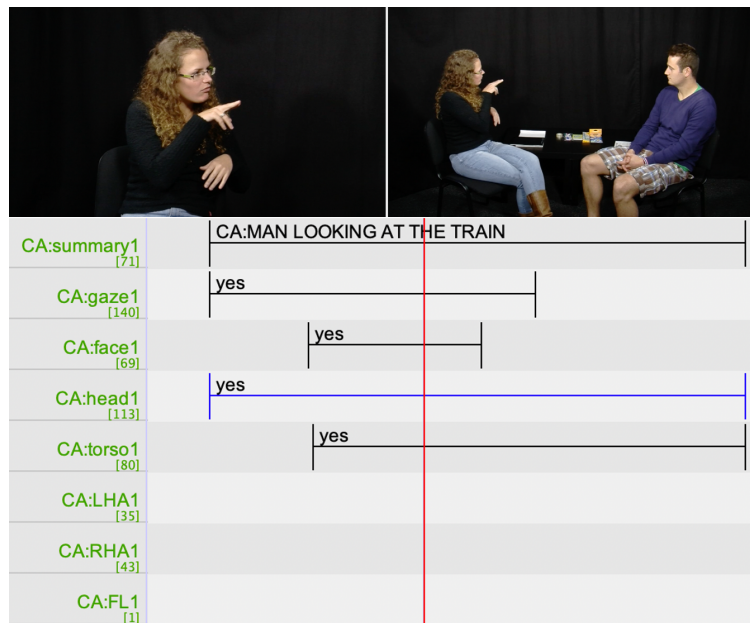


Figure 2. Illustration of the annotation procedure and tiers in ELAN

3. Results

The performed annotations yield descriptive frequencies of the number of tokens of CA that were found, their frequency in relation to the discourse time, their duration in relation to discourse time, and the activation frequency of the surveyed articulators. For each, two results are provided: the first (*unclear cases included*) includes tokens annotated as ‘unclear’ on the *CA:summary* tier and/or the *CA:articulator* tiers while the second (*unclear cases excluded*) discards them.

3.1. Frequency of CA

When including unclear tokens, the present sub-corpus features 570 instances of CA. This number is unevenly distributed across the LSF and BF data as 383 tokens are found in the former and 187 in the latter. As the LSF data is nearly 10 minutes shorter than the BF recordings, LSF signers produce an average of 16.39 tokens of CA every minute whereas BF speakers produce 5.82. With respect to the amount of time spent on performing CA, the difference is equally striking: 52.08% of LSF discourse time co-occurs with CA as against 15.78% for BF.

Using more conservative measures and excluding tokens of CA which were coded as uncertain, the trends observed in the first analysis still stand. First, LSFB features more tokens of CA than BF. Out of the 490 clear tokens of CA, 346 were produced by LSFB signers and 144 by BF speakers. Second, the production of CA relative to time measures also shows that the phenomenon is proportionally more pervasive in LSFB with respect to French. Whereas signers produced 14.81 tokens per minute on average, speakers produced 4.48 sequences of CA for the same amount of time. Finally, in LSFB and BF, CA respectively co-occurs with 50.2% and 13.91% of the total discourse time. After reporting on the general use of CA, the use of the different enacting articulators is now addressed.

3.2. *Frequency of articulator activation*

Figure 5 shows the raw number of occurrences for which each surveyed articulator was coded as activated for CA in the LSFB and FRAPé corpora. The mean use of each articulator for CA is provided in Figure 6. Both figures were generated using ggplot2 (Wickham 2016) in the statistical software R (v4.1.0; R Core Team 2021).⁵

⁵ Because of the similarity between the two versions of the results (i.e., both when tokens annotated as ‘unclear’ are included or discarded), the data used to generate Figure 5 and Figure 6 includes tokens annotated as ‘unclear’.

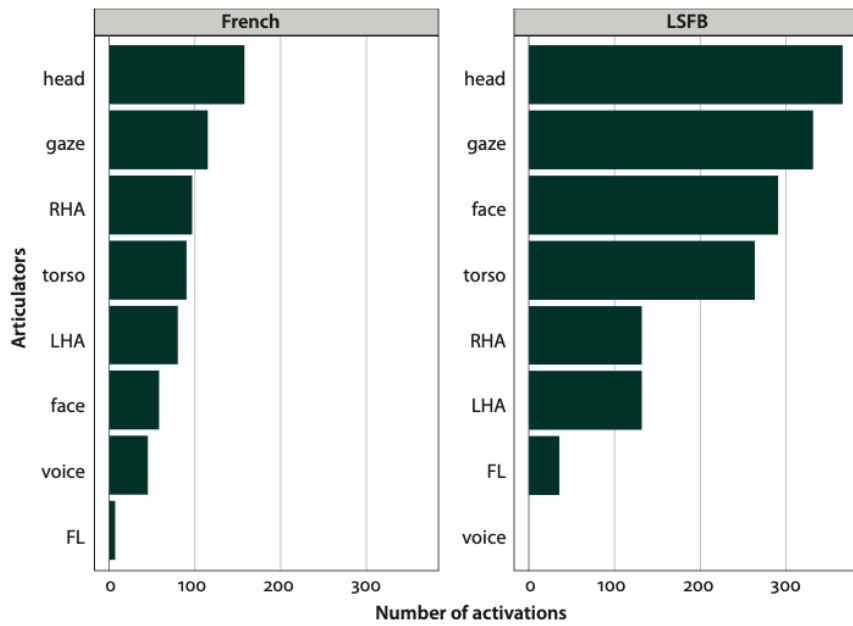


Figure 5. Counts of articulator contribution to CA in French and LSFb

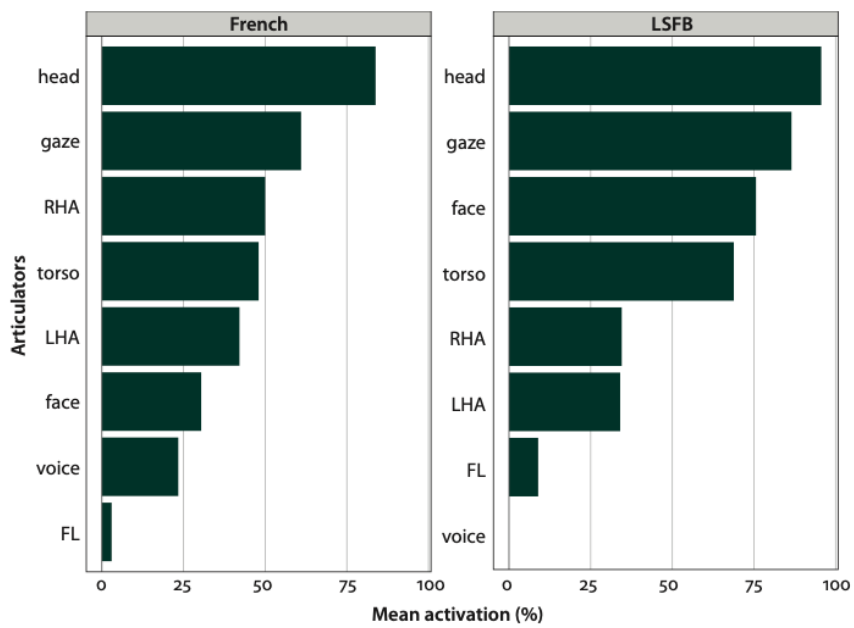


Figure 6. Mean articulator contribution to CA in French and LSFb

Both when including or discarding unclear tokens, head and gaze are the most frequently used articulators in LSF and BF. Comparing them cross-linguistically, one notes that LSF features a higher frequency for these articulators than BF (respectively 95.8 / 95.7 versus 84 / 83.3 % for head and 86.7 / 87.6 versus 61.5 / 63.2% for gaze). The picture is more complicated for the five remaining articulators. In both versions of the LSF results, face, torso and the left and right hands and/or arms (hereafter, LHA and RHA or HA when referring to both), in decreasing order, the next most frequently used channels for CA (76 / 79.2% for face, 69.2 / 72% for torso, 35 / 35.3% for RHA, 34.5 / 34.7 for LHA). This differs from the activation frequencies observed for BF: the use of RHA (50.8 / 51.4 %) is followed by enacting torso movements (48.1 / 50.7%) which precede LHA movements (42.2 / 45.1%). Two main points can be made here. First, like for head and gaze, enacting torso movements are more frequent in LSF than French. Second, whereas a clear gap is found between torso and HA in LSF, the same cannot be said about BF. Indeed, torso and HA movements cluster around similar frequency values in the analysed FRAPÉ sub-corpus since enacting HA movements are more frequent in French than LSF. However, the most striking result lies elsewhere. A major difference in the distribution of bodily articulators for enactment can be singled out: whereas face is one of the most prominently used articulators in LSF, it remains a comparably rarer one in BF (30.5 / 27.1%). BF speakers also used their voice to enact referents in 23.5 / 13.9%

of CA tokens. Finally, the use of FL was marginal, regardless of the language under scrutiny.

4. Discussion

The present study constitutes the first comparative study on CA in LSFB and BF. While the use of a corpus study presents several advantages, several limitations could be noted. First, the sample size remains small as the discourse of 4 speakers and signers of each language were analysed. More participants should be included in future studies and interindividual differences should be analysed to better disentangle patterns common to all members of a group from individual choices in the production of CA. Second, the gender imbalance of the sample may also impact the results. Future studies should strive for an equal number of female and male participants in each corpus. In addition, the reported analyses were performed by a single annotator. While general patterns seem stable both when including and excluding *unclear* tokens, resorting to additional annotators and computing an inter-annotator agreement rate would reduce subjectivity and thereby consolidate the validity of the study. The results reported in the preceding sections add to the field of comparative semiotics and both confirm and nuance some frequent claims about CA found in the literature.

First, the study corroborates prior research inasmuch as CA is clearly more frequent in LSFb. Comparing the time spent on performing CA to the duration of the total discourse, CA takes more than three times as much time in the discourse of LSFb signers than in the discourse of BF speakers. These results show that CA is a crucial part of LSFb signers' repertoire for doing reference and attest to the existence of a similar, though less recruited, strategy in BF. Second, the analysis of the articulators used to enact referents in LSFb and BF shows that not all articulators are used to the same extent. Generally speaking, the results for the LSFb sub-corpus confirm a widely reported observation in the literature, namely that non-manuals (gaze, facial expression, head and torso) are more prominently used than other articulators in SLs. It is worth noting that head seems to be the most frequent articulator, a result which differs from frequent claims in the literature about the primacy of other articulators, such as gaze. Figure 7 illustrates the use of non-manual articulators in LSFb in utterance (3). Discussing the difficulty to understand people who sign in a very condensed manner, the signer uses enactment to show themselves confused, trying to make sense out of what was said. To this end, they use a puzzled facial expression (co-occurring with 'LOOK WHAT'), redirect their gaze as though looking at another addressee and lean their head and torso forwards (co-occurring with 'WHAT') as one would to better understand a potential repair sequence.

(3)



LH	SHORT		PALM-UP	PALM-UP
RH	THERE-IS	SHORT	BUT	LOOK
				WHAT

Sometimes, people sign very briefly, and I look at them, wondering: 'what?'

Figure 7. CA in LSFB (LSFB Corpus, S059, Task 5, 00:00:23.614 -
00:00:25.330)

Similarities can be found across LSFB and BF in the use of non-manuals. Indeed, the prominence of head and gaze is equally found in BF. Hence, it might be misleading to treat their importance with respect to other articulators in SLs as a modality-specific phenomenon. In utterance (4) found in Figure 8, the BF speaker describes linguists' state of perplexity when immersed in their data. Like in the preceding example, the speaker enacts linguists by leaning their whole body forwards, closing their eyes and adopting a confused facial expression.

(4)



C'est pas grave. Nous, on est parfois trop dedans et on voit pas, on voit plus [...]
That's no big deal. Even we get lost in it and we can't see, we can't see anymore
[...]

Figure 8. CA in BF (FRAPé Corpus, L001, Task 5, 00:04:57.928–
00:05:00.836)

However, non-manuals seem to be less prominently used in BF in comparison to LSF. In addition to exhibiting lower frequencies (regardless of their language-internal distribution with respect to other articulators), one can also notice that torso movements, for instance, cluster closely with enacting hand movements in speakers' use of CA. Another difference lies in the use of facial expression for CA. LSF signers undeniably denote referents by enacting their facial expression more frequently than BF speakers do. This result brings support to the claims that non-manuals may play a distinct role in SLs as compared to SpLs. Utterances (5) and (6) respectively in Figures 9 and 10 exemplify the retelling of the same event (elicited using the same animated short film). Unlike the LSF signer in (6), the BF speaker in (5) does not use facial expression to denote the referent's physical effort to catch a sheet of

paper blown away by the wind nor the referent's relief upon grasping the sheet. Examples like these suggest that facial expression is a key element of CA in SLs like LSFB, more so than in SpLs, like BF (see also, e.g., Quinto-Pozos & Parrill 2015).

(5)



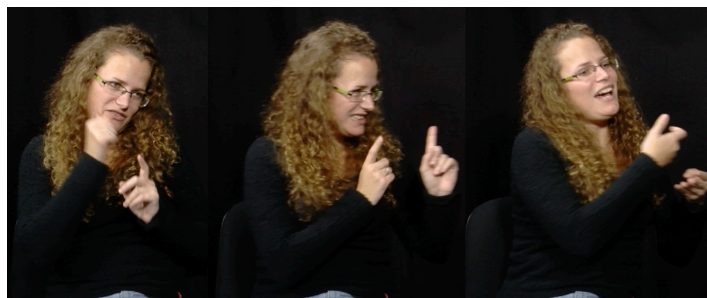
[...] qui court après un papier [qui s'est envolé]

[...] who's running after a sheet of paper [that was blown away]

Figure 9. CA without enacting facial expression (FRAPé Corpus, L019,

Task 12, 00:00:24.907 - 00:00:26.681)

(6)



LH	DS:PERSON	RUN	CA:CATCH
RH	WOMAN	RUN	CA:CATCH

The woman's running after [the sheet], catches it, relieved.

Figure 10. CA with enacting facial expression (LSFB Corpus, S059, Task 12, 00:04:01.002 – 00:04:03.801)

The different use of facial expression in LSFB and BF may be partly related to the different influence of sensory experience on interaction. In particular, the availability of voice in SpL interaction between hearing individuals allows to enact referents by modulating prosodic properties of the speech stream, like duration, intensity or pitch, notably in utterance reports (Stec et al. 2016; Coombs Fine 2019). In (1), the speaker uses their voice to enact their irritation. More specifically, they produce a non-conventional sound /iii/ while simultaneously using several bodily articulators. Like facial expression, voice can be an efficient tool to express stance or convey a referent's emotional state (Coombs Fine 2019). It may thus be that BF speakers rely on their voice to express some meanings that LSFB signers convey using facial expression.

Yet another difference is found in the more frequent use of HA in BF than in LSF. One potential explanation for this is that signers may be producing what has been coined as ‘reduced’ or ‘subtle’ CA in the literature (see Cormier et al. 2015 and Jantunen et al. 2020), whereby their production of CA co-occurs with that of manual lexical signs (see utterance (6) for an example: on the second still, the signer both uses their hands to produce the lexical sign RUN and uses their head, gaze, and face to enact the running the referent). Speakers, by contrast, are freer to use their hands for CA. In addition, qualitative observation of the data and insights from the literature can complement and nuance the idea that LSF signers’ and BF speakers’ uses of HA differ only in frequency. In the present study, HA was coded as active during the production of some iconic lexical LSF signs. For instance, several instances of the lexical sign glossed LS, which denotes meanings translated as *signed language(s)* or the verbal lexeme *sign*, were coded as active on the *CA:LHA* and *CA:RHA* tiers. This sign is conventionalised in LSF but it also exhibits visible resemblances with respect to the action it denotes (e.g., it is produced with both hands and it involves movement). As suggested by Ferrara & Halvorsen (2017), signers can fluidly use iconic signs both to conventionally describe and depict the actions denoted by these signs. Take the illustrations found in Figure 11: the signer uses the same sign (LS) to contrast linguistically insecure signers signing discreetly (left still) with much more confident signers (right still).

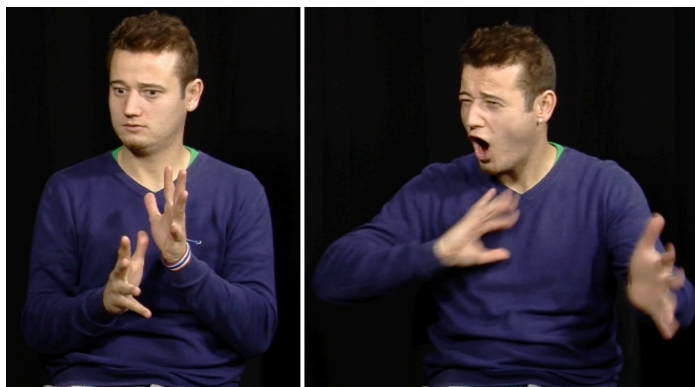


Figure 11. Tokens of iconic lexical sign LS used for CA

Zooming in on the signer's use of their HA, the main difference here lies in both the speed and the amount of space taken by the HA movements. Tailoring the form of the iconic lexical sign LS, the signer enacts the diverse signing styles of two different referents. It is unclear to what extent these instances have been included by signed language linguists who study CA but they certainly appear relevant to the study of how signers depict referents' actions using their HA. In short, more detailed annotations could help better grasp similarities and differences in speakers' and signers' uses of HA for CA. Finally, though infrequent, the use of FL was attested in the LSFb corpus. Utterance (7) in Figure 12, taken from Vandennitte's (2021) study on the use of CA in LSFb, illustrates one such use.

In (7), the signer vividly enacts their father-in-law feeling shocked. Part of this CA consists in depicting the father bringing his legs closer together and maintaining this position for a short while. It is likely that the dialogic and

more spontaneous nature of the studied exchanges favours the use of the lower half of the body to a more important extent than monologues. Nevertheless, the low frequency of use indicates that LSFBS signers and BF speakers rarely use their FL to enact referents. Without additional data, one may assume that, in both languages, effort minimisation constraints make it less likely for participants to use their FL for CA. Note that the participants in the LSFBS and FRAPÉ corpora were seated during the recordings. Other studies for which participants were standing during the recordings have addressed the use of FL for CA (e.g., Quinto-Pozos & Mehta 2010; Jantunen et al. 2020). This methodological set-up is likely to be best suited to the analysis of the lower half of the body.

(7)



LH		CA: DAD SHOCKED
RH	DAD	CA: DAD SHOCKED
Your dad looked petrified!		

Figure 11. Use of the lower half of the body for CA in LSFb (CLSFb, S060T5: 00:02:55.528 – 00:02:56.351)

While the present chapter has mostly provided the first comparative description of CA in LSFb and BF, within the frame of a comparative research on SLs and SpLs, more work needs to be carried out to improve our knowledge on the phenomenon. In addition to investigating a larger, more diverse set of languages, one should also ask how CA and other semiotics

share the ‘referential’ workload in different languages (Ferrara et al., 2022). As BF speakers clearly seem to use this strategy less frequently, it may be that they rely more on other (potentially more conventional) semiotics for reference. Future comparative research should also address the different possible explanations for observed similarities and differences across languages (Enfield 2014; Vandennitte, 2022). These go beyond differences in how these languages are produced and perceived. For instance, it is known that several social aspects of some signing communities, like patterns of language acquisition, distinguish them from other communities (Schembri et al., 2018). In addition, cultural specificities may also account for observed differences. For example, attitudes towards depiction and/or storytelling may (dis)favour the use of CA in SLs and SpLs (Earis & Cormier 2013).

5. Conclusion

The documentation and analysis of CA enriches language researchers’ understanding of reference since the phenomenon has been less studied than more conventional semiotics used for referential purposes. Yet, studies on both SpLs and SLs have shown that the strategy can be crucial in the process of meaning-making. One additional reason to investigate CA is that it is used variably across linguistic communities. In the present study, the phenomenon

has been compared in LSFB and Belgian French. The results provide the first ever quantitative comparison of CA in these languages. In addition to confirming that the phenomenon is more prominently found in LSFB than BF, corroborating the literature comparing SLs with ambient SpLs, the study gives a new insight into how LSFB signers and BF speakers enact referents. While it is clear that non-manuals are among the most frequently used articulators for CA in both LSFB and BF, differences arise between the two languages, notably in the use of facial expressions and of hand and/or arm movements. Future research, by investigating CA in more languages and using larger samples, should also ask which factors can account for differences across (signed and spoken) languages.

Acknowledgements

I would like to acknowledge the participants who contributed to the LSFB and FRAPé corpora.

Funding

I acknowledge the support from the Fonds de la Recherche Scientifique – FNRS (Research Fellow doctoral grant)

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