

RESEARCH OUTPUTS / RÉSULTATS DE RECHERCHE

Contrasting signed and spoken languages

GABARRO-LOPEZ, Silvia; Meurant, Laurence

Published in:

Languages in Contrast : International Journal of Contrastive Linguistics

DOI:

[10.1075/lic.00024.gab](https://doi.org/10.1075/lic.00024.gab)

Publication date:

2022

Document Version

Peer reviewed version

[Link to publication](#)

Citation for published version (HARVARD):

GABARRO-LOPEZ, S & Meurant, L 2022, 'Contrasting signed and spoken languages: Towards a renewed perspective on language', *Languages in Contrast : International Journal of Contrastive Linguistics*, vol. 22, no. 2, pp. 169-194. <https://doi.org/10.1075/lic.00024.gab>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Contrasting signed and spoken languages

Towards a renewed perspective on language¹

Sílvia Gabarró-López, Laurence Meurant

Stockholm University (Sweden) | University of Namur, NaLTT, LSFb-Lab (Belgium)

For years, the study of spoken languages, on the basis of written and then also oral productions, was the only way to investigate the human language capacity. As an introduction to this first volume of *Languages in Contrast* devoted to the comparison of spoken and signed languages, we propose to look at the reasons for the late emergence of the consideration of signed languages and multimodality in language studies. Next, the main stages of the history of sign language research are summarized. We highlight the benefits of studying cross-modal and multimodal data, as opposed to the isolated investigation of signed or spoken languages, and point out the remaining methodological obstacles to this approach. This contextualization prefaces the presentation of the outline of the volume.

Keywords: sign language linguistics, gesture studies, multimodality, signed/spoken languages, corpora, contrastive studies

1. Language, gesture and sign

If we ask a member of the general public what language is, they may answer that language is what is spoken. As limited as this answer may sound nowadays, this idea has been considered the defining feature of language by many scholars for a long time (Dresher and van der Hulst, to appear). As Kendon (2010: 48) puts it:

From Saussure onwards, linguists have almost always defined language in structural terms, and until the advent of studies of primary sign languages, it was almost always assumed that ‘language’ must be spoken to be ‘language’. As a consequence, very many writers use the words ‘language’ and ‘speech’ interchangeably.

¹ All the articles in this volume went through a double open peer-review process by a fellow contributor and by a scholar who did not participate in this special issue. We would like to thank Lindsay Ferrara, Tommi Jantunen, Terry Janzen, Anne-Marie Parisot, Darren Saunders, Eve Sweetser, Mieke Van Herreweghe and Amélie Voghel for the time devoted to provide insightful and constructive comments. Their reviews greatly improved the quality and coherence of this special issue. The authors are also especially grateful to David Quinto-Pozos for his careful review of the first draft of this introduction and for his valuable suggestions. Sílvia Gabarró-López is a Postdoctoral Researcher at Stockholm University and Laurence Meurant is a Research Associate of the Fonds de la Recherche Scientifique-FNRS at the University of Namur. This work was supported by the FoSpråk Programme under Grant SU FV-2845-17 and by the Fonds de la Recherche Scientifique – FNRS under Grant 1.B.181.22F (awarded to Sílvia Gabarró-López) and n°J.0131.21 (awarded to Laurence Meurant).

This approach to language is still widespread among the general public, and even accepted by some linguists.

1.1. A delayed revolution

Since the 1960s, two major discoveries have marked the field of linguistics. On the one hand, following Stokoe's (1960) seminal work on the structure of American Sign Language (ASL), it became clear that language was not only made up of vocally produced and audibly perceived languages. On the other hand, the development of discourse studies has highlighted, since the 1980s (Gumperz, 1982; Levinson, 1983; Kendon, 1986), that language use in interaction involves much more than strings of words. The status of gestural expression, in connection with what is said or even as an autonomous language system, became a subject of discussion, supported by the hypothesis of the gestural origin of language (Hockett, 1978). These two breakthroughs had the potential to fundamentally redefine the perimeter of what is considered language, and thus also the object and approaches of linguistics. However, it is obvious 60 years later that this revolution has been contained and delayed. Among the factors that hindered it, we will point to three.

The first one has to do with the history and legitimation of linguistics itself. The construction of linguistics as a scientific discipline at the beginning of the 20th century had as a corollary that language was mainly approached as a formal system, by highlighting the properties of languages that illustrate the abstract and economic character of such a system. From this perspective, the level of phonological analysis appeared to be exemplary and largely contributed to the construction of modern linguistics. Relying largely on written examples and samples – rarely from spontaneous productions – and on Indo-European languages, linguistics has essentially focused on the arbitrary and conventional components of language, at the levels of lexicon, morphology and syntax. This prevalent tendency has extended to the study of signed languages, which served in particular to test and illustrate the models of formal linguistics. In this context, gesture in general and aspects of simultaneity, iconicity and the use of space in signed languages, have long been regarded as non-linguistic phenomena (or, in the case of gestures, as paralinguistic and subordinate to speech) and have been disregarded by linguists. This restrictive approach to language, from which all kinesic actions are excluded (Kendon, 2010), has largely contributed to the fact that studies of spoken languages, signed languages and gesture have developed separately, rather than reforming language methods and knowledge together.

This leads to the second obstacle, which relates to the context in which signed languages have emerged on the linguistic scene. Despite the impact of Stokoe's 1960 publication, signed languages have long continued to struggle to be considered natural languages. Scholars first had to counter numerous misconceptions about signed languages, while also having to provide evidence about their linguistic status. Signed languages have long been considered an inferior communication system, pantomime, or a simple gestural transcoding of spoken languages that follows the conventions of speech. Other generally spread, even incompatible misconceptions about signed languages include the belief in the existence of one universal sign language, the existence of one signed language per country, or the idea that signed languages are naturally limited in terms of the

meaning they can convey. The underlying idea that nourished those misbeliefs in some circles, which was reinforced by the existence of motivated, iconic gestures, is that for not being spoken, signed languages do not share the abstraction of spoken languages, first of all at the level of phonology. Pressed by the urgency of restoring the place of signed languages in the education of deaf and hard-of-hearing students, and thus to have them recognized as fully-fledged languages, researchers have sought to highlight the analogies between signed languages and spoken languages in terms of their organization and grammatical functioning (Vermeerbergen, 2006; see also Section 2). One of the effects of this search for compatibility with spoken languages is that, rather than stimulating a new way of conceiving and understanding language, the specificities of signed languages have been downplayed or even ignored. As Kendon (2014: 2) claims, the efforts to minimize or ignore the expressive and iconic components of signed languages were related to the ideological valorization of what is “truly linguistic”, i.e. formal and systemic, vs. what is less so. Therefore, in the first development of the field after Stokoe’s 1960 work, the assimilation of signed languages with gesture, which was still essentially relegated to non-linguistic domains, may have been perceived as a threat for the legitimation of signed languages.

The third obstacle to the inclusion of signed languages and gesture in language studies comes from the limitations of the data available for research. Just as the study of oral language was only able to develop and enrich the field of linguistic knowledge when sound recording techniques became widespread, the opening-up of the study of language to the analysis of visual-gestural productions has been and still is dependent on the possibility of filming, recording and archiving audiovisual data. The use of these data by researchers is also subject to the pre-processing that is implied. The transcription and segmentation of productions, which are essential preliminary steps, are still mostly done manually, and are therefore time-consuming and difficult to finance. Although linguists' efforts to collect video corpora of language interaction (in spoken and signed languages) have multiplied since the end of the 2000s (see Section 2.2), the multimodal data available remain infinitely less numerous than written and oral data. Because of this low visibility and limited availability, the challenges of taking into account visual-gestural and multimodal components in the description and modelling of language may have remained on the margins of many linguists' concerns. It can only be noted that the amount of research including gesture and signed languages remains limited today if compared to the whole body of research on (written and oral) spoken language.

1.2. A new agenda

From the mid 1980s onwards, scholars have shown that spoken linguistic expression is intimately related to gestural expression (McNeill, 1992), and even that gesture can enlighten the nature of thought and utterance production as well as the processes that have given rise to the formal properties of language (Kendon, 1986). The relation of bodily actions (gestures, gaze, postures, body movements) to language and communication has been the object of interdisciplinary research (see Müller *et al.*, 2013 and 2014 for an overview of the theoretical and methodological grounds of this field, as well as of the current understanding of forms, functions of bodily movements across cultures and their intertwining with language and communication). In the vein of Peirce's semiotics (1955) and its

development in Clark (1996), it is now increasingly accepted that communicative practices are the product of composite utterances (Enfield, 2009) that consist of several semiotically different expressive modalities, and not exclusively of symbolic signs and structures whose meanings are determined by social convention. In discourse, meaning production results from three different modes of reference, signalled by acts of describing, indicating and depicting (Clark, 1996). Building on Clark's theory, Ferrara and Hodge (2018) demonstrate that description, indication and depiction combine both in signed and in spoken language interactions (see Meurant *et al.*, this volume, for an application of this idea to the topic of reformulation).

The joint and comparative study of spoken and signed languages opens up new avenues towards a more holistic understanding of language. It paves the way to new possibilities for understanding the different ways in which language activity is embodied according to the channels, articulators, modalities and senses that are available to the interactants (Perniss, 2018). We still know very little about how the communicative semiotic practices of signers and speakers compare (Müller, 2018; Ferrara and Hodge, 2018).

In order to advance this agenda, systematic crosslinguistic research encompassing multimodal data from speakers and signers of different languages needs to be conducted. This special issue aims to contribute to this endeavour by addressing different linguistic phenomena through the comparison of spoken and signed language pairs. Although our approach is to compare them on a par, we devote a part of this introduction to give some background about sign language linguistics (see Section 2), which may remain unknown for many readers, by summarising the stages of the history of sign language linguistics. Afterwards, we discuss the importance of studying signed and spoken language, as well as the methodological obstacles that explain why spoken vs. signed language comparative studies have not been developed before (Section 3). The last part of the paper is devoted to the outline of the volume (Section 4) and shows how the five studies that make up this special issue contribute to the largely unexplored field of signed vs. spoken contrastive (and corpus-based) linguistics.

2. Sign language linguistics

After being long ignored in the scientific sphere, signed languages attracted the interest of a few pioneering researchers. Bernard Tervoort's dissertation (1953) was the first research devoted to the study of signed language structure, in particular, of Dutch deaf children's productions. This breakthrough study has however received limited international recognition, so that Tervoort's name has remained relatively unknown in the history of the field. During the same period, an anthropologist called La Mont West wrote a dissertation about the difference between one-handed and two-handed signs in PISL (Northern America "Plains Indian Sign Language") (West, 1960). His work not only inspired some later scholars working on the phonology of ASL, but it also anticipated many present insights about signed languages. Despite his important contribution, West's dissertation was not known by other scholars of his time let alone by many sign language researchers at present (van der Hulst, to appear). William Stokoe is generally considered as the first scholar to have provided evidence about the linguistic status of sign languages. In line with the submorphemic segmentation hypothesis of West, which Stokoe discovered afterwards, he showed that the signs

of ASL can be broken down into meaningless components (location, handshape and movement) just as words can be broken down into phonemes (Stokoe, 1960). After this ground-breaking publication, the field has seen how scholars from other disciplines such as psycholinguists, psychologists, theoretical linguists, computational linguists, sociolinguists and many others have become interested and directed their investigations towards signed languages.

2.1. Stages of history of sign language research

The field of sign language linguistics has evolved rapidly. Its theoretical objectives as well as its ideological intentions have changed over time and could be roughly divided into three periods (cf. Vermeerbergen and Nilsson, 2018).² The first period, also called the “modern period” (Woll, 2003), begins in the middle of the last century. Because of the existing prejudices and misconceptions about signed languages, researchers had to provide evidence about their linguistic status by showing that despite the modality, signed languages shared most features that have been identified in spoken languages (Vermeerbergen, 2006). After Stokoe’s (1960) contribution, several studies followed showing that not only do signed languages have a phonological structure, but they also have a morphosyntactic structure as spoken languages do (Klima and Bellugi, 1979; Sandler and Lillo-Martin, 2006). As explained above (Section 1), the researchers’ approach was dominated by the endeavour to highlight the similarities between signed and spoken languages. Specific aspects such as the use of space, iconicity and simultaneity were minimized, or interpreted as surface differences informed by the same, highly rule-governed underlying structures as the ones described in spoken languages (Vermeerbergen and Nilsson, 2018). Research was mostly focused on ASL at that time, although some scholars, mainly from Europe, started to study their regional signed languages.

The second period or “post-modern period” (Perniss *et al.*, 2007) starts in the 1980s. In reaction to the previous trend, scholars focused on the specificities of the signed modality, and iconicity was given an important place in their works. They considered that theories, categories, terminologies and other linguistic tools developed by and for the description of spoken languages were not appropriate for describing the uniqueness of signed languages. This position resulted in a sign-language-specific approach (Vermeerbergen, 2006). Research expanded to other signed languages and saw a growth in the number of publications. Because of the incipient knowledge of some signed languages (mainly from the United States, Australia and Eastern Europe), signed languages were thought to be typologically more alike than spoken languages. The areas that were mostly explored were phonology, including phonetics and prosody, and morphosyntax (see Baker *et al.*, 2016 for a synthesis and the most relevant references). Discourse studies would come later, more or less at the time of the third period in the history of sign language linguistics, when appropriate data became available.

The third period starts at the end of the 1990s. It is characterized by an increasing interest in sign language typology (e.g. Zeshan 2004a, 2004b). Non-Western signed languages were added to the picture and their study revealed that signed languages might not be as typologically homogeneous as it was once

² This division into three periods does not imply that all publications on sign language linguistics follow the predominant theoretical objective of their time. Note also that there are contemporary books cited in what follows that synthesize previous works from the other periods.

thought (Perniss *et al.*, 2007). Research on the use of gesture combined with signs (e.g. Schembri, 2003; Liddell, 2003) and the first comparisons of signed and spoken languages (e.g. Baker *et al.* 2003, Vermeerbergen and Demey, 2007) came on the scene.

In comparison with the field of spoken language contrastive linguistics which experienced a revival in the same period thanks to the availability of large comparable corpora (Hasselgård, 2020), only small datasets were available to compare the productions of speakers and signers. The collection of the first modern signed language corpora started in 2004, which was itself a milestone in the field.

2.2. Corpus-based linguistics

After a period during which generative approaches were prevalent, the field has now broadened and different frameworks co-exist including rule-based, meaning-based and usage-based approaches (Vermeerbergen and Nilsson, 2018). There is also a growing interest in studying actual language use instead of elicited examples, which has become possible thanks to the collection of videotaped sign language data into (large-scale) corpora.

The sociolinguistic investigation of ASL, and especially studies on language contact in the American Deaf Community (Lucas and Valli, 1992; Lucas *et al.*, 2001; Quinto-Pozos, 2002), gave rise to the first large collections of natural sign language productions. The advent of new technologies has played a key role in the development of modern signed language corpora, that is, “a finite-size body of machine-readable text, sampled in order to be maximally representative of the language variety under consideration” (McEnery and Wilson, 2001: 32). At present, vast amounts of data can be stored in servers and made accessible online, and their content can be annotated in a machine-readable format, which allows for automatic search through the database.

The first projects aimed at collecting a machine-readable reference corpus for their national signed language, combining data, annotation and often translation, took place in Australia and Ireland. These initiatives were then followed by European countries such as The Netherlands, Germany and Sweden, and the United Kingdom. Nowadays, the list of countries is longer and includes not only other countries from Europe but also countries from other continents such as Asia and Africa (see Konrad, 2012).³ Thanks to software like ELAN (Sloetjes and Wittenburg, 2008) or iLex (Hanke *et al.*, 2010) the video data of such corpora are time-aligned with the annotations of the manual activity and, more often than not, the translation into written spoken language, both of which are considered the two stages of “basic annotation” (Johnston, 2016). Manual signs are annotated with ID-glosses, which are written labels (usually using the ambient spoken language) that are consistently used to identify signs (more precisely, lemma) throughout the corpus, regardless of their meaning in the context (Johnston, 2010). The basic annotation is followed by an “additional detailed annotation” including non-manual behaviour and clause-like units (Johnston, 2016) (see Figure 1). At present, sign language corpora projects are at some point in this primary processing stage. Johnston (2016) proposes secondary and tertiary

³ Although several corpus projects have started since the publication of the results of Konrad’s (2012) survey, this remains, to the best of our knowledge, the most updated list.

processing which include POS-tagging, clause-related tagging, syntactic relations, etc. Since the annotation of signed language is so time-consuming, getting through the different stages of annotation may still take years.

FIGURE 1 SHOULD BE INSERTED (NEAR) HERE

3. Spoken and signed language contrastive studies

Given the context in which the field of sign language linguistics has emerged and evolved over the past sixty years (see Section 2), the comparison of signed languages with spoken languages was hardly an object of study in its own right during the first periods of the discipline. Rather, it has essentially been used and directed to serve the theoretical intentions or pragmatic necessities underlying the researchers' search for legitimacy for signed languages and their field of research.

During the first period of the history of signed language research (see Section 2.1), the comparison served to prove the linguistic status of the signed languages, and was therefore reduced to those aspects which reflected the known features of the spoken languages. These common features and their systematicity may have been overestimated or amplified, such as the morphological system of aspect in ASL (Klima and Bellugi, 1979), to the neglect of the more expressive and iconic features of the language. When the pendulum swung back, in the second period of the history of the field, the most visible specificities of signed languages, such as the way they use space, simultaneity and iconicity, were given major importance in the description, and all the more so as they were the most compelling aspects to support the idea of the irreducibility of signed languages to spoken languages. In this effort to emphasize the uniqueness of signed languages, the comparative approach with spoken languages was declared to be vain and impossible.

3.1. The shortcoming of studying signed vs. spoken languages separately

Over time, this quest to prove either that signed and spoken languages are essentially similar, or that they are so different that they cannot be compared, has deprived linguistics of the opportunity to revisit its mainstream models, to provide them with a broader validity and to contribute to a more comprehensive description of language uses across modalities and cultures. Indeed, the divide between the domains of signed and spoken language research tends to emphasize the opposition between the formal system of language, primarily associated with spoken language, and the gradient or depictive forms of expression that have been claimed to be sign-specific. However, like signers, speakers can and do produce simultaneous structures (e.g. speaking and gesturing at the same time or using both hands at the same time), rely on iconicity (e.g. to represent the shape and size of objects with their hands and/or with voice modulations) and use space (e.g. to locate referents or draw paths) (Kendon, 2014).

The isolated investigation of signed vs. spoken language makes linguistics too short-sighted to the fundamentally heterogeneous nature of the systems and the semiotic resources through which speakers and signers convey meaning (Johnston *et al.*, 2007; Kendon, 2014). What these systems are, how they interrelate, how they are embodied and distributed across channels and

articulators, what functions they have and how they compare in spoken and signed interactions, still remain mostly unexplored.

A comprehensive description of language use should rather be able to identify and elaborate on the similarities and differences in the way speakers and signers make use of space, iconicity and simultaneity and how these components are interwoven with the systematic and formal components of language. The fundamental condition for conducting such a comparison is also that which most promises to reshape and renew our knowledge of language and linguistic practices: namely the requirement to approach both signed and spoken language productions as primarily multi-channel activities (Vermeerbergen and Demey, 2007). This can be illustrated with the topics that are tackled in this volume, namely the expression of viewpoint, the conversational use of holds and the process of reformulation.

The expression of a character's perspective or viewpoint was first extensively investigated in written productions as a major object of narratology (Niederhoff, 2013) and enunciative linguistics (Benveniste, 1966). Viewpoint is known to manifest across a large variety of lexical, morphological and syntactic markers, including person pronouns, verb tense and aspect (Ducrot, 1984). Afterwards, however, the consideration of oral and then multimodal data revealed that those lexico-grammatical markers of viewpoint are supported not only by prosody (Auchlin *et al.*, 2004), but also by a nonrandom use of visible and bodily actions, through which the specific viewpoint is depicted and enacted. The broadening of the research approach to the whole range of articulators involved and to the variety of semiotic resources mobilized in the construction of meaning has greatly enriched our knowledge of the phenomenon of point of view in spoken language and in discourse (Dancygier and Sweetser, 2012). Remarkably, it is also a subject that has already given rise to comparative work between signed and spoken language. Enactment, i.e. partial demonstration of behaviour, either linguistic (as constructed dialogue) or non-linguistic (as constructed action) (Ferrara and Johnston, 2014: 197), has been recognized as frequent in both signed and spoken languages. It has particularly been found in narratives and in contexts of reported speech in both modalities, even though it is more pervasive in sign languages (Earis and Cormier, 2013; Quinto-Pozos and Parrill, 2015). However, there is a lot more to study in order to understand how depictive enactment is intertwined with the grammatical markers and structures and how these intertwining systems, or semiotic resources, engage the various articulators, channels and senses that are available to the interlocutors, both in signed and spoken productions.

The analysis of oral discourse has led to the recognition of two types of pauses in speech, namely empty pauses and filled pauses. Empty pauses correspond to an interruption of the signal (a silence), whereas filled pauses are manifested by the production of a sound (e.g. “uhm”) that ‘fills’ this linguistic void. The comparison of spoken and signed languages, however, forces us to realize that, by focusing on the oral channel, spoken language linguistics has overestimated the ‘emptiness’ of the empty pauses (Notarrigo, 2017). Speakers indeed, just as signers, rely on manual movements and holds in order to manage discourse and conversation, including during interruptions of the speech flow. The study of these fundamental interactional devices certainly gains in sharpness and robustness if it takes into account the multiplicity of articulators brought into play

in the linguistic activity, and if it is based on the comparison of the ways they are used by signers and speakers.

Reformulation is a ubiquitous phenomenon that ensures the progression of discourse by relying on redundancy: an utterance is formulated first, and then said otherwise. The principle of reformulation is historically as well as theoretically related to the concept of paraphrase and therefore has essentially been conceived as a linear phenomenon, primarily explored through written texts: the first formulation precedes its re-formulation, a reformulation marker often making the reformulation structure explicit. When looking at signed productions, it appears that signers often combine lexical and grammatical forms with more iconic and depictive devices when they reformulate (Cuxac, 2007; Meurant and Sinte, 2016): they not only say but also show with their hands, body, gaze, head and face, what they are reformulating. Rather than concluding that this intertwining of semiotic resources and this combination of articulators is specific to signed language, it is much more revealing to turn to the multi-channel composition of the spoken productions, including the manual and non-manual movements that simultaneously contribute to the reformulation effort of the speaker. This approach facilitates a more holistic understanding of the concept of reformulation and of the contribution of the heterogeneous systems of meaning-making in signers' and speakers' discourse. It has already highlighted how adult-child interaction and teaching discourse is fundamentally organized on multi-channel and pluri-semiotic structures of reformulation (Rabatel, 2010).

3.2. Conducting (spoken vs. signed) contrastive studies on the basis of comparable multimodal data

As mentioned above, in the innovative power of taking multimodality into account also lies the main impediment to the development of spoken and signed language contrastive studies, namely the availability of data. This explains why the amount of spoken vs. signed studies remains scarce in comparison with the studies involving only spoken languages.

Contrastive studies involve the use of parallel and comparable corpora. The former is defined as “a collection of texts in one language and their translations into one or more languages” (Granger and Lefer, 2020: 167). Following Johansson (2007), the same authors define comparable corpora as “[multilingual] corpora that are compiled according to the same sampling method and are therefore matched in terms of register, domain, period, etc.” (Granger and Lefer 2020: 167). At present, parallel and comparable spoken language corpora of written data have been available for a while (e.g. Frankenberg-García and Santos, 2003; Hansen-Schirra *et al.*, 2012), whereas comparable corpora of unimodal oral spoken language data have only recently begun to be compiled (e.g. Xiao and McEney, 2010; Crible, 2019). These corpora have not only allowed the development of unimodal contrastive studies, but they have also allowed the comparison between written spoken language and oral spoken language (e.g. Thuilier, 2013; Kunz and Lapshinova-Koltunski, 2015) and between spoken language in its oral modality with signed language (Crible and Gabarró-López, 2021).

In spite of these advancements, the collection of multimodal spoken language corpora is not an extended practice yet (e.g. Paggio *et al.*, 2010; Brône and Oben, 2015; Hunyadi *et al.*, 2018). As for signed languages, there are an

increasing number of sign language corpus projects which are becoming a reality (see Section 2.2). However, these projects aim to document these endangered languages and to carry out corpus-based language descriptions (Hodge *et al.*, 2019). That is, with a few exceptions (Hodge *et al.*, 2019; Meurant *et al.*, ongoing), they have not been designed to compare a given signed language with its ambient spoken language.

Pioneering studies comparing signed and multimodal spoken data have been developed since the 2010s (Earis and Cormier, 2013; Barberà and Zwets, 2013; Quinto-Pozos and Parrill, 2015; Shaw, 2018; Fenlon *et al.*, 2019). To that end, authors have used different solutions to gather their data: data have been collected especially for the purpose of the study (Earis and Cormier, 2013; Shaw, 2018); new signed data have been recorded in order to complement an existing sample of spoken language (Quinto-Pozos and Parrill, 2015); data extracted from an existing sign language corpus have been compared to an existing multimodal corpus of its ambient spoken language (Barberà and Zwets, 2013); or data from an existing sign language corpus have been compared to publicly available videos of spoken language (Fenlon *et al.*, 2019).

The main issue with most comparative multimodal studies to date is the comparability of the recording conditions and the tasks (Granger and Lefer, 2020: 167; McEnery and Hardie, 2012; Hodge *et al.*, 2019). In order to achieve direct comparability, the Marqspat project, in a ground-breaking manner, collected narratives produced in four languages, namely LSQ (Quebec Sign Language), ASL, English and French. All participants were exposed to the same video sketches and to the same recording conditions. Three distinct technological systems were combined for the recordings, namely a digital camera, a motion tracking system and an eye and facial movement tracking system (Parisot *et al.*, 2008; Parisot and Saunders, this volume). For the same purpose of comparability, two projects are currently developing multimodal comparable corpora of speakers and signers that would enable the investigation of a large range of linguistic topics. The Auslan (Australian Sign Language) and Australian English Archive and Corpus (Hodge *et al.*, 2019) contains signed data produced by five pairs of deaf Auslan signers and spoken data produced by five pairs of non-signing hearing Australian English speakers equivalent in terms of age and gender. Deaf and hearing participants were asked to perform five tasks while they were being filmed (approximately 90 minutes of recordings for each pair). Another multimodal comparable corpus project is being developed in French-speaking Belgium (Meurant *et al.*, submitted). The *Corpus de Français Parlé* (FRAPÉ Corpus) (Meurant *et al.*, ongoing) is a corpus of multimodal spoken Belgian French. This corpus is being collected following the same battery of tasks and the same recording conditions as the LSFb (French Belgian Sign Language) Corpus (Meurant, 2015). The ongoing FRAPÉ Corpus includes 10 pairs of hearing non-signing speakers to date, with the aim of increasing this number to 50 pairs.

These initiatives still have a long way to go to equal existing unimodal comparable corpora. Comparable corpora of written data have large amounts of data which are extensively annotated at different linguistic levels. By contrast, multimodal comparable corpora are still in the preliminary stages of annotation, that is, the transcription of data. This difference is not only due to the youth of multimodal comparable corpora but also by the slow pace of the fully manual job of annotating multimodal data. Therefore, it is not possible yet to utilize large collections of natural texts that are mined using both quantitative and qualitative

analytical techniques (Hasselgård, 2020). This means that studies which draw on these large-scale comparable corpora (e.g. Parisot and Saunders, this volume; Lepeut, this volume; Meurant *et al.*, this volume) are still limited to a few signers and speakers and to a restricted number of discourse genres.

The development of multimodal datasets of spoken and signed languages and of contrastive corpus-based studies not only meet the need of “[widening] the range of languages” in this field (Johansson, 2012: 64 cited in Hasselgård, 2020) but also the challenge of having a more inclusive society in which the languages used by Deaf Communities are put on the same level as the languages used by the hearing majority. Multimodal corpora are “an invaluable source of cross-linguistic and cross-cultural information” (Hasselgård, 2020: 201), that is, they do not only provide us with insights about the language but also about the different cultural norms that guide social interactions in two communities that share the same territory. Finally, multimodal corpora and the contrastive approach “can lead us beyond what we knew or did not see so clearly” (Johansson, 2012: 65).

The development of contrastive studies between signed and spoken languages might have as significant an impact in the coming decades as the development of oral data has had on language knowledge since the 1980s. This volume aims to illustrate how studying spoken and signed language comparatively, rather than separately, opens new avenues for a renewed and more holistic perspective on language and language use.

4. Outline of the volume

This is the first special issue of *Languages in Contrast* which is devoted to contrastive signed and spoken language research.⁴ Our volume consists of five papers which compare the signed language used in a country or a region with the ambient spoken language (see Table 1). All in all, we have three signed languages: ASL, LSQ and LSFb, and two spoken languages: English (from different countries) and two varieties of French (from Quebec and from Belgium). Despite broadly shared misconceptions, signed languages do not respect country borders and are not gestural copies of their ambient spoken language (see Section 1.1). ASL is used in the United States and in Canada, whereas LSQ is only used in Quebec and LSFb in French-speaking Belgium. Although these last two signed languages are used in French-speaking regions, they have a different lexicon and different morphosyntactic properties.

Table 1. Summary of the main details of the papers that appear in this special issue.

⁴ Prior to this volume, one paper was published comparing additive relations in LSFb and spoken French (Crible and Gabarró-López, 2021), but no multimodal data was used for the latter language.

Authors	Languages	Country or region	Type of data
Quinto-Pozos, Parrill and Coons	ASL and English	United States	Narratives elicited from video stimuli
Janzen	ASL and English	Canada	Narratives embedded in conversations and narratives from a video blog
Parisot and Saunders	LSQ and French	Quebec	Narrative and descriptive productions of the Marqspat Corpus
Lepeut	LSFB and French	French-speaking Belgium	LSFB Corpus, FRAPé Corpus and CorpAGEst
Meurant, Sinte and Gabarró-López	LSFB and French	French-speaking Belgium	LSFB Corpus, FRAPé Corpus and CorMILS

All papers tackle aspects of signed and spoken discourse. They investigate three kinds of phenomena: enactment (see Section 3.1); sign and gesture holds; and reformulation structures. Based on the types of data that are compared, the papers can be roughly divided into three groups. On the one hand, the first two papers analyse datasets of (mostly) monological narratives which were collected for the purpose of studying multimodal language. On the other hand, the last two papers draw on dialogical narrative, argumentative and explanatory data extracted from two of the comparable corpora presented in the previous section, namely the LSFB Corpus and the FRAPé Corpus. Additionally, these two papers use data from a third corpus in order to supplement their results. The third article lies between those two groups: it uses monolingual narrative and descriptive discourses from the large-scale and multilingual (LSQ, ASL, English and French) Marqspat corpus.

The first three papers presented in Table 1 shed a comparative light on enactment, and more precisely on the processes by which the internal viewpoint of a character is expressed in signed and spoken language. Both signers and speakers engage bodily enactments when they are using language and producing meaning. In signed languages, signers can use their face, head, body, hands, and/or other non-manual cues to represent the actions, utterances, thoughts, feelings and/or attitudes of a referent. These enactment phenomena are referred to as constructed actions (Metzger, 1995), role shift (Padden, 1986), referential shift (Emmorey, 2002; Engberg-Pedersen, 1993), point of view predicate (Lillo-Martin, 1995), or perspective shift (Janzen, 2004) in the signed language literature. They correspond to what happens in spoken language when speakers use words, non-lexical sounds and visible gestures in order to represent dialogues, thoughts, actions and/or feelings of referents (Clark and Gerrig, 1990; Tannen, 1995; Streeck, 2002; De Brabanter, 2010). The change from an external to an internal perspective has been studied in spoken language linguistics as perspective change (Kendon, 2004; Parrill 2010) and co-verbal gesturing used along with this phenomenon is considered “character viewpoint gestures” (Bresse *et al.*, 2018).

David Quinto-Pozos, Fey Parrill and Caitie Coons compare data of American deaf users of ASL and hearing speakers of English in order to investigate how gestural material interfaces with linguistic grammar across language modalities. Character viewpoint gestures (CVPT), when they accompany spoken language, have been described as co-occurring with verbal predicates. In signed narratives, constructed actions (CA) co-occur or alternate with lexical material and with classifiers, functioning as a predicate and its argument(s). Both in speakers and signers, the regularity and the frequency of use of CVPT and CA as well as the degree to which they engage enactment has been described as variable. The authors examine these statements and the comparison of CVPT and CA according to their relation to syntax, by comparing videotaped retellings of short films by both signers and speakers. They hypothesize that signers might engage CA comparatively more than co-speech gesturers utilize CVPT in their retellings of video-based stimuli, because CA frequently function on their own and as entire syntactic constituents. This study also investigates the factors that influence the production of bodily enactment by speakers and signers and it examines the degree to which co-speech gesturers and signers engage in their enactments. This research offers a novel approach to this topic by using the concept of “gesture threshold”, borrowed from the Gestures as Simulated Action (GSA) model (Hostetter and Alibali, 2019). According to this model, the authors predict that, because of the motor simulations that are engaged when watching someone acting, this kind of stimuli lowers the gesture threshold or, in other words, fosters the use of gesture. The results show several differences between speakers and signers: in terms of variation among participants of each group (all signers produce enactments, but not all speakers), of frequency of enactments produced (more in signers’ productions) as well as in terms of degree of engagement in the enactment (signers produce more exaggerated enactments). But whether in spoken or signed productions, the enactment seems to be guided by grammatical properties of the language, even the grammatical contexts in which CA appear seem broader than for CVPT gestures. The authors suggest that the frequent use of gestural enactments alone in signed language, i.e. alternating (and not co-occurring) with conventional signs, also contributes to lowering the gesture threshold for enactment. Having become a way to provide very specific information about referents in signed language, gestural enactments play the roles of syntactic structures and share the responsibility of communication with conventional signs.

Terry Janzen compares the ways Canadian ASL signers and English speakers make use of space to express the subjective viewpoint of a character. The study is carried out within the framework of cognitive linguistics – resorting to the concepts of “embodied cognition” (Evans and Green, 2006) and “embodied language” (Gibbs, 2017) – which is particularly concerned with the synergies between linguistic and gestural aspects of utterances. According to this framework, our construal of reality, including viewpoint and intersubjectivity, is considered as shaped by the nature of our bodies, and our communication as grounded in our bodily experience. Analysing ASL and spoken multilingual English narrative productions, this study investigates how signers’ and speakers’ gestures, including verbal and facial gestures, eye gaze, body stance and body orientation, reflect the use of viewpoint space. The comparison also seeks to determine whether there are differences between the two language modalities in their perspective-taking system (MacWhinney, 2013). However, and this is the

keystone of the study, the author does not consider signed languages to be more embodied than spoken languages because they involve hands, face, head and torso. Rather, in line with Enfield's (2009) view of "composite utterances" and multimodality, he assumes that embodied language, and in particular the expression of viewpoint (perspective-taking and stance-taking), draws on interactions among lexico-syntactic structures and a large range of bodily gestures, both in signed and spoken language. The scrutinized examples show similarities in the way signers and speakers interact bodily with their gesture space, namely how their gesture space is put into perspective. The way they position referents and actors in space, as well as the way they orient their body reveals the taking of a specific (character's or signer's/speaker's) perspective on the described scene, the constructed action or constructed speech. Moreover, both signed and spoken narratives show examples of dual viewpoint gestures, namely the combination of a character and a narrator viewpoint or the representation of two different characters at the same time. Similarly, gestures, be they facial, manual or voice-quality-related gestures, convey information about the signer's or speaker's stance, i.e. attitude or assessment of the situation. This study demonstrates that visible (or auditory) gestures should certainly be taken into account among the range of viewpointing mechanisms that reveal both speaker's and signer's construal. It illustrates that, when focusing on the dynamicity of gestures and signs in action, rather than on singular gestures or signs, the division between gestural and lexical components decreases.

The third paper devoted to enactment by **Anne-Marie Parisot and Darren Saunders** echoes the conclusions of Terry Janzen's paper. The authors examine the grammatical and gestural marking of narrative perspective shifts in LSQ and in French in comparable discursive contexts. Three LSQ signers and three Quebec French speakers were invited to watch and retell four video sketches without words or signs. The four sketches represent two situations, namely a painter painting a still-life scene and a fitting in a shoe store, each one being shown in two versions: one with many lively interactions between characters (considered in the study as 'narrative') and one showing the sequence of events in a neutral and muted tone (considered as 'descriptive'). The study investigates whether the difference between discursive type (narrative vs. descriptive) and the language (LSQ vs. French) influence the duration, the frequency, the type and the distribution of perspective shift markers in the collected productions, according to the nature of the event being enacted (reported speech, thoughts, attitudes or actions). One of the interests and originalities of this study lies in the four types of markers that have been considered and systematically annotated for both languages: lexical (e.g. lexical identification of a character, or expressions like "she was like"), morphosyntactic (e.g. pronoun shift to first person, referential space shift), corporal (e.g. body position of the character, character's eye gaze, character's voice) and rhythmic markers (e.g. variation of speed of the hands, body and voice). In line with the results of Quinto-Pozos, Parrill and Coons (this volume), the comparison of LSQ and French data shows that character perspective is more present in the discourse of LSQ signers than of French speakers, and that the segments of character perspective shift are longer in LSQ than in French. In both languages, narrative discourse fosters a more frequent use of character perspective sequences than descriptive discourse. The study highlights that corporal and prosodic markers play a more important role in enactment than lexical and grammatical markers both in signers' and speakers' productions.

Moreover, the results show that each language shows a specific distribution of the corporeal markers. In both LSQ and French, the head, body and eye gaze are extensively used. But, interestingly, the use of hands to represent the hands of the character is more frequent in the French speakers' productions than in the signers' discourses, while the opposite pattern appears regarding the use of facial expressions. This study echoes that of Quinto-Pozos and colleagues (this volume) in the fact that it highlights how the usual descriptions of spoken languages, by not drawing on multimodal analyses and not mentioning the multimodal characteristics of the expression of perspective shifts, overlook a part of the characteristics of spoken discourse.

Alysson Lepage deals with a phenomenon that has received scant attention so far, both in signed and in spoken languages, i.e. the moments when hands are momentarily stopped in a hold. This study not only compares manual holds based on multimodal corpus data from a signed language, viz. LSFb and its ambient spoken language, viz. French, but also breaks new ground in that it explores the role of holds in the interactional practices of signers and speakers. While most linguistic work considers manual movements to express referential content, in tight connexion with speech and signing, the view adopted in this study, as called for by Müller (2018) and Kendon (2014), is to investigate manual holds as a mechanism contributing to the regulation of interaction. It shows how investigating a shared interactive practice in a signed and a spoken language strengthens the position for such phenomena to be part of language. The comparison is based on three hours of video-recorded material drawn from three multimodal corpora of LSFb and Belgian French discourses, namely the CorpAGEst Corpus (Bolly and Boutet, 2018), the LSFb Corpus (Meurant, 2015) and the ongoing FRAPé Corpus (see Section 3.2). The studied sample gathers the productions of 12 participants, eight in French and four in LSFb, in conversational tasks. The study reveals that both signers and speakers use manual holds in order to signal their willingness to keep the turn, notably while individually or collaboratively searching for a word, and that they also hold their hands when seeking a reaction from their addressee. The fine-grained analyses of the examples provided uncover the finely-tuned timing of the interaction between the signer/speaker's hold and the addressee's response. In other words, this study highlights how manual holds, such as other bodily behaviours, are neither performed nor released at random. Signers and speakers resort to them in order to show their shared, online understanding of their interactional conducts and to monitor the progress of interaction. These manual movements work as recognizable visible actions (Kendon, 2004) that interactants rely on. This paper reinforces the argument for developing a new perspective upon the embodied nature of language, extending beyond modality.

In the last paper, **Laurence Meurant, Aurélie Sinte and Silvia Gabarró-López** revisit the notion of reformulation from a contrastive and multimodal perspective. Reformulation is a discourse phenomenon which consists of saying something twice differently. Far from being useless or a shortcoming in discourse proficiency, reformulation is pervasive and contributes to discourse coherence and progression. Even more, as the authors show, it offers a window to the way speakers process and adjust their expression in discourse. Therefore, it constitutes an interesting standpoint to investigate and compare discourse in spoken and signed language, as well to better understand the specificities of interpreting between signed and spoken discourses. Reformulation has attracted the interest of

linguists since the emergence of pragmatics and the analysis of oral language in the 1980s. So far, it has been studied mainly on the basis of written or oral data. This article proposes to tackle the phenomenon of reformulation by comparing its uses in the productions of LSFB signers from the LSFB Corpus, of French speakers from the FRAPé Corpus and of interpreters working between those two languages from the CorMILS pilot project (Gabarró-López, 2018). The study indicates that reformulation is prevalent both in spoken and signed face-to-face communication. It also reveals that speakers and signers make extensive use of the combination of description and depiction in their reformulations, even if the presence of depiction is slightly more important in LSFB than in French. However, some differences appear according to the manner in which signers and speakers carry out reformulation: the distribution of the different articulators across description and depiction differs; and the arrangement (simultaneous or sequential) of the descriptive and depictive components offers more flexibility in LSFB than in French. The data also highlight a different distribution of the frequency of reformulations across genres in French and LSFB, which suggests that some genres may elicit more reformulation effort in one language than in the other. Interestingly, the study reveals that interpreters not only pay attention to reformulation as a material to be interpreted, but they also use it as a means to make their interpretation more idiolectal in the target language or to adjust their production to the time and cognitive constraints of interpreting. Reformulation structures appear to offer them a space for relief and adjustment. However, interpreters reformulate less than the speakers and the signers they interpret, and their reformulations involve less depiction than those of speakers and signers. Overall, this study shows that written and oral data only give partial access to what is at work when we reformulate. On the contrary, reformulation turns out to be a multimodal phenomenon, an interesting vantage point for studying the specificities of signers' and speakers' language practices across discourse genres and for better understanding the challenges of interpreting.

References

- Auchlin, A., Filliettaz, L., Grobert, A. and Simon AC. 2004. (En)action, expérience du discours et prosodie. *Cahiers de linguistique française*, 26, 217-249.
- Baker, A., van den Bogaerde, B., Pfau, R. and Schermer, T. 2016. *The Linguistics of Sign Languages. An Introduction*. Amsterdam: John Benjamins Publishing Company.
- Baker, A., Van Den Bogaerde, B. and Crasborn, O. 2003. *Cross-linguistic Perspectives in Sign Language Research*. Hamburg: Signum.
- Barberà, G. and Zwets, M. 2013. Pointing and Reference in Sign Language and Spoken Language: Anchoring vs. Identifying. *Sign Language Studies* 13(4): 491-515.
- Benveniste, E. 1966. *Problèmes de linguistique générale* (Vol. 1). Paris: Gallimard.
- Bressem, J., Ladewig, S. and Müller, C. 2018. Ways of expressing action in multimodal narrations – The semiotic complexity of character viewpoint depictions. In *Linguistic Foundations of Narration in Spoken and Sign Languages*, A. Hübl and M. Steinbach (eds), 223–249. Amsterdam: Benjamins.

- Bolly, C.T., and Boutet, D. 2018. The Multimodal CorpAGEst Corpus: Keeping an Eye on Pragmatic Competence in Later Life, *Corpora* 13(2): 1-39.
- Brône, G. and Oben, B. 2015. InSight Interaction: A multimodal and Multifocal Dialogue Corpus. *Language Resources & Evaluation*, 49: 195-214.
- Clark, H. 2016. Depicting as a Method of Communication. *Psychological review* 123(3): 324-347.
- Clark, H. and Gerrig, R. 1990. Quotations as Demonstrations. *Language*, 66: 764-805.
- Crible, L. 2019. *Discourse Markers and (Dis)fluency. Forms and Functions across Languages and Registers*. Amsterdam: John Benjamins Publishing Company.
- Crible, L. and Gabarró-López, S. 2021. Coherence Relations across Speech and Sign Language. A Comparable Corpus Study of Additive Connectives. *Languages in Contrast* 21(1): 58-81.
- Dancygier, B. and Sweetser, E. 2012. *Viewpoint in language: A multimodal perspective*. Cambridge University Press.
- De Brabanter, P. 2010. The Semantics and Pragmatics of Hybrid Quotations. *Language and Linguistics Compass* 4:107-120.
- Dresher, E. and van der Hulst H. (eds). *The Oxford Handbook of the History of Phonology*. Oxford: Oxford University Press.
- Ducrot O. 1984. *Le dire et le dit*. Paris : Minuit.
- Emmorey, K. 2002. 15. The Effects of Modality on Spatial Language: How Signers and Speakers Talk about Space. In *Modality and structure in signed and spoken languages*, R. P. Meier, K. Cormier, D. Quinto-Pozos (eds), 405-421. Cambridge: Cambridge University Press.
- Enfield, N. J. 2009. *The Anatomy of Meaning: Speech, Gesture, and Composite Utterances*. Cambridge: Cambridge University Press.
- Engberg-Pedersen, E. 1993. *Space in Danish Sign Language: The Semantics and Morphosyntax of the Use of Space in a Visual Language*. Hamburg: Signum.
- Evans, V. and Green, M. 2006. *Cognitive Linguistics: An Introduction*. Edinburgh: Edinburgh University Press.
- Fenlon, J., Cooperrider, K., Keane, J., Brentari, D. and Goldin-Meadow, S. 2019. Comparing Sign Language and Gesture: Insights from Pointing. *Glossa: A Journal of General Linguistics* 4(1). <https://doi.org/10.5334/gjgl.499>.
- Ferrara, L. and Johnston, T. 2014. Elaborating who's what: A Study of Constructed Action and Clause Structure in Auslan (Australian Sign Language). *Australian journal of linguistics*, 34(2): 193-215.
- Ferrara, L. and Hodge, G. 2018. Language as Description, Indication, and Depiction. *Frontiers in Psychology*, 9.
- Frankenberg-Garcia, A. and Santos, D. 2003. Introducing COMPARA, the Portuguese-English Parallel Corpus. In *Corpora in Translator Education*, F. Zanettin, S. Bernardini and D. Stewart (eds), 71-88. Manchester: St Jerome.
- Gabarró-López, S. 2018. *CorMILS: Pilot multimodal corpus of French – French Belgian Sign Language (LSFB) interpreters*. Institutionen för lingvistik, Stockholms universitet, Sweden, LSFB-Lab, Université de Namur, Belgium.

- Gibbs, R.W. Jr. 2017. Embodiment. In Barbara Dancygier (ed.), *Cambridge Handbook of Cognitive Linguistics*, B. Dancygier (ed), 449-462. Cambridge: Cambridge University Press.
- Granger, S. and Lefer, M.-A. 2020. Introduction. A Two-Pronged Approach to Corpus-Based Crosslinguistic Studies. *Languages in Contrast* 20(2): 167-183. <https://doi.org/10.1075/lic.00014.int>
- Gumperz, J. 1982. *Discourse Strategies*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511611834
- Hanke, T., König, L., Wagner, S. and Matthes, S. 2010. DGS Corpus & Dicta-Sign: The Hamburg Studio Setup. *Workshop Proceedings. W13. 4th Workshop on Representation and Processing of Sign Languages: Corpora and Sign Language Technologies*. La Valletta, Malta. European Language Resources Association. 106-109.
- Hansen-Schirra, S., Neumann, S. and Steiner, E. 2012. *Cross-Linguistic Corpora for the Study of Translations. Insights from the Language Pair English-German*. Berlin: De Gruyter. <https://doi.org/10.1515/9783110260328>
- Hasselgård, H. 2020. Corpus-based Contrastive Studies. Beginnings, Developments and Directions. *Languages in Contrast* 20(2): 184-208. <https://doi.org/10.1075/lic.00015>.
- Hockett, C. F. 1978. In search of Jove's brow. *American Speech* 53: 243-313.
- Hodge, G., Sekine, K., Schembri, A. and Johnston, T. 2019. Comparing Signers and Speakers: Building a Directly Comparable Corpus of Auslan and Australian English. *Corpora* 14(1): 63-76.
- Hostetter, A. and Alibali, M. W. 2019. Gesture as Simulated Action: Revisiting the Framework. *Psychonomic Bulletin & Review* 26: 721-752.
- Hunyadi, L., Váradi, T., Szekrényes, I., Kovács, G., Kiss, H. and Takács, K. 2018. Human-Human, Human-Machine Communication: on the HuComTech Multimodal Corpus. *Proceedings of the 7th CLARIN Annual Conference*. Pisa, Italy. 6-11.
- Janzen, T. 2004. Space Rotation, Perspective Shift, and Verb Morphology in ASL. *Cognitive Linguistics* 15(2): 149-174.
- Johansson, S. 2007. *Seeing through Multilingual Corpora. On the Use of Corpora in Contrastive Studies*. Amsterdam: John Benjamins Publishing Company. <https://doi.org/10.1075/scl.26>
- Johansson, S. 2012. Cross-Linguistic Perspectives. In *English Corpus Linguistics: Crossing Paths*, M. Kytö (ed.), 45-68. Amsterdam: Rodopi.
- Johnston, T., Vermeerbergen, M., Schembri, A. and Leeson, L. 2007. Real data are messy: considering cross-linguistic analysis of constituent ordering in Australian sign language (Auslan), Vlamse Gebarantaal (VGT), and Irish sign language (ISL). In *Visible variation: comparative studies on sign language structure*, P. Perniss, R. Pfau and M. Steinbach (eds), 163-208. Berlin: Mouton de Gruyter.
- Johnston, T. 2010. From Archive to Corpus: Transcription and Annotation in the Creation of Signed Language Corpora. *International Journal of Corpus Linguistics* 15(1): 106-131.
- Johnston, T. 2016. *Auslan Corpus Annotation Guidelines*. Macquarie University, Sydney; La Trobe University, Melbourne. https://media.auslan.org.au/attachments/Auslan_Corpus_Annotation_Guidelines_November2016.pdf [last accessed 7 November 2021].

- Kendon, A. 1986. Some Reasons for Studying Gesture. *Semiotica*, 62(1-2): 3-28. <http://sci-hub.tw/10.1515/semi.1986.62.1-2.3>
- Kendon, A. 2004. *Gesture: Visible Action as Utterance*. Cambridge: Cambridge University Press.
- Kendon, A. 2010. Language and Gesture: Unity or Duality? In *Language and Gesture*, D. McNeil (ed), 47-63. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511620850.004>
- Kendon, A. 2014. Semiotic Diversity in Utterance Production and the Concept of 'Language'. *Philosophical Transactions of the Royal Society B* 369: 20130293. <https://doi.org/10.1098/rstb.2013.0293>.
- Klima, E. and Bellugi, U. 1979. *The signs of language*. Cambridge, MA: Harvard University Press.
- Konrad, R. 2012. *Sign Language Corpora Survey* [June 2012 version]. Retrieved 23-08-21 from <http://www.sign-lang.uni-hamburg.de/dgs-korpus/index.php/sl-corpora.html>
- Kunz, K. and Lapshinova-Koltunski, E. 2015. Crosslinguistic Analysis of Discourse Variation across Registers. *Nordic Journal of English Studies* 14(1): 258-288.
- Levinson, S. C. 1983. *Pragmatics*. Cambridge: Cambridge University Press.
- Liddell, S. 2003. *Grammar, Gesture, and Meaning in American Sign Language*. Cambridge: Cambridge University Press.
- Lillo-Martin, D. 1995. The Point of View Predicate in American Sign Language. In *Language, gesture and space*, K. Emmorey and J. Rilley (eds), 155-170. Mahwah, NJ: Lawrence Erlbaum Associates.
- Lucas, C. and Valli, C. 1992. *Language Contact in the American Deaf Community*. Leiden: Brill.
- Lucas, C., Bayley, R. and Valli, C. 2001. *Sociolinguistic Variation in American Sign Language*. Washington, D.C.: Gallaudet University Press.
- MacWhinney, B. 2013. The Emergence of Language from Embodiment. In *The Emergence of Language*, B. MacWhinney (ed), 213-256. Mahwah, NJ: Lawrence Erlbaum.
- McEnery, T. and Hardie A. 2012. *Corpus Linguistics: Method, Theory and Practice*. Cambridge: Cambridge University Press.
- McEnery, T. and Wilson, A. 2001. *Corpus Linguistics* (2nd ed.). Edinburgh: Edinburgh University Press.
- McNeill, David. 1992. *Hand and Mind. What Gestures Reveal about Thought*. Chicago, IL: The University of Chicago Press.
- Meurant, L. 2015. *Corpus LSFb. First Digital Open Access Corpus of Movies and Annotations of French Belgian Sign Language (LSFB)*. University of Namur, LSFb-Lab. <http://www.corpus-lsfb.be>
- Meurant, L., Lepeut, A., Tavier, A., Vandenitte, S., Lombart, C., Gabarró-López, S. and Sinte, A. Ongoing. *The Multimodal FRAPé Corpus: Towards Building a Comparable LSFb and Belgian French Corpus*.
- Meurant, L., Lepeut, A., Vandenitte, S. and Lombart, C. Submitted. The Multimodal FRAPé Corpus: Towards building a comparable LSFb and Belgian French Corpus. *Corpora*.
- Metzger, M. 1995. Constructed Dialogue and Constructed Action in American Sign Language. In *Sociolinguistics in Deaf Communities*, C. Lucas (ed.), 255-271. Washington, DC: Gallaudet University Press.

- Niederhoff, B. 2013. Perspective – Point of View. In *The living handbook of narratology*, P. Hühn et al. (eds). Hamburg: Hamburg University. <http://www.lhn.uni-hamburg.de/article/perspective—point-view>
- Müller, C., Cienki, A., Fricke, E., Ladewig, S., McNeill, D. and Tassendorf, S. (eds). 2013. *Body – Language – Communication, Volume 1*. Berlin, Boston: De Gruyter Mouton. <https://doi.org/10.1515/9783110261318>
- Müller, C., Cienki, A., Fricke, E., Ladewig, S., McNeill, D. and Tassendorf, S. (eds). 2014. *Body – Language – Communication, Volume 2*. Berlin, Boston: De Gruyter Mouton. <https://doi.org/10.1515/9783110302028>
- Müller, C. 2018. Gesture and Sign: Cataclysmic Break or Dynamic Relations? *Frontiers in Psychology* 9, 1651.
- Notarrigo, I. 2017. *Marqueurs de (dis)fluence en langue des signes de Belgique francophone*. PhD Thesis. Université de Namur.
- Padden, C. 1986. Verbs and Role-Shifting in American Sign Language. *Proceedings of the Fourth National Symposium on Sign Language Research and Teaching*, C. Padden (ed), 44-57. Silver Spring, MD: National Association of the Deaf.
- Parisot, A.-M., Pilarski, A., Richer-Lemay, L., Rinfret, J. and Voghel, A. 2008. Description de la Variation du Marquage Spatial en Langue des Signes Québécoise (LSQ). Paper presented at the 76e Congrès de l'Acfas. Québec, Canada, 5-9 May 2008.
- Paggio, P., Allwood, J., Ahlsén, E. and Jokinen, K. 2010. The NOMCO Multimodal Nordic Resource: Goals and Characteristics. *Proceedings of the Proceedings of the 6th international Language Resources and Evaluation Conference LREC 2010*, Valetta, Malta, May 19-21.
- Parrill, F. 2010. Viewpoint in Speech-Gesture Integration: Linguistic Structure, Discourse Structure, and Event Structure. *Language and Cognitive Processes* 25(5): 650-668.
- Peirce, C.S. 1955. *Philosophical writings of Peirce*. Mineola, Dover.
- Perniss, P. 2018. Why We Should Study Multimodal Language. *Frontiers in Psychology* 9:1109. Doi: 10.3389/fpsyg.2018.01109
- Perniss, P. M., Pfau, R. and Steinbach, M. (eds). 2007. *Visible Variation: Cross-Linguistic Studies in Sign Language Structure*. Berlin: Mouton de Gruyter.
- Quinto-Pozos, D. 2002. *Contact Between Mexican Sign Language and American Sign Language in Two Texas Border Areas*. PhD Thesis, University of Texas at Austin.
- Rabatel, A. 2010. Pour une approche intégrée des reformulations pluri-sémiotiques en contexte de formation : apprendre en reformulant et en resémiotisant documents iconiques, gestes et actions. In *Les reformulations pluri-sémiotiques en contexte de formation*, A. Rabatel (ed), 7-24. Besançon: Presses universitaires de Franche-Comté.
- Sandler, W. and Lillo-Martin, D. 2006. *Sign Language and Linguistic Universals*. Cambridge: Cambridge University Press.
- Schembri, A. 2003. Rethinking ‘classifiers’ in signed languages. In *Perspectives on Classifier Constructions in Sign Languages*, K. Emmorey (ed.), 3-34. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Shaw, E. 2018. *Gesture in Multiparty Interaction*. Washington: Gallaudet University Press.
- Sloetjes, H. and Wittenburg, P. 2008. Annotation by Category-ELAN and ISO DCR. *Proceedings of the 6th international Language Resources and*

- Evaluation Conference LREC 2008*. Marrakech, Morocco, 28-30 May 2008. European Language Resources Association.
- Streeck, J. 2002. Grammars, Words, and Embodied Meanings: on the Uses and Evolution of *So* and *Like*. *Journal of communication* 52: 581-596.
- Stokoe, W. C. 1960. Sign Language Structure: An Outline of the Visual Communication Systems of the American Deaf. *Studies in Linguistics: Occasional papers* 8.
- Tannen, D. 1995. Waiting for the Mouse: Constructed Dialogue in Conversation. In *The Dialogic Emergence of Culture*, D. Tedlock and B. Mannheim (eds), 198-217. Urbana, Chicago: University of Illinois Press.
- Tervoort, B. 1953. *Structurele Analyse van Visueel Taalgebruik binnen een Groep Dove Kinderen [Structural analysis of visual language use within a group of deaf children]*. Noord-Hollandsche Uitgevers Maatschappij, Amsterdam.
- Thuilier, J. 2013. Syntaxe du Français Parlé vs. Écrit : le Cas de la Position de l'Adjectif Épithète par Rapport au Nom. *TIPA. Travaux interdisciplinaires sur la parole et le langage* 29. <https://doi.org/10.4000/tipa.1066>
- van der Hulst, H. To appear. The (early) history of sign language phonology. In *The Oxford Handbook of the History of Phonology*, E. Drescher and H. van der Hulst (eds). Oxford: Oxford University Press.
- Vermeerbergen, M. 2006. Past and Current Trends in Sign Language Research. *Language & Communication* 26:168-92.
- Vermeerbergen, M. and Demey, E. 2007. Sign+ Gesture= Speech+ Gesture. In *Simultaneity in signed languages: form and function*. In *Simultaneity in signed languages: Form and function*, M. Vermeerbergen, L. Leeson and O. A. Crasborn (eds), 257-282. Amsterdam: John Benjamins Publishing.
- Vermeerbergen, M. and Nilsson, A.L. 2018. Introduction. In *A Bibliography of Sign Languages, 2008-2017*, A. Aarssen, R. Genis and E. van der Veken (eds). Leiden: Brill.
- West, L. M. 1960. *The sign language analysis; vol. I and II*. PhD Thesis, University of Indiana.
- Woll, B., 2003. Modality, Universality, and the Similarities among Sign Languages: an Historical Perspective. In *Cross-linguistic Perspectives in Sign Language Research*, A. Baker, B. van den Bogaerde and O. Crasborn, O. (eds), 17-27. Hamburg: Signum.
- Xiao, R. and T. McEnery. 2010. *Corpus-Based Contrastive Studies of English and Chinese*. London: Routledge.
- Zeshan, U. 2004a. Hand, head, and face: Negative constructions in sign languages. *Linguistic Typology* 8, 1-58.
- Zeshan, U. 2004b. Interrogative constructions in sign languages: Cross-linguistic perspectives. *Language* 80, 7-39.

Author's address

Laurence Meurant
 University of Namur, NaLTT–LSFB-Lab
 rue de Bruxelles, 61
 5000 Namur
 Belgium
laurence.meurant@unamur.be

Introduction (S. Gabarró-López & L. Meurant) Figure

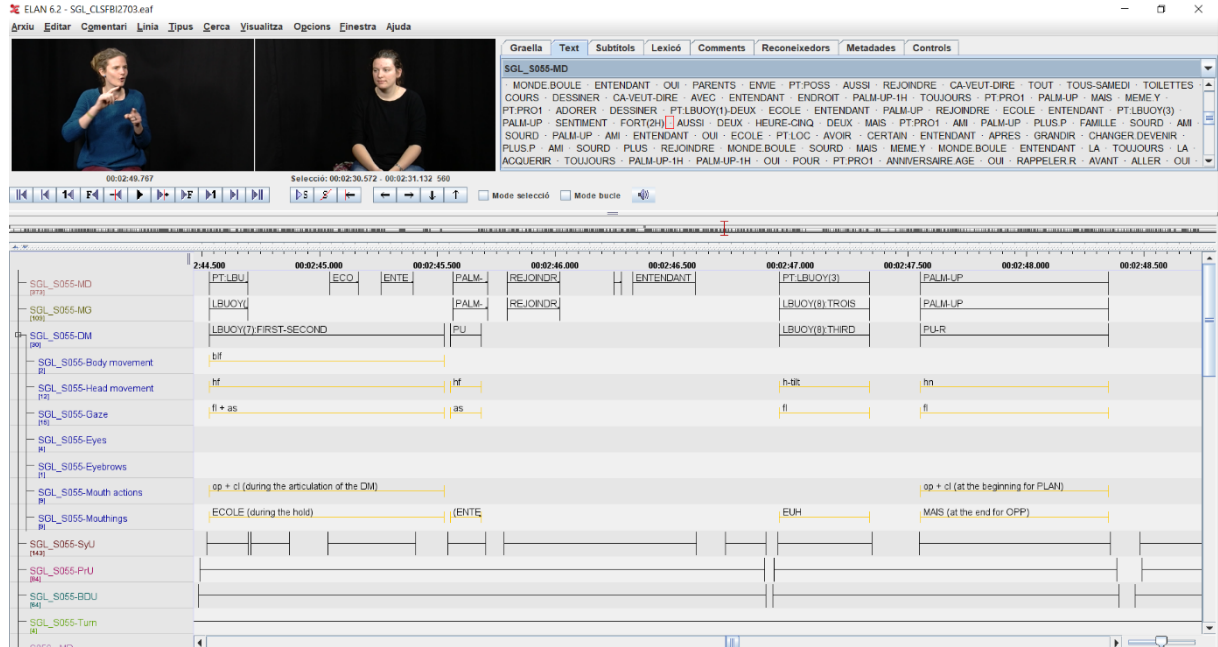


Figure 1. Screenshot of an ELAN file from the LSFb Corpus containing basic and additional detailed annotation.