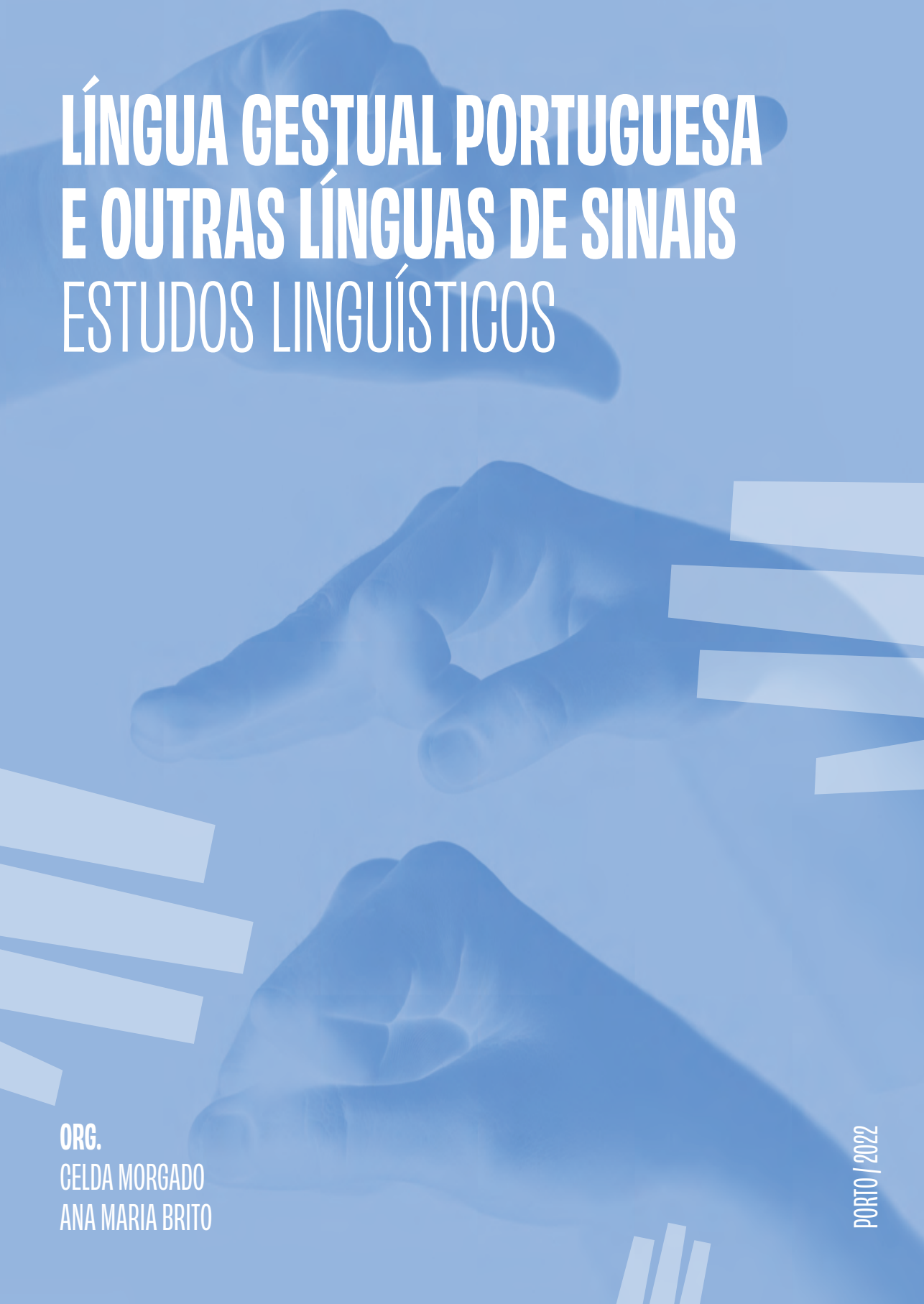
LÍNGUA GESTUAL PORTUGUESA E OUTRAS LÍNGUAS DE SINAIS

ESTUDOS LINGUÍSTICOS



ORG.
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Introdução

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O livro agora editado contém uma seleção de textos apresentados no *III Meeting on Morphosyntax of Portuguese Sign Language and other sign languages* / *III Encontro sobre Morfossintaxe da LGP e de outras línguas de sinais,* organizado pelo Centro de Linguística da Universidade do Porto (CLUP) e pelo Centro de Investigação e Inovação em Educação (inED) da Escola Superior de Educação do Politécnico do Porto (ESE/IPP), que decorreu nos dias 6 e 7 de fevereiro de 2020, nas instalações da Faculdade de Letras da UP e da Escola Superior de Educação do IPP.

Esta foi já a terceira edição de um encontro internacional/transcontinental que se realiza por tradição em coorganização das instituições envolvidas. São dois dias de trabalho e de reflexão, partilha e discussão, em torno de temas de diferentes línguas e vários pontos de vista científicos e investigativos sobre as línguas gestuais[1] e as suas propriedades e estruturas, em diferentes áreas da gramática e das línguas. Além de ter acolhido investigadores de Portugal, Brasil, Espanha e Itália, o Encontro contou com duas conferencistas convidadas, a Prof. Meltem Kelepir, da Universidade Boğaziçi, de Istambul, Turquia, e a Prof. Ana Mineiro, da Universidade Católica Portuguesa, Lisboa, ambas com um currículo vasto sobre línguas gestuais.

Se as línguas gestuais são, desde William Stokoe, consideradas línguas naturais, permanecem muitas dúvidas acerca da sua organização. Durante algumas décadas do

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[1] Utilizaremos os termos 'línguas gestuais' e 'gesto' como equivalentes, respetivamente, a 'línguas de sinais' e 'sinal', por serem os termos selecionados e utilizados pela Comunidade Surda Portuguesa, ainda que na investigação linguística de várias línguas do mundo sejam preferidos os segundos termos.

séc. XX, os linguistas tentaram mostrar que as línguas gestuais são governadas pelos mesmos princípios que regem as línguas orais, princípios da Gramática Universal. Nas últimas décadas, porém, o foco tem incidido em propriedades específicas relacionadas com a modalidade manuovisual das línguas gestuais e com a simultaneidade de elementos manuais e não manuais, entre outros aspetos. As duas perspetivas são importantes e o desafio colocado aos linguistas é descobrir o que é universal e o que é dependente da modalidade específica das línguas gestuais, o que torna a investigação tão desafiadora e tão estimulante.

Este livro abrange temas de áreas já mais estudadas das línguas gestuais e em particular da Língua Gestual Portuguesa (LGP) – o léxico e a fonologia –, mas inclui também áreas menos exploradas, como a sintaxe e a semântica, além do domínio mais vasto da variação e da mudança.

Enquanto o léxico das línguas gestuais está muito estudado em diferentes perspetivas, há muitas dimensões semânticas destas línguas ainda por analisar e compreender. Uma dessas dimensões é a quantificação. Os estudos sobre quantificação em línguas gestuais são raros e há questões difíceis de responder: como é que em diferentes línguas gestuais se exprime a quantificação universal (*todos os x*) e a quantificação existencial (*alguns x*)? Como é que estas línguas exprimem a definitude e a indefinitude?

No seu texto, Meltem Kelepir estuda o papel do espaço para a expressão da quantificação indefinida exclusiva e inclusiva, tendo como ponto de partida a Língua de Sinais Turca (TİD); nesta língua, o gesto para UM, quando gestualizado em diferentes espaços, resulta em diferentes interpretações. Há formas indefinidas exclusivas (que excluem pelo menos o interlocutor e outros indivíduos), em particular um gesto para OUTRO, que pode funcionar como um indefinido exclusivo com sentido de "alguém" e que pode ser usado sozinho ou combinado com outras formas. E há um gesto para um indefinido inclusivo que inclui o interlocutor e uma terceira pessoa ("ele" / "ela"). Não existindo um gesto para dar o valor de OUTRO inclusivo, parece, assim, que o valor exclusivo é o valor não marcado para os indefinidos na TİD, o que vai ao encontro da proposta de Cormier (2005)[2] para os pronomes pessoais na Língua de Sinais Americana (ASL).

Uma das questões centrais a explorar nas línguas gestuais é a organização das frases simples, nos seus diferentes tipos, e a organização das frases complexas, incluindo a ordem de palavras e a maneira como estas línguas exprimem a estrutura argumental dos verbos, problemas típicos abordados em sintaxe. Neste livro, vários textos analisam estes temas, embora de maneiras muito distintas.

Alessandra Checchetto, Caterina Donati e Carlo Cecchetto descrevem as frases exclamativas parciais na Língua de Sinais Italiana (LIS) a partir de um corpus semiespontâneo, com informantes Surdos, a quem foi pedido não só a descrição de desenhos que provocariam reações positivas e negativas de surpresa, como também juízos de gramaticalidade perante tais produções. A análise permitiu observar que as exclamativas parciais na LIS têm como principal marca as sobrancelhas franzidas, tal como nas interrogativas parciais, o que permite a conclusão de que as sobrancelhas

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[2] Cormier, Kearsy (2005). Exclusive pronouns in American Sign Language. In Filimonova, E. (ed.), Clusivity: *Typology and case studies of inclusive-exclusive distinction*, 241-268. Amsterdam: John Benjamins.

franzidas são a expressão não-manual de um traço *wh*, o traço comum às interrogativas e às exclamativas parciais. Tal proposta permite aos autores elaborar um tratamento formal das exclamativas parciais na linha de Zanuttini e Portner (2003)[3] e que é minimamente diferente da análise das interrogativas *wh*.

Morgado e Brito estudam as frases predicativas na Língua Gestual Portuguesa (LGP) com adjetivos e com locativos; os dados recolhidos, quer em produções provocadas em quatro informantes Surdos, quer através da recolha no dicionário *Spread the Sign*, permitiram concluir que há cópula nula com adjetivos, com predicados de indivíduo e com predicados de estádio, ao contrário dos predicados locativos, que são produzidos com um gesto para o verbo, seguido ou antecedido de um índex locativo e, em várias construções, acompanhado pelo *mouthing* /lala/. Esta constatação justificou, por parte das autoras, uma análise comparativa entre línguas orais de cópula nula e outras línguas gestuais, em particular a ASL, a Língua de Sinais Brasileira (LIBRAS), a Língua de Sinais Espanhola (LSE) e a Língua de Sinais Finlandesa (FinSL).

A ordem de palavras, como já dissemos, é também um aspeto por explorar no que diz respeito às línguas gestuais, sendo que alguns investigadores defendem que as línguas gestuais terão maior flexibilidade na ordem de palavras/sintagmas do que as línguas orais; mas, por outro lado, há linguistas que, comparando diferentes línguas gestuais, advogam em favor de padrões de ordens dominantes.

Mariana Martins, Hope Morgan e Victoria Nyst estudaram a ordem de palavras e a estrutura argumental na Língua Gestual da Guiné-Bissau (LGG), uma língua gestual emergente, e, portanto, ainda não completamente estabilizada. Os dados foram obtidos a partir de uma tarefa de elicitação, com 12 gestuantes Surdos, que envolveu a observação de vídeos que captavam eventos transitivos. A análise permitiu perceber que os argumentos dos verbos são indexados no espaço, mas a direcionalidade dos verbos nem sempre tem em conta a localização dos argumentos. A frase apresenta o verbo em posição final, mas poderá haver diferenças que se relacionam com traços de animacidade dos argumentos: o padrão SOV surge quando o sujeito é não humano e o padrão OSV surge com dois argumentos humanos, o que permite encontrar semelhanças com outras línguas gestuais emergentes, nomeadamente as línguas gestuais que surgem em aldeias (*village SL*).

Uma das questões sempre colocadas sobre o léxico das línguas gestuais é a de saber até que ponto os gestos/sinais usados são icónicos, tentando aproximar-se da forma dos objetos, ou se são arbitrários, com uma relação cada vez mais distante dessa forma.

Rosana Constâncio e Jorge Bidarra, a partir de vários exemplos da LIBRAS, discutem esta questão, considerando que, em línguas gestuais, e numa perspetiva funcional, a iconicidade não pode ser considerada um fenómeno antagónico da arbitrariedade, uma vez que, se certas partes dos gestos podem ser icónicas, outras partes não o são. Deste modo, os autores consideram que as duas dimensões caracterizam a LIBRAS, tal como qualquer outra língua natural.

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[3] Zanuttini, Raffaella & Paul Portner (2003). Exclamative Clauses: At the Syntax-Semantics Interface. *Language*. 79: 39-81.

Ana Mineiro discute igualmente esta questão a partir da análise de como o espaço sintático, espaço onde os gestos de uma língua gestual são produzidos, se vai modificando numa língua emergente, a Língua Gestual de São Tomé e Príncipe (LGSTP). O estudo realizado permitiu observar como, de um espaço amplo a nível de utilização de todo o corpo e da produção dos gestos afastados do gestuante, se vai chegando a gestos cada mais próximos do tronco e que diminuem em termos da área espacial ocupada, num processo que a autora considera ser universal, neurolinguisticamente motivado, de procura da economia linguística e de menor dispêndio de energia motora na articulação do gesto e na utilização do espaço.

Marta Morgado e Victoria Nyst estudam também duas línguas gestuais de aldeias ("village sign languages"), uma usada em Adamorobe (AsaSL), Gana, e outra em Bouakako (LaSiBo), Costa do Marfim. A primeira língua existe há várias gerações e tem atualmente trinta falantes. A segunda é emergente e tem sete falantes. Sendo línguas de aldeia, não sofreram qualquer influência da escola nem de outras línguas gestuais. A partir da produção de histórias sobre ataques de animais, nomeadamente cobras, o objetivo do estudo foi o de perceber como os movimentos de boca são usados para exprimir o tamanho e a forma. Algumas semelhanças e diferenças foram encontradas nestas duas línguas: na LaSiBo o tamanho pequeno e a forma circular foram expressas sobretudo por gestos do corpo e pouco por movimentos da boca; os movimentos de boca foram mais numerosos na AsaSL.

Como qualquer língua natural, as línguas gestuais estão preparadas para construir textos e discursos, pelo uso de estratégias narrativas, processos de referenciação e retoma de referentes.

Leidiani da Silva Reis e Jorge Bidarra estudam processos referenciais em duas línguas gestuais, a LIBRAS e a LSE, a partir de dois *corpora* paralelos compostos por narrativas produzidas por seis indivíduos Surdos, três brasileiros e três espanhóis, tendo como pano de fundo a visão de um vídeo que narra a história das peras (*Pear Film*). A pesquisa permitiu mostrar que, embora cada língua use as suas próprias estratégias narrativas, os processos de referência são semelhantes, uma vez que os gestuantes usaram, recorrentemente, mecanismos de introdução de referentes e de retoma através de construções complexas constituídas por expressões deíticas e expressões anafóricas, a que os autores chamaram construções Deítico-Anafóricas.

Como línguas naturais, as línguas gestuais estão também sujeitas a variação e a mudança.

Neide Gonçalves, Mara Moita e Ana Mineiro decidiram estudar essas dimensões em duas produções do conto "Capuchinho Vermelho", realizadas por dois gestuantes Surdos em momentos temporais diferentes, em 1992 e em 2019. As produções foram elicitadas com recurso a partir da visualização de imagens e foram gravadas. Os principais resultados apontam para um ligeiro aumento, em 2019, do uso da mão não dominante com papel simétrico na articulação do gesto e um aumento do uso de expressões faciais com valor fonológico. Observou-se, ainda, que a configuração é o parâmetro alterado em todos os itens que sofreram variação fonológica. Do ponto de vista do léxico, dos 20 itens-chave analisados apenas três sofreram variação lexical.

Os textos agora publicados foram objeto de avaliação por pares e aproveitamos esta ocasião para, mais uma vez, renovar os nossos agradecimentos aos revisores.

Agradecemos às instituições envolvidas nesta publicação e todo o seu contributo, muito em especial ao CLUP e à FCT, pelo financiamento desta publicação.

Queremos ainda agradecer aos colegas da ESE/IPP que têm colaborado connosco na organização dos encontros sobre a morfossintaxe da LGP, que tanto têm contribuído para o avanço do conhecimento sobre as Línguas Gestuais e para a constituição de uma rede de conhecimento capaz de continuar a realizar iniciativas nesta área.

Porto, julho de 2021
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Introduction

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The book we are now introducing contains a selection of texts presented at the *III Meeting on Morphosyntax of Portuguese Sign Language and other sign languages,* organized by the Centre of Linguistics of the University of Porto (CLUP) and by the Centre for Research and Innovation Education (inED) of the Porto Polytechnic School of Education (ESE/IPP), which took place on February the 6th and the 7th, 2020, in the premises of the Faculty of Arts and Humanities of the UP and the School of Education of the IPP.

This was already the third edition of an international/transcontinental meeting, which is held by tradition in co-organization by the institutions involved. It includes two days of work and reflection, sharing, and discussion, around themes from different languages and various scientific and investigative perspectives on sign languages and their properties and structures in different areas of grammar and of languages. In addition to having hosted researchers from Portugal, Brazil, Spain and Italy, the meeting had two guest speakers, Prof. Meltem Kelepir, from Boğaziçi University, Istanbul, Turkey, and Prof. Ana Mineiro, from the Portuguese Catholic University, Lisbon, both with a vast curriculum on sign languages.

Although sign languages have been considered natural languages, since William Stokoe, many doubts remain about their organization. During some decades of the 20th century, linguists tried to show that sign languages are governed by the same principles that regulate oral languages, principles of Universal Grammar. In recent decades, however, the focus has been placed on specific properties related to the manual-visual modality of sign languages, and on the simultaneity of manual and non-manual elements, among other aspects. Both perspectives are important and the challenge for lin-

guists is to discover what is universal and what is dependent on the specific modality of sign language, which makes the research so challenging and so stimulating.

This book covers topics from the most studied areas of sign languages and in particular Portuguese Sign Language (LGP) – lexicon and phonology – but also includes less explored areas such as syntax and semantics, as well as the wider domain of variation and change.

While the lexicon of sign languages is widely studied from different perspectives, there are many semantic dimensions of these languages still to be analysed and understood. One of those dimensions is quantification. Studies on quantification in sign languages are rare and there are difficult questions to answer: how are universal quantification (*all x*) and existential quantification (*some x*) expressed in different sign languages? How do these languages express definiteness and indefiniteness?

In her text, Meltem Kelepir studies the role of space in the expression of exclusive and inclusive indefinite quantification, taking Turkish Sign Language (TİD) as a starting point; in this language, the sign for ONE, when signed in different spaces, results in different interpretations. There are exclusive indefinite forms (which exclude at least the interlocutor and other individuals), particularly a sign to OTHER, which can function as an exclusive indefinite with a sense of "someone" and which can be used alone or combined with other forms. And there is a sign for an inclusive indefinite that includes the addressee and a third person ("he" / "she"). As there is no sign to give the value of inclusive OTHER, it seems, therefore, that the exclusive value is the unmarked value for the indefinite in TİD, which is in line with the proposal of Cormier (2005)[1] for personal pronouns in American Sign Language (ASL).

One of the central issues to explore in sign languages is the organization of simple sentences, in their different types, and the organization of complex sentences, including word order and the way these languages express the argument structure of verbs, typical problems addressed in syntax. In this book, several texts analyse these themes, albeit in different ways.

Alessandra Checchetto, Caterina Donati and Carlo Cecchetto describe partial exclamatives in Italian Sign Language (LIS) from a semi-spontaneous corpus, with Deaf informants, who were asked to describe drawings that would provoke positive and negative surprise reactions, as well as judgments of grammaticality regarding such productions. The analysis allowed to observe that the main marks of partial exclamatives in LIS are furrowed eyebrows, as in partial interrogatives, which permits the conclusion that furrowed eyebrows are the non-manual expression of a *wh* feature, the common feature of interrogatives and partial exclamatives. This proposal allows the authors to elaborate a formal treatment of partial exclamatives along the lines of Zanuttini & Portner (2003)[2] and which is minimally different from the analysis of *wh* interrogatives.

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[1] Cormier, Kearsy (2005). Exclusive pronouns in American Sign Language. In Filimonova, E. (ed.), Clusivity: *Typology and case studies of inclusive-exclusive distinction*, 241-268. Amsterdam: John Benjamins.

[2] Zanuttini, Raffaella & Paul Portner (2003). Exclamative Clauses: At the Syntax-Semantics Interface. *Language*. 79: 39-81.

Morgado and Brito study predicative sentences in Portuguese Sign Language (LGP) with adjectives and locatives; the data collected, either in provoked productions of four Deaf informants, or through the collection in the *Spread the Sign* dictionary, allowed them to conclude that there is null copula with adjectives, with individual predicates and with stage-level predicates, as opposed to locative predicates, which are produced with a sign for the verb, followed or preceded by a locative index and, in several constructions, accompanied by the *mouthing* /lala/. This finding justified, by the authors, a comparative analysis between null copula oral languages and other sign languages, in particular ASL, Brazilian Sign Language (LIBRAS), Spanish Sign Language (LSE) and Finnish Sign Language (FinSL).

Word order, as we have already said, is also an aspect to be explored regarding sign languages, with some researchers claiming that sign languages have greater flexibility in word/phrase order than oral languages, but, on the other hand, there are linguists who, comparing different sign languages, advocate in favour of dominant patterns of order.

Mariana Martins, Hope Morgan and Victoria Nyst studied word order and argument structure in Guinea-Bissau Sign Language (LGG), an emerging sign language, therefore not yet fully stabilized. Data were obtained from an elicitation task by 12 Deaf signing women, from the observation of videos that captured transitive events. The analysis allowed the authors to realize that the verb arguments are indexed in space, but the directionality of the verbs does not always consider the location of the arguments. The sentence has the verb in the final position, but there may be differences related to the arguments' animacy features: the SOV pattern appears when the subject is non-human and the OSV pattern appears with two human arguments, which allows finding similarities with other emerging sign languages, namely the sign languages that appear in villages (*village SL*).

One of the questions always raised about the lexicon of sign languages is to know to what extent the used signs are iconic, trying to approximate the shape of objects, or whether they are arbitrary, with an increasingly distant relationship from that shape.

Rosana Constâncio and Jorge Bidarra, based on several examples from LIBRAS discuss this issue, considering that, in sign languages, and from a functional perspective, iconicity cannot be considered an antagonistic phenomenon of arbitrariness, since, if certain parts of signs can be iconic, other parts are not. Thus, the authors consider that the two dimensions characterize LIBRAS, just like any other natural language.

Ana Mineiro also discusses this issue from the analysis of how the syntactic space, - the space where the signs of a sign language are produced -, is modified in an emerging language, the Sign Language of São Tomé and Príncipe (LGSTP). The study allowed to observe how, from a wide space regarding the use of the whole body and the production of signs away from the signer, signs are getting closer to the trunk and that decreases in terms of the occupied space area, in a process which the author considers to be universal, neurolinguistically motivated, in search of linguistic economy and less energy in the articulation of the sign and in the use of space.

Marta Morgado and Victoria Nyst also study two village sign languages, one used in Adamorobe (AsaSL), Ghana, and the other in Bouakako (LaSiBo), Ivory Coast. The first language exists for several generations and currently has thirty speakers. The

second is emergent and has seven speakers. Being village languages, they were not influenced by the school or other sign languages. From the production of stories about attacks by animals, namely snakes, the aim of the study was to understand how mouth movements are used to express size and shape. Some similarities and differences were found in these two languages: in LaSiBo the small size and circular shape were expressed mainly by body signs and very little by mouth movements; mouth movements were more frequent at AsaSL.

Like any natural language, sign languages are prepared to build texts and discourses, using narrative strategies, reference and co-reference processes.

Leidiani da Silva Reis and Jorge Bidarra study referential processes in two sign languages, LIBRAS and LSE, from two parallel *corpora* composed of narratives produced by six Deaf individuals, three Brazilians and three Spanish, based on the visualisation of a video that tells the story of pears (*Pear Film*). The research allowed to show that, although each language uses its own narrative strategies, the reference processes are similar, since the signers used, recurrently, mechanisms of introduction of referents and of co-reference through complex constructions constituted by deictic expressions and anaphoric expressions, which the authors called Deictic-Anaphoric constructions.

Like natural languages, sign languages are also subject to variation and change.

Neide Gonçalves, Mara Moita and Ana Mineiro decided to study these dimensions in two productions of the short story *Little Red Riding Hood*, by two Deaf signers at different times, in 1992 and 2019. The elicited productions were recorded. The main results point to a slight increase, in 2019, in the use of the non-dominant hand with a symmetrical role in sign articulation and an increase in the use of facial expressions with phonological value. It was also observed that the configuration is the changing parameter in all items that suffered phonological variation. From the lexical point of view, of the 20 key items analysed, only three suffered lexical variation.

The texts now published were subject to peer review and we take this opportunity to renew, once again, our thanks to the reviewers.

We thank the institutions involved in this publication and all their contribution, especially CLUP and FCT, for funding this publication.

We would also like to thank our colleagues from ESE/IPP who have collaborated with us in the organization of the meetings on morphosyntax of LGP, which have contributed so much to the advance of the knowledge about Sign Languages and to the constitution of a knowledge network capable of continuing to develop initiatives in this area.

Porto, July 2021
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Exclusive indefinite arguments in Turkish Sign Language (TİD) and the function of space

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Abstract

This paper proposes that there is clusivity distinction in indefinites in TİD, similar to clusivity distinctions in personal pronouns. In this phenomenon, exclusive, for instance, means excluding at least the addressee and also, depending on the context, other individuals. One way of expressing clusivity distinction is by the use of a lexically specified exclusive determiner OTHER that forms exclusive indefinite expressions. Another way is to sign indefinite expressions formed with the sign ONE either in the central (and low) signing space or in the lateral (and high) signing space. The former causes inclusive interpretation whereas the latter causes exclusive interpretation. I argue that these specific parts of the signing space represent restricted domains of quantification of the indefinites. Thus, they function as special spatial restrictors.

Keywords: indefinites, clusivity, exclusive, inclusive, domain of quantification.

1. Introduction

Imagine that you are at work, sharing an office with a colleague, each working at your desks, going through a relatively boring day. Your phone is on your desk next to your computer. You leave the office for a few minutes for a break. When you come back, you realize that your phone is no longer on your desk. You panic and exclaim. Your colleague asks you what is going on and you say "Somebody has stolen my phone!".

For speakers of many languages, including English, this may create an uncomfortable situation. Your colleague may feel offended that you imply that s(he) may have stolen your phone. S(he) may even say "I swear, it wasn't me!". There is no sim-

ple way of saying 'somebody' in a case like this and avoiding being misunderstood that you may be accusing your addressee.

This is because the domain of quantification for the indefinite *somebody*, in principle, includes all individuals. Pragmatically speaking, all individuals in the given context. In all oral languages that I am aware of, the domain of quantification of a quantifier is restricted either contextually whereby *somebody* in this situation would be understood not really somebody in the entire universe but as something like 'somebody [who has been in this room recently]' or with overtly expressed lexical items such as 'somebody [other than you]'.

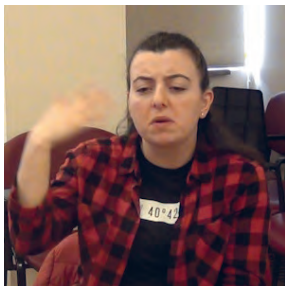
Kelepir, Özkul and Tamyürek-Özparlak (2018) argue that Turkish Sign Language (TİD) takes advantage of the visual modality which provides the means to express the meaning 'somebody other than you' without actually uttering the lexical items that mean 'other than you'.They call these indefinites *exclusive indefinites*.This meaning is conveyed by either with an indefinite that is lexically specified to function as an exclusive indefinite, OTHER, or by signing an indefinite pronoun, for instance, ONE, in the (higher) lateral. When the same sign is signed in the (lower) central signing space, closer to the body of the signer, on the other hand, the indefinite is interpreted as being inclusive, i.e. including the addressee (and possibly other salient individuals in the context). (1) illustrates these indefinites and Figure 1 shows how they are pronounced.

(1) Context: "You leave your office to take a break from work and leave your phone on your desk. When you come back to the office, you realize that your phone is no longer there. What would you say to your office mate?"

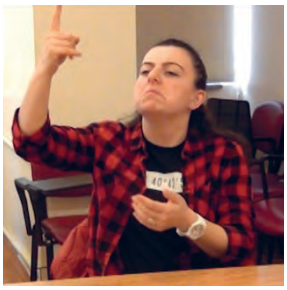
a. OTHER $\text{PHONE}_1\text{STEAL}_3$
'Someone (other than you) stole my phone.'

b. $\text{ONE}_{\text{lat-high}}\text{PHONE}_1\text{STEAL}_3$
'Someone (other than you) stole my phone.'

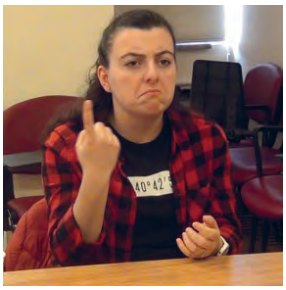
c. $\text{ONE}_{\text{centr-low}}\text{PHONE}_1\text{STEAL}_3$
'Someone (including you) stole my phone.'



OTHER (excl.)



ONE_{excl}



ONE_{incl}

Figure 1. Exclusive and inclusive indefinite pronouns in TİD

In this paper, I build upon the findings of Kelepir et al. (2018) and argue that exclusive indefinites in TİD are existential quantifiers whose domain of quantification is restricted to the set of individuals excluding the addressee (or also other salient individuals in the context, as we will see below). Moreover, I propose that the lateral signing space represents this set. Conversely, the domain of quantification of inclusive existential quantifiers include the addressee (or also other salient individuals in the context). The central signing space represents this set.

There is growing literature that shows that signing space plays a crucial role in the interpretation of quantificational elements. Particularly, analyses of Catalan Sign Language (LSC) indefinites, and of American Sign Language (ASL) universal, existential, and negative quantifiers have shown that contrast in the height of signing (lower/neutral vs. higher part of the signing space) correlates with a contrast in the interpretation of the domain of the quantificational element.

Barberà (2012/2015, 2016) shows that in Catalan Sign Language (LSC), the part of the sign space where an indefinite such as 'some people' is signed determines whether or not it is going to be interpreted as specific or non-specific. In all her examples, the indefinites are signed in the lateral signing space but they differ in how high in the space they are signed. Barberà (2012/2015, 2016) argues that when an indefinite is signed in the higher part of the signing space, it is interpreted as non-specific, whereas when it is signed lower, it is interpreted as specific (see also Section 3).

Davidson and Gagne (2014, under review) argue that pragmatic intuitions are grammaticalized in ASL as overt contextual domain restrictions.They analyze some quantifiers in ASL and show that the size of the restriction of the domain of a quantifier can be expressed overtly by signing the quantifier at different heights in the signing space.When, for instance, the quantifier ALL is signed in the lower (neutral) part of the central signing space, it is understood to quantify over a narrow, default restricted set of individuals based on the context. This set can, for instance, be a set of individuals mentioned earlier in the discourse (Davidson & Gagne, under review, p. 22-23). When it is signed in the higher part of the central signing space (at the level of the signer's head), however, it is understood to quantify over a set wider than the default set or even the widest possible. This set, for instance, can consist of all the individuals in the world. The authors show that this pattern holds not only for the quantifier ALL but also for others such as NONE 'no one' and SOMEONE 'someone' / 'something'. They further argue that the correlation between (non)-specificity and height in ASL, which was also shown for LSC indefinites in Barberà (2015, 2016), can also be captured within their proposal, namely, that specificity indefinites, which are signed in the lower/neutral height, have narrower domains whereas non-specific indefinites, which are signed in the higher component, have wider (widest possible) domains (see also Section 3).

These two previous studies show that the contrast in the height of the locations where a quantificational element is signed corresponds to a contrast in the interpretation of the domain of quantification of these elements. What the TİD data that I discuss in the following add is that the contrast in lateral vs. central signing space also corresponds to a contrast in the interpretation of the domain of quantification: signing an indefinite in the lateral(-high) component of the signing space indicates

that the domain of quantification excludes the addressee whereas signing it in the central(-low) signing space includes the addressee. Thus, the two components of the signing space function as special domain restrictors of indefinites.

Section 2 outlines the findings in Kelepir et al. (2018) regarding the exclusive and inclusive indefinites. Section 3 builds upon these findings, highlights the fact that exclusive and inclusive personal pronouns are also distributed over lateral and central signing space areas, respectively, and argues that these signing space components function as special domain restrictors of indefinites in TİD, pointing out similarities and differences in previous works on LSC and ASL. Section 4 summarizes the discussion, discusses the implications of these findings for the role of signing space in sign languages as well as for the typology of indefinites and clusivity in general.

2. Clusivity in indefinites and function of signing space

Kelepir et al. (2018) argue that TİD has what they call "neutral indefinites", "exclusive indefinites", and "inclusive indefinites". A common neutral indefinite is ONE^PERSON^C_PERSON 'someone'. Its components ONE and C_PERSON are signed in the central signing space and PERSON is signed on the face. It is "neutral" in terms of clusivity, that is, it is like English *someone* in that its domain of quantification does not exclude the addressee.

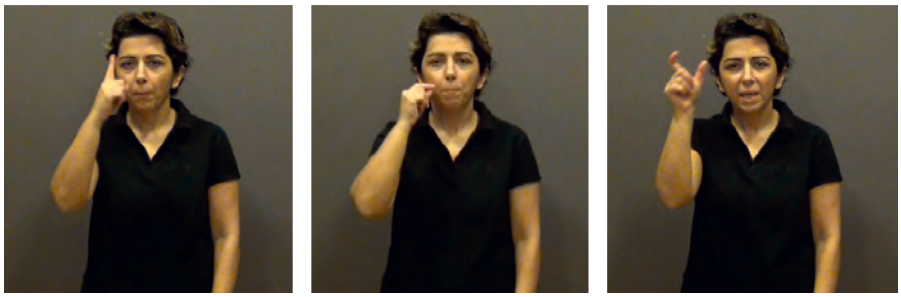


Figure 2. ONE ^ PERSON ^ C_PERSON 'someone'
(Saral & Kelepir, 2020, Lexicon 3.7.7)

However, they also identify two ways of forming exclusive indefinites: one involves the determiner OTHER (Figure 3).

Figure 3. Exclusive indefinite determiner / pronoun OTHER 'someone'

OTHER can function as an indefinite pronoun on its own (perhaps can be analyzed as modifying an ellided noun'person') or combine with other determiners and nouns to form a more complex indefinite pronoun. One such possible combination is OTHER^ONE 'someone'.

The authors report that their consultants find using indefinite expressions with OTHER more socially appropriate in a context described in Section 1 above. The context and the utterances are given below. ⌘ represents "inappropriate in this context".

(2) Context: "You leave your office to take a break from work and leave your phone on your desk. When you come back to the office, you realize that your phone is no longer there. What would you say to your office mate?"

a. non-sp
⌘ONE^PERSON^C_PERSONPHONE $_1$STEAL$_3$
'Someone has stolen my phone.'

b. non-sp
OTHER^ONE$_1$STEAL$_3$
'Someone (other than you and people "here") has stolen (my phone).'

Furthermore, the consultants state that if they use the neutral indefinite in (2a), this would imply that their colleague would be one of the suspects. Since this would be socially inappropriate, they would use a form with OTHER, as in (2b).

Predictably, (2b) is not felicitious in an inclusive context where the speaker continues with a question 'Did you take it?'

	non-sp	y/n q
(3)	#PHONE OTHER^ONE$_1$STEAL$_3$	IX$_2$TAKE
	'Someone has stolen my phone.'	'Did you take it?'

Note that the follow-up question does not only have to include the addressee to make the first utterance in (3) infelicitous. It can also include an individual who is present in the location of the utterance or whom the signer associates with the location of the utterance ("here"), such as her co-workers.

How is OTHER different from *someone else* or *another person*? To begin with, signers report that it is a common form with the meaning 'someone'. Moreover, it can occur initially in a discourse where the excluded set has not been mentioned, which is not possible with *someone else* or *another person*. Consider the following context and compare the acceptability of the English and the TİD sentences.

(4) Context: "I get on the bus. After a while, I decide to check my messages. I look for my phone in my purse but cannot find it…"

a. English: # Someone else/another person has stolen my phone.

b. TİD: non-sp
PHONE OTHER$_1$STEAL$_3$
'Someone (who is not on the bus) has stolen my phone.'

It can also be an answer to a *wh*-question, without an excluded set mentioned or salient in the context.

(5) Context: "Two women are sitting in the living room. The door rings. One of the women opens the door and returns to the room."
Question: Who is at the door?
Answer: a. English: #Some other man/another man

b. TİD: non-sp
OTHER MAN
'Some man (I don't know who).'

These contrasts in acceptability show that OTHER forms indefinites that exclude the addressee and individuals considered to be "here" but these indefinites do not have the same meaning as *someone else* or *another person*.

To summarize, we have seen that, in contrast with better-studied spoken languages, TİD distinguishes between exclusive and neutral indefinite pronouns, and one way of doing it is with a special lexical item, OTHER.

The second way to form exclusive indefinites that Kelepir et al. (2018) identify is signing ONE 'someone' in the lateral-high component of the signing space. This is shown below.

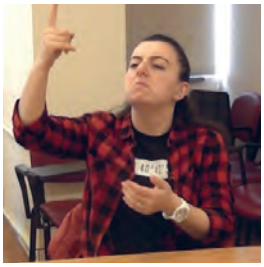


Figure 4. $ONE_{lat\text{-}high}$ 'someone (excl.)'

(6) Context: A: Where did you get that? It's really nice.
B: My mom gave it to me…
non-sp
$ONE_{lat\text{-}high3a}$ $GIVE_{3b}$ $IX_{3b\ 3b}$ $GIVE_{1}$ WHO KNOW^NOT
'Someone gave it to her (my mom) and she (my mom) gave it to me. I don't know who.'

Similar to OTHER, $ONE_{lat\text{-}high}$ is also infelicitious in inclusive contexts.

(7) non-sp
$ONE_{lat\text{-}high1}$ $STEAL_{3}$
'Someone has stolen (my phone).

y/n q
IX_{2}
'Was it you?'

(adapted from Kelepir et al., 2018, p. 173)

Conversely, when the signer wants to convey that "someone" is restricted to individuals who are in the inclusive setting, s/he signs the indefinite pronoun in the central signing space (Figure 5).

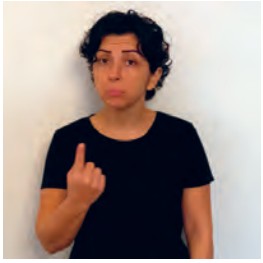


Figure 5. $\text{ONE}_{\text{centr-low}}$
(Saral & Kelepir, 2020, Lexicon 3.7.7)

The context and the utterance are given below:

(8) a. Context: "You go to the department kitchen. You see tiramisu on the kitchen counter. What do you say to your colleague?"

non-sp
$\text{ONE}_{\text{centr-low}}$ BRING
'Someone (from here) brought (it).'

b. Context: "It's your birthday. You go into the lab in the morning. You see flowers and a gift package on your desk. What do you say to your colleague?"

non-sp
FLOWER $\text{ONE}_{\text{centr-low}}$ LEAVE
'Someone (from here) left flowers."

These utterances are felicitous with the inclusive follow-up questions, which we saw above are infelicitous with exclusive indefinites:

	non-sp	y/n q
(9)	FLOWER $\text{ONE}_{\text{centr-low}}$ LEAVE	IX_2
	'Someone (from here) left flowers.'	'Is it you?'

They are not felicitous in exclusive contexts:

(10) Context: "You went to the lab on Sunday to work. You were alone at the department, there was nobody else. You went to the bathroom and when you came back you saw flowers at the door of the lab. You tell about this to your colleague on Monday."

non-sp
FLOWER $\text{ONE}_{\text{centr-low}}$ LEAVE
'Someone (from here) left flowers.'

The contrast between lateral-high vs. central-low corresponding to the contrast in clusivity is not limited to indefinite pronouns but is observed with agreement verbs whose agent argument is indefinite, as well.

In Figure 6a below, the backward agreement verb STEAL with an exclusive indefinite agent argument ends in the lateral(-high) area whereas in Figure 6b the verb with an inclusive indefinite agent ends in the central(-low) area.

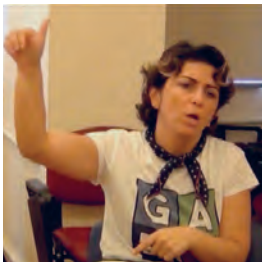



Figure 6a. $_{1}\text{STEAL}_{3\text{lat-high}}$ ‘Someone (not from here) stole my phone.’


Figure 6b. $_{1}\text{STEAL}_{3\text{centr-low}}$ ‘Someone (from here) stole my phone.’

The claim that the lateral signing space represents the set of individuals that exclude the addressee and may also exclude those that are associated with the location of the utterance is supported by the distribution of the exclusive and inclusive personal pronouns.

Sign languages are known to exhibit clusivity distinctions in first person plural pronouns such as WE, TWO_OF_US, THREE_OF_US etc. For example, inclusive ‘we’ includes the addressee whereas exclusive ‘we’ does not. Cormier (2005) states that inclusive first person plural pronouns are signed in the central signing space whereas their exclusive counterparts are signed in a “displaced” area in ASL. Whereas displaced WE in ASL is still signed on the signer’s torso, produced slightly left or slightly right of the signer’s midline on the chest, exclusive WE in TİD (and the other first person plurals) are signed away from the torso, in the lateral signing space (see also similar examples in Italian Sign Language (LIS) in Mantovan, 2020, and in German Sign Language (DGS) in Nuhbalaoğlu & Kubus, 2020).

The following illustrates this with first person plural pronouns in TİD:

WE$_{excl}$
'We,
excluding you'

TWO_OF_US$_{excl}$
'Two of us,
excluding you'

WE$_{incl}$
'We,
including you'

TWO_OF_US$_{incl}$
'Two of us,
including you'

Figure 7. Examples of exclusive and inclusive first person plural pronouns in TİD

Thus, the correlation between signing space components and clusivity interpretation of personal pronouns is consistent with what we observe with indefinites in TİD.

Moreover, Cormier notes that sign language exclusive pronouns differ from spoken language ones in that the former may exclude not only the addressee but also others salient in the discourse (Cormier, 2012, p. 233). This is also consistent with the observation described above that exclusive indefinites in TİD may exclude individuals salient in the discourse, those that are associated with the location of the utterance, in addition to the addressee[1].

To summarize, following Kelepir et al. (2018) I have argued for two generalizations. One is that TİD makes a clusivity distinction in indefinite expressions, similar to clusivity distinctions in first person plural pronouns. One option to express exclusivity is to use a lexically specified exclusive indefinite determiner: OTHER. The other involves signing the indefinite manual sign ONE in different parts of the signing space. This takes us to the second generalization: lateral signing space represents exclusivity whereas central signing space represents inclusivity.

3. Components of space as representations of restricted domain of quantification

In this section, I first lay out an analysis for the role of signing space in rendering these interpretations in TİD indefinites and then discuss how this analysis is in line with and contribute to the findings in indefinite and quantifier interpretation in other sign languages.

[1] See Cysouw (2003) cited in Siewierska & Bakker (2005, p. 152) where the inclusive counterparts of these cases, i.e. pronouns that include the first, the second and a third person salient in the discourse, are attested and called "augmented inclusive".

3.1. TİD indefinites and special spatial domain restriction

Recall that the indefinite determiner/pronoun ONE has the same handshape and orientation whether it is used exclusively or inclusively. The interpretation is determined by the location of signing. Based on the observations outlined in the previous section, I propose that the reason why the contrast in the location of signing of ONE causes the contrast in clusivity is that these locations are not meaningless phonological features of different indefinite signs but rather function as representing a special set of entities that (further) restricts their domain of quantification.

It is commonly assumed that in a quantified noun phrase such as, for instance, [every woman] in (11), the bare noun complement of the quantificational determiner denotes the set of women and restricts the domain that the determiner ranges over. In other words, thanks to its syntactic complement (or semantic argument) the quantifier does not range over all entities in the universe but over a subset of it, the set of women. *Woman* in this example functions as the "explicit restrictor" of *every*.

(11) Every woman danced.

Still, however, we tend not to interpret the sentence in (11) as *it is true for every entity x in the universe who is a woman that x danced*. Usually, we further restrict the set that *every* ranges over to a set of women relevant in the context. This is pragmatically-conditioned, "implicit restriction". A possible context may be a party that the speaker has been talking about. Thus, this further restriction may be explicitly expressed as, for instance, [who came to the party], as in (12) or implicitly understood.

(12) Every woman who came to the party danced.

For both (11) and (12) then, we can say that the domain of the quantifier *every* is restricted to the set of women who came to the party mentioned in the context.

If we treat indefinites as existential quantifiers, similar restrictions can be applied. Consider (13).

(13) Someone has spilled wine on the table.

This sentence is interpreted as *there is an x such that x is a person and x has spilled wine on the table*. However, the context may provide a restriction on the domain. If, for instance, the speaker and the addressee are at a party, the domain of the indefinite would be understood to be restricted to the set of individuals who are at the party. This may also be expressed explicitly:

(14) Someone who was at my party spilled wine on the table.

Going back to the TİD indefinites, we can say that they seem to be displaying two properties regarding domain restriction that are different from those in the English examples above: (i) the domain is restricted not just to a subset of individuals in the

context (e.g. individuals who were at the party) but to a special subset: namely, to a set of individuals who the signer considers to be the set of individuals who are "here" (what "here" means is determined by the signer) and those who are not, (ii) even though this restriction is not uttered with lexical signs as in the examples in (12) and (14), it is still expressed explicitly. The location of signing functions as a sign language modality specific means of explicit restriction. More specifically, the central signing space represents the individuals that the signer considers to be "here"/"part of us", and the lateral signing space represents the set of individuals who are "not here"/"not parts of us". By signing the indefinite sign ONE'someone' in one of these locations then, the signer signs it together with its restriction (see the discussion of a similar observation in Davidson & Gagne (in review) for ASL quantifiers below). This is why I analyze this as special explicit restriction.

The distribution of personal pronouns in lateral and central signing space components support the claim that these two components represent exclusive and inclusive sets of individuals. Recall that all personal pronouns (and agreement morphemes) that exclude the signer and the addressee, namely, exclusive first person plural and third person pronouns are signed in the lateral signing space whereas the pronouns that point towards the signer and the addressee as well as the inclusive first personal plural pronouns are signed in the central signing space (see also Barbera, 2012: 105-106) for a similar observation for LSC pronouns). The following figure provides a visual summary:

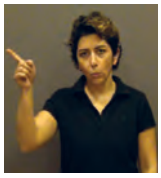
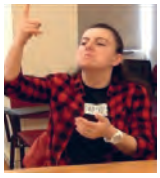
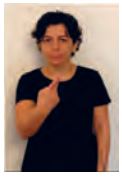
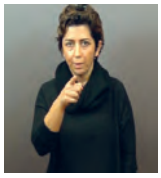
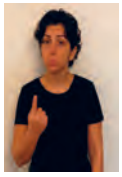
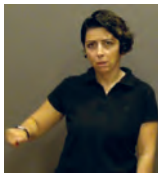
1st p. pl. (excl.)	3rd person	indefinite (excl.)	1st p. pl. (incl)	2nd person	indefinite (incl.)
					
TWO_OF_US$_{excl}$	3rd p. sg. pronoun	ONE 'someone' (excl)	TWO_OF_US$_{incl}$	2nd p. sg. pronoun	ONE 'someone' (incl)
					
WE$_{excl}$	agr. w/ 3rd person sg.	$_1$STEAL$_{3\ (excl.)}$	WE$_{incl}$	agr w/ 2nd person sg.	$_1$STEAL$_{3\ (incl.)}$

Figure 8. Personal and indefinite pronouns, and agreement morphemes[2] in lateral and central signing space

[2] The nature of these agreement morphemes is actually controversial. I will not discuss this controversy here. However, let me point out that if we follow Fischer (1975) and Nevins (2011) in assuming that the so-called agrement morphemes are actually pronouns cliticized to verbs, the data I summarize in Figure 8 become more homegeneous.

Locations in signing space where noun phrases can be signed and then referred back to with pointing signs are called "locus/loci". This is a sign language modality specific means to keep track of discourse referents. It has been proposed, therefore, that loci are overt instantiations of semantic indices (Lillo-Martin & Klima, 1990).

It has also been proposed that loci can realize logical variables and that sign languages employ (parts of) signing space to represent sets of individuals in the interpretation of quantificational elements (Schlenker et al., 2013, Davidson & Gagne, 2014 and in review), i.a.). Following these works and building upon the observations on TİD discussed above, I propose that in TİD, the central signing space represents an inclusive set of individuals (as defined in the discussion in Section 2) whereas the lateral signing space represents an exclusive set of individuals. This is schematized in Figure 9 below.

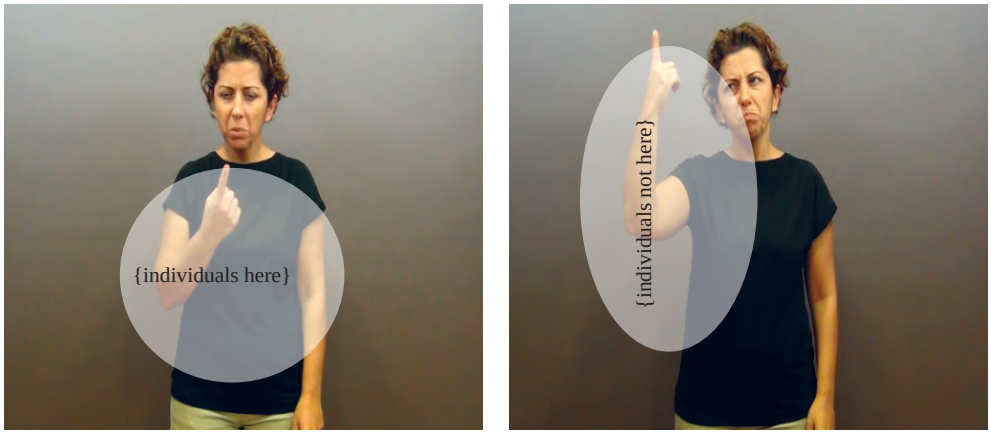


Figure 9. Central and lateral signing space and the sets of individuals they represent

When an indefinite is signed in either of these spaces, its domain of quantification is intepreted to be restricted to one of these sets. Thus, even though, the indefinite noun phrase does not contain the lexical items that would serve as the explicit restrictor, as in the English example (12), one can claim that this is still an example of explicit domain restriction if we consider the location of signing a morphological component of the indefinite form. The TİD indefinite forms, can, for instance, be considered to be reminiscent of compound indefinite forms in English such as *someone* and *something*. The second components of these compounds function as restrictors of the indefinite determiner *some*: the first one restricts the domain to the set of human beings, the other one to the set of things[3]. I leave the investigation of this possibility to further research.

3.2. Role of signing space in domain restriction in other sign languages

As mentioned in Section 1, the role of components of signing space in contributing to the interpretation of indefinites and quantifiers has been observed before in other

[3] See, for instance, Barberà (2012, 2015) for a detailed proposal on spatial morphemes in LSC.

languages. For instance, Barberà (2012, 2016; i.a.) shows that specific discourse referents (i.e. those that have a wide scope reading, are identifiable by the sender, and are part of a restricted set) are associated with a low referential locus in the signing space (15a) whereas non-specific discourse referents (i.e. those that have a narrow scope reading, are unidentifiable by the sender, and are not part of a restricted set) are associated with a high referential locus (15b) (Barberà, 2016, p. 27).

(15) a.) HOUSE SOME$_{low}$
'some of the houses' (specific, identifiable by the signer)

b.) HOUSE SOME$_{up}$
'some houses' (non-specific, unidentifiable by the signer)

The data that Barberà analyzes do not involve the exclusive-inclusive distinction, and the LSC indefinite examples she presents are signed in the (ipsi-)lateral signing space.Thus, the contrast she focuses on, namely the specific vs. non-specific interpretation, corresponds to the contrast between the lower and the higher area of the (ipsi-)lateral signing space. She argues that the central signing space is employed for non-entities such as propositions in LSC. Nevertheless, Barberà's analysis is one of the first comprehensive proposals for the role a contrast in signing space areas (upper vs. lower) functions to express a contrast in meaning of indefinites (specific vs. non-specific).

Somewhat similarly, Davidson and Gagne (2014; under review) propose a correspondence between components of signing space to a (gradient) contrast in the interpretation of quantifiers. They analyze a number of quantifiers and indefinite forms (as well as pronouns and agreement verbs) in ASL and argue that these elements can be pronounced progressively higher or lower in signing space to signal multiple levels of widening or narrowing, respectively, of their contextual domains of quantification. The height of signing ensures unambiguous interpretation, in contrast with English quantifiers, as exemplified in (11) above.

Their data consist of two types: in one type the restriction is established with a plural index sign and that's where the quantifier is signed later, in the second type the restriction is not established but the height of signing signals the size of the set that corresponds to the (restricted) domain of quantification. In (16) below I illustrate the second type, which is similar to the TİD data I have been discussing in that the restriction is not established with a plural index sign. In (16a) the quantifier ALL is signed in the lower (neutral height) area. In this case, ALL is understood to quantify over the smaller domain of friends who watched the movie mentioned in the context. However, when it is signed higher, as in (16b), it quantifies over a much wider domain, in this case, everyone in the world.

(16) Context: Signer has just said, "Last night I watched a movie with my friends about vampires. Afterwards I went to bed and I dreamt that. . . "

a.) ALL-low BECOME VAMPIRE
(i) # 'All <u>of the people in the world</u> became vampires.'
(ii) 'All <u>of my friends</u> became vampires.'

b. ALL-high BECOME VAMPIRE
(i) 'All of the people in the world became vampires.'
(ii) # 'All of my friends became vampires.'

(Davidson & Gagne, in review, p. 3)

As mentioned above, the signer may but need not to establish the restricted set with a plural index sign pointing to plural loci in the corresponding parts of the signing space. Signers can instead make default interpretations for whole planes in space whereby "neutral/low signing space seems to represent the entirety/whole of the universe for the contextually relevant/restricted default context; a higher space seems to allow reference to a superset of this set, when the signer wants to signal a larger domain than was already being considered" (Davidson & Gagne, in review, p. 12-13). Furthermore, they formulate the phenomenon as simultaneous articulation of a quantifier with its restriction[4].

They extend their analysis to negative and existential quantifiers in ASL, namely, NONE 'no one' and SOMEONE 'someone' / 'something' as well as the LSC indefinites discussed in Barberà's work. They argue that the specificity contrast attributed to height in LSC can also be analyzed as contrast in domain sizes: non-specific interpretation corresponds to wide domain of quantification whereas specific interpretation corresponds to narrower domain of quantification.

The analysis presented in this paper on TİD indefinites support the claim that parts of signing space may represent restricted domains of quantifiers and sign languages make use of spatial contrasts to express contrast in interpretation. The spatial contrast that Barberà and Davidson & Gagne identify in their works is contrast in height in the frontal plane (higher vs. lower) whereas the contrast that is argued for in this paper is contrast in different components of the horizontal plane (central vs. (ipsi-)lateral)[5]. Thus, a picture emerges where different kinds of spatial contrasts are employed to express different kinds of interpretive contrasts.

4. Conclusion and discussion

In this paper, I analyzed a number of indefinite forms in TİD and showed that clusivity distinctions that we are familiar with from personal pronouns in sign languages also exist for indefinite arguments in TİD. Exclusive indefinite forms exclude at least the addressee and they may also exclude other salient individuals that the signer associates with the group that includes him/her and the addressee. Inclusive indefinites, on the other hand, *include* this kind of individuals. TİD has a lexically specified exclusive indefinite determiner OTHER which can function as an exclusive indefinite pronoun with the meaning 'someone' by itself or can combine with other items to form exclusive indefinite expressions. We have not yet observed an inclusive

[4] See Davidson and Gagne (in review) for a detailed discussion where they propose that the higher/lower locus functions as the restrictor in the form of a pronominal argument.

[5] See also Schlenker et al. (2013) for iconic representations of complement sets involved in the interpretation of quantifiers.

counterpart of OTHER in TİD, namely, a lexically specified inclusive indefinite determiner. This gap may be a coincidence or it may be the result of the fact that exclusive is the unmarked value of clusivity in indefinites in TİD. In her discussion on clusivity of personal pronouns in ASL, Cormier (2005: 248) argues that in contrast with what has been found in the typological studies on spoken language personal pronouns, exclusive is the unmarked value for personal pronouns in ASL, based on the fact that there are no specific inclusive forms.

The main focus of the paper has been, however, the role of signing space in expressing clusivity distinctions in indefinites. I showed that signing the indefinite sign ONE in different parts of space results in different interpretations. Similar to what has been proposed for LSC indefinites and ASL quantifiers, I argued that these different parts represent different restricted domains of quantification. Thus, I conclude that TİD data adds to the inventory of the interpretive roles of the components of signing space. While previous works on LSC and ASL showed that differences in height of signing causes differences in interpretation, TİD data show that differences in the components of horizontal signing space also causes differences in interpretation. Needless to say, in order to see whether all these contrasts exist within a single sign language and whether either of them is present across all sign languages, more research needs to be done. The parts of the signing space that can potentially contribute to expressing differences in interpretation across sign languages are summarized visually in Figure 10 below.[6]

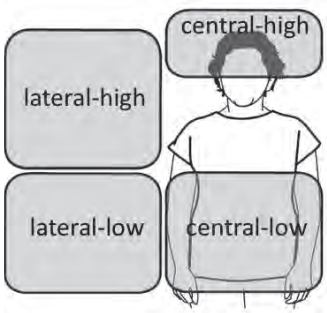


Figure 10. (Some of the) components of signing space

[6] An anonymous reviewer raises the question whether indefinites with overt restrictions such as *some teacher* would be incompatible with the lateral signing space since that part of the signing space seems to introduce a covert (exclusive) restriction, as proposed in this paper. I haven't had a chance to investigate this question, however, the implication of the analysis here is that the covert restrictions proposed (exclusive or inclusive) induce partitive interpretations that exclude or include a salient set of individuals. In that respect, even when an indefinite has an overt restriction such as *teacher*, it is not predicted to be incompatible with either of the parts of the signing space. In other words, in principle, two different readings such as "Some teacher who is not from our current group" vs. "Some teacher who is from our current group" are possible. Whether or not TİD utilizes different parts of signing space for indefinites like these as it does with the indefinite pronouns discussed in this paper is yet to be investigated.
The same reviewer asks whether we can analyze the inclusive set represented by the central signing space as a superset to the exclusive set represented by the literal signing space, rather than analyzing them as disjoint sets. I cannot see how that would be possible.

The findings presented in this paper are consistent with what we have been learning from sign language research about iconic and metaphoric ways of representing semantic notions using the three-dimensionality of the signing space. What has been usually categorized as neutral / central signing space, the area closer to the chest of the signer, has been consistently shown to be used to express notions that are related to what is "familiar"/ "close" to the signer: familiar sets of entities, narrow domain of quantification, specificity, inclusivity, "here", and "now". The area that is away from the central signing space, away from the chest of the signer, on the other hand, is consistently used to express notions that the signer would consider "unfamiliar" / "far": less familiar entities, wider domain of quantification, non-specificity, exclusivity, "not here"/"there", and "not now" (past or future) (see Özkul, 2020, and the references therein).

Returning to the clusivity distinction in indefinites, as far as I can tell, this distinction has not been identified in the typological studies on clusivity (Filimonova, 2005) or on indefinites (Haspelmath, 1997). Thus, if the analysis of the TİD indefinites is correct (and even better, if there are other sign languages with a similar distinction), the findings of this research program may also fill a typological gap, regarding what is possible in natural languages.

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Wh-features and exclamatives in LIS (Italian Sign Language)[1]

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Abstract

This paper offers a description and outlines an analysis of exclamative sentences in LIS. The manual and non-manual markers of exclamative force have been looked for in a corpus of semi-spontaneous sentences elicited by using pictures that triggered reaction of positive or negative surprise. A follow up session including grammaticality judgements allowed to double check the main findings, namely that the main markers of partial exclamatives is furrowed eyebrows and the main markers of total exclamatives is raised eyebrows. As furrowed eyebrows are the marker of wh-interrogatives, LIS can be added to the long list of unrelated languages that can express exclamatives by employing the wh-morphology.

Keywords: LIS, partial exclamatives, partial exclamatives, *wh*-morphology.

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1. Introduction

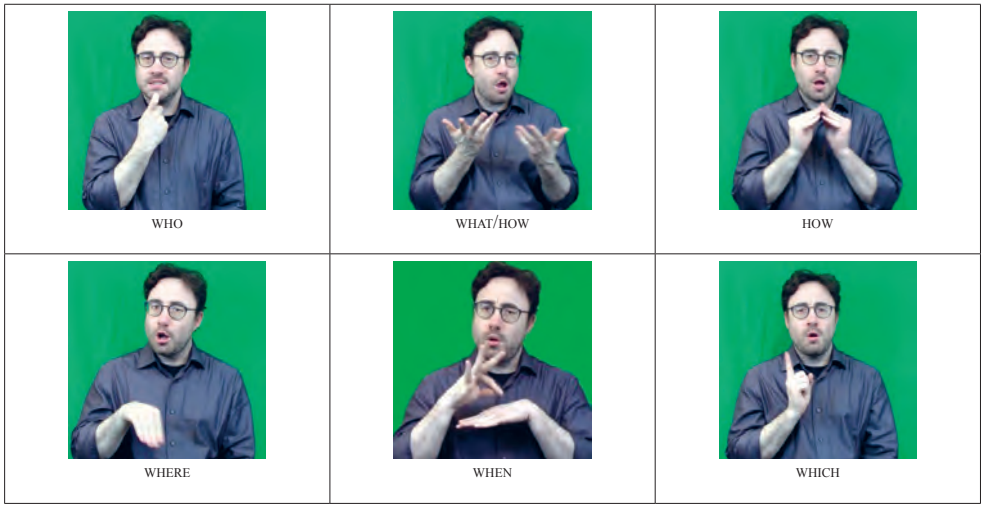
In the sign language literature, it is common to refer to signs specialized for questions as *wh*-signs and to interrogative constructions as *wh*-constructions. However, it is often left unspecified whether this terminological choice is motivated uniquely by practical considerations (the terminology is very widely used in linguistics and is transparent for most readers) or presupposes that a dedicated *wh*-morphology has been identified in the sign language under investigation.

In fact, there is no reason to presuppose that a language (including a sign language) is necessarily equipped with morpho-phonological features that are specialized for interrogatives. In a wide variety of unrelated languages, indefinites can be used in interrogatives with no special morphological marking (cf. Haspelmath, 1997), a well-known case being *shenme*, which in Chinese can mean 'what' or 'something'.

Our goal in this paper is to investigate whether a dedicated morphology specialized for interrogatives, similar to the *wh*-morphology observed in English, exists in LIS (Italian Sign Language).

A preliminary clarification is in order: some researchers argued that the concept of morpheme and that of phoneme are difficult to distinguish in in sign language because the formational parameters of the sign (the building blocks of the phonological system) may have an intrinsic meaning (cf. Meir, 2012 for review). Here we assume an operative definition according to which a morpheme is a meaningful sub-lexical unit and abstract away from the theoretical issue concerning the (alleged) morphemic value of phonemes in general.

Even a cursory look at the repertoire of interrogative pronouns in LIS suffices to show that there is no obvious manual feature that can be identified as a sub-lexical unit which might play the role of a wh-morpheme. The signs below (Figure 1) do not share location, handshape or any specific movement (there is some dialectal variation but the interrogative signs below are among the most attested ones across Italy).




HOW_MANY


WHY


$Q_{artichoke}$

Figure 1: interrogative signs in LIS (images from Mantovan, 2020)

In fact, LIS is not isolated in this respect. Other sign languages for which a rich repertoire of interrogative pronouns has been described pattern the same, namely no manual component can be identified as a candidate for a *wh*-feature (cf. the Section 3.7.5 of the Lexicon part of the sign language grammars produced by the SIGN-HUB projects and hosted here: https://www.sign-hub.eu/grammar).

However, LIS does not seem to be a Chinese type language either, as interrogative signs and indefinite pronouns are well distinct, as is best illustrated by comparing the sign WHO in Figure 1 and the sign SOMEONE in Figure 2.

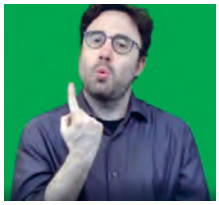


Figure 2: the sign SOMEONE

However, if one looks at non-manual-markers the various interrogative signs all have something in common and this is furrowed eyebrows (indicated as 'fe'). It is therefore very natural to hypothesize that this non-manual component is the manifestation of *wh*-morphology on the interrogative pronoun in LIS (and in other sign languages, as furrowed eyebrows is very common in interrogatives across sign languages, cf. Kelepir, 2021).

In this paper, we offer two types of arguments supporting this conclusion. The first one involves going deep into one aspect of interrogatives in LIS (Section 2), while the second argument (Section 3) capitalizes on the presence of *wh*-morphology in exclamative clauses.

This paper is organized as follows: section 2 is devoted to content questions in LIS, and we argue on the basis of a detailed analysis of a particular sign, $Q_{artichoke}$, that *wh*-morphology exists in LIS and it is typically expressed non manually (through furrowed eyebrows). We then focus on a special interrogative sign glossed $Q_{artichoke}$, which can co-occur with lexical interrogative elements. We argue that 'furrowed eyebrows' and $Q_{artichoke}$ express two different features that are usually conflated in *wh*-morphology: the first expresses the *wh*-feature defining *wh*-structures, and the latter expresses the Q feature associated with questions.

Section 3 is a first exploration of the syntax of exclamatives in LIS, whose pioneering elicitation method is detailed in §3.1. The hypothesis is that if *wh*-features

correspond to furrowed eyebrows, and *wh*-features are a component of the syntax of exclamatives across languages for principled reasons (Zanuttini & Portner, 2003), we should find furrowed eyebrows in exclamatives as well. On the other hand, if $Q_{artichoke}$, is the realization of the +Q feature characterizing questions, it should not appear in exclamatives. The results of our fieldwork appear to meet this prediction (§3.2). An analysis of exclamatives in LIS capitalizing on Zanuttini and Portner's (2003) seminal theory of exclamatives as widening the domain of quantification is sketched. Section 4 briefly concludes the paper.

2. The *wh*-feature in content interrogatives

As we mentioned, our working hypothesis is that the expression of *wh*-morphology in content interrogatives is the non-manual-marking realized as furrowed eyebrows. By doing that, we assume that 'furrowed eyebrows' is a non-manual sub-lexical unit which is shared by all interrogative pronouns. This hypothesis is consistent with a well-established line of research, although recently challenged by some (cf. Sandler, 2010). Still, this proposal needs to be further specified in order to be mantained. On the one hand, 'furrowed eyebrows' can extend to a bigger portion of the interrogative sentence, including signs that are not inherently interrogative, like the verb ARRIVE in sentence (1).

(1) ————fe
ARRIVE WHO
'Who arrives/has arrived?'

This is not expected if 'furrowed eyebrows' is just a sub-lexical feature of interrogative pronouns. A similar observation, namely that non-manual-markers found on interrogatives pronouns can extend to a bigger portion of the sentence, has been reported for several other sign languages (cf. Cecchetto, 2012 and Kelepir, 2021). Therefore, the question is: why should a sub-lexical feature extend to the entire interrogative sentence (or to a syntactically determined portion)?

Furthermore, there is a specific fact about LIS interrogatives that should be taken into account, namely the behavior of the interrogative sign glossed as $Q_{artichoke}$, which is depicted in Figure 3 (cf. Branchini et al., 2013, for a description of $Q_{artichoke}$).

$Q_{artichoke}$ is very special, because it can be used as a lexical variant for any interrogative sign. The polysemy of $Q_{artichoke}$ can be resolved in three different ways:

(i) the context uniquely identifies the syntactic role of $Q_{artichoke}$ (cf. 2, in which it corresponds to the internal argument of the unaccusative verb);

Figure 3: $Q_{artichoke}$

(ii) $Q_{artichoke}$ is combined with partial or total mouthing of an Italian interrogative pronoun (cf. 3, in which $Q_{artichoke}$ is produced simultaneously with the mouthing of [ku], corresponding to the first syllable of the Italian wh- phrase *quando*, 'when');

(iii) $Q_{artichoke}$ combines with another interrogative sign (cf. 4, in which $Q_{artichoke}$ follows the interrogative sign WHO).

As for its position, $Q_{artichoke}$ patterns with other interrogative signs, namely it sits in a dedicated position in the right periphery of the clause.

(2)

A: ARRIVE $Q_{artichoke}$ (fe)
B: GIANNI
'Who arrived? Gianni.'

(3)

IX_2 LEAVE $Q_{artichoke}$ (fe)
'When are you leaving?'

(4)

ARRIVE WHO $Q_{artichoke}$ (fe)
'Who arrives/has arrived?'

As for the extension of the 'furrowed eyebrows' marking, as we already mentioned, it must occur on the interrogative sign(s) but may spread to a bigger portion of the clause.

Before further elaborating on the role of 'furrowed eyebrows' as *wh*-features, we make clear our assumptions about the formal mechanism underlying *wh*-movement in general. Following fairly standard assumptions in the Minimalist literature (cf. the systematization offered by Adger, 2003), we assume that two features are active in the dependency between the complementizer eventually hosting the interrogative element and determining its scope, and the interrogative phrase. The first one is the *wh*-feature (at least in languages in which this is morphologically expressed). The *wh*-feature alone cannot characterize a clause as interrogative, though. The reason is that this feature can be found in non-interrogative clauses as well (most notably relatives and exclamatives, the latter case to be discussed shortly). Therefore, a second formal feature (let us call it Q) is necessary to mark the clause as interrogative. The mechanism underlying overt *wh*-movement is thus the following: the dedicated C position in the periphery of the clause is marked as interrogative (+Q) while the *wh*-phrase is marked

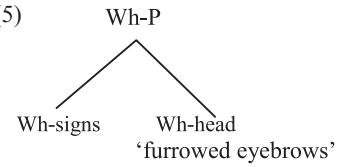
as +*wh*, in accordance with the hypothesis that the *wh*-feature is a sub-lexical feature shared by all interrogative words. C and the *wh*-phrase enter a long-distance operation of Agree, which eventually triggers *wh*-movement to Spec, CP. As a result of this operation, C is valued +*wh* and the *wh*-phrase is valued +Q.[2] This way the sub-lexical feature of the *wh*-phrase plays a syntactic role because it allows the *wh*-phrase to enter into a long distance dependency with C.

Coming to interrogatives in LIS, we need to specify the nature of $Q_{artichoke}$ and its relation with the other interrogative sign it may co-occur with. The most challenging case is sentences like (4), because, prima facie, two interrogative elements that compete for the same position are present at the same time. There are two ways to go.

The first possibility is to analyze $Q_{artichoke}$ as an interrogative particle in the C head and the co-occurring interrogative sign as a phrase sitting in Spec, CP. This would easily fix the problem of co-occurrence, but there are at least three concerns with this hypothesis. The first one is that it would go against a typological generalization defended by Cheng (1997) according to which, if a language has a Q particle only in a given type of question, the Q particle is found in *yes*/*no* questions, not in *wh*-questions. Given that $Q_{artichoke}$ cannot occur in *yes*/*no* questions, if it were a particle, it would violate Cheng's generalization. A second consideration militating against an analysis of $Q_{artichoke}$ as a question particle is that, when it is not accompanied by another interrogative sign, $Q_{artichoke}$ typically co-occurs with a disambiguating mouthing. This suggests that $Q_{artichoke}$ plays the role of a specific Q-sign ('what', 'where', etc.), not that of an underspecified marker of interrogative force. The third problem relates to the distribution of $Q_{artichoke}$, which does not correspond to that of a complementizer. As thoroughly discussed in Branchini et al. (2013), when $Q_{artichoke}$ and the wh-element co-occur, as in (4), they clear form a constituent to the exclusion of the rest of the clause sitting on their left.

For these reasons, we propose a different analysis, namely we argue that the configuration illustrated by (4) is indeed general: the *wh*-phrase is always formed by two categories, although one of them can remain phonologically null. These two categories are a functional head expressing the *wh*-feature, which is realized as the *wh*-non-manual marking 'furrowed eyebrows', and its complement, corresponding to the interrogative sign(s). This makes the case in (4) similar to cases of clitic doubling, in which a DP is doubled by a functional head (the clitic). The tree in (5) reflects the fact that LIS is head final.

(5)



The tree structure in (6) illustrates the position of the *wh*-phrase in the clausal spine: it sits in the specifier position of the C head marked +Q (we assume that Spec, CP branches rightwards in LIS).

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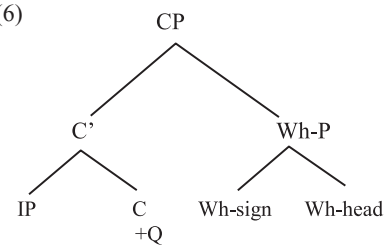
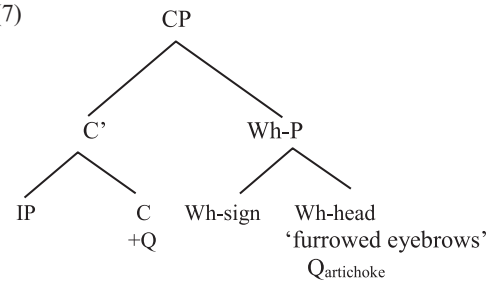
[2] Technically, Agree is established through an uninterpretable [*u*wh] feature which is part of C: C[Q, *u*wh:]. Agree values and deletes the uninterpretable feature.

(6)



We can now go back to the status of $Q_{artichoke}$. Remember that, following standard assumptions in the minimalist literature, we assume that the *wh*-feature is only one of the two features involved in the derivation of interrogative clauses, the other feature being Q. We therefore propose that $Q_{artichoke}$ is the manifestation of the Q feature on the *wh*-phrase. More precisely, remember that the presence of this feature on the *wh*-phrase depends on it establishing an agreement relation with a Q feature in C. A *wh*-item does not need to be interrogative, so it is unvalued with respect to the Q feature. It becomes interrogative only as result of an Agree relation with the C head which is inherently marked +Q. We propose that $Q_{artichoke}$ is a manual expression of this agreement relation on the *wh*-head when it sits in the specifier of a +Q C. Notice that this amount to saying that LIS makes morphologically visible the two features (i.e. the *wh*-feature, expressed by the furrowed eyebrows, and the Q feature, expressed by $Q_{artichoke}$) that are necessarily associated with *wh*-movement in interrogatives, but are usually conflated in spoken languages. The diagram in (7) illustrates this complete picture corresponding to the case in (4), including furrowed eyebrows, $Q_{artichoke}$ and a lexical wh-element.

(7)



This situation is not unusual for sign languages, which (thanks to the multiplicity of simultaneous articulators they use) often make visible morpho-syntactic features and logical operators that are purely abstract in the spoken modality (cf. Schlenker, 2018). If we are on the right track, we predict that $Q_{artichoke}$ should occur in interrogatives but not in other *wh*-constructions, a point that will become relevant in the next section.

Two issues remain to be discussed, namely the occurrence of mouthing when $Q_{artichoke}$ occurs alone and the spreading of the 'furrowed eyebrows'.

As for the latter point, by following a suggestion that has been proposed for morpho-syntactic features expressed non-manually in other sign languages (cf. Neidle et al., 2000, and Pfau & Quer, 2005), we assume that 'furrowed eyebrows' obligatory spreads over the c-command domain (namely the complement) of the functional head expressing the *wh*-feature. As the *wh*-sign is by definition the complement of the

Wh-head, it follows that it is always articulated with furrowed eyebrows. As for the fact that the *wh*-non manual marking can spread over a bigger portion of the sentence, we refer to Cecchetto et al. (2009), who connect this to the observation that Spec, CP tends to be linearized to the right across sign languages. A similar mechanism of *wh*-feature percolation is necessary to account for pied-piping in spoken languages (see classical studies like Cowper, 1987, Grimshaw, 1991, 2000, Webelhuth, 1992 among many others). The only difference, once again, would be that sign languages make this abstract mechanism of feature percolation visible through the spreading of the non manual marker.

Finally, we interpret the mouthing that can co-occur with $Q_{artichoke}$ as a case of code blending. Code blending is a special type of code mixing in which lexical items belonging to two languages belonging to the spoken and the signed modality are articulated simultaneously (Emmorey, 2005): if $Q_{artichoke}$ occurs alone, mouthing has a disambiguating function, much like what happens when a sign is lexically unspecified and mouthing can disambiguate it (a relevant example is the sign for salt/pepper in LIS, which is disambiguated by the mouthing corresponding to a phonologically salient part of the Italian word). Therefore, mouthing in our analysis is not part of the lexical specification of $Q_{artichoke}$ (see Giustolisi et al., 2017 for an experimental investigation suggesting that mouthing is never part of the lexical specification of a sign, but is a case of code blending).

3. The *wh* feature in exclamatives

In order to verify the validity of our hypothesis that 'furrowed eyebrows' is the non-manual expression of the *wh*-feature, in this section we look at another construction which is known to exhibit a *wh*-morphology across languages, namely exclamatives. For example, *wh*-exclamatives have been identified in the following languages (the list is far from being exhaustive and does not include Indo-European languages in which the phenomenon is systematic): Georgian, Hebrew, Hindi, Korean, Mandarin Chinese, Japanese, Vietnamese, Basque and Turkish (Sadock and Zwicky, 1985, Ono, 2006, Etxepare, 2003, Zevakhina, 2016, and Michaelis, 2001). Furthermore, there are principled reasons that may explain the recruitment of *wh*-morphology in exclamatives, as we discuss shortly.

We reason that, if *wh*-morphology is recruited in exclamatives in LIS and if the expression of *wh*-morphology is indeed furrowed eyebrows, we expect exclamatives to be marked by furrowed eyebrows.

In order to check this prediction we created elicitation contexts that strongly invite the production of sentences expressing surprise, as exclamatives often convey surprise. An important methodological caveat should be kept in mind, for exclamatives as well as for any sentence type (see Donati et al., 2017): if we define sentence type as the form that is conventionally associated to a given illocutionary force, we must always be aware that this link is not rigid. For example, although imperatives are the grammaticalized form for order/invitation, the illocutionary act of ordering can be expressed with a declarative ('It is cold in this room') or with an interrogative ('Can

you close that window?') in addition to using an imperative ('Close that window!'). Likewise, even if exclamation is conventionally associated to a certain grammatical form, for example English sentences with an initial *wh*-phrase but no subject-auxiliary inversion (cf. 8), a declarative can be used to the same goal (cf. 9).

(8) What a dangerous person he is!
(9) He is such a dangerous person!

The issue is further complicated by the fact that exclamatives have never been studied in LIS (and for what matters in any other sign language). Given the methodological caveat introduced above, we do not expect to find a unique grammatical form as a result of elicitation but we do expect that, if a form is specialized for exclamation, this should be prevailing in the data. If this grammaticalized form displays furrowed eyebrows, we have an indirect but strong confirmation of our hypothesis that furrowed eyebrows are the linguistic expression of *wh*-features in LIS.

3.1 Data elicitation

Three native signers and a fourth signer who acquired LIS from birth at the Institute for the Deaf before age six participated. For the elicitation, 23 images were used preceded by a context. Participants were asked to react to the pictures by answering a question by the experimenter. All the elicitation procedure took place in LIS and was conducted by the first author of this paper, who is a LIS interpreter. The following are two representative examples.

(10)

Question associated to the image:
'You meet this girl on the street. She is an old friend of yours and you see that she had a baby. What do you tell her? '

Expected answer:
'What a beautiful baby!' Or: 'You had a baby!'

(11)

Question associated to the image:
'What is this guy thinking? '

Expected answer:
'How late it is!'

The elicitation first took place in June 2018 at the University of Milan-Bicocca. The 23 pictures were installed into a Power Point, and were presented to each participant individually. Every answer was videotaped. No further precise instruction was given. Therefore, in some cases the answer was long and complex and in others it was very short.

A second session of data collection took place in December 2018 and involved only one of the four informants. This informant was asked for grammaticality judgments on the sentences produced by the participants of the first data collection session.

3.2 Results

69 responses that conveyed an expression of surprise were obtained. These were analyzed and manually glossed with a special attention to non-manual-markers or manual signs that might be markers of exclamative force (cf. https://osf.io/jtmwk/ for the videos of the sentences and Checchetto, 2021, for a list of glosses in Italian). Their distribution across the 69 responses is summarized in Table 1.

Table 1. Distribution of non-manual markers across responses

Non-Manual Marking in the 69 elicited responses
51 out of 69 responses contained a sentence articulated with **furrowed eyebrows**
17 out of 69 responses contained a sentence articulated with **raised eyebrows**
In 4 out of 69 responses there was no identifiable non-manual marker

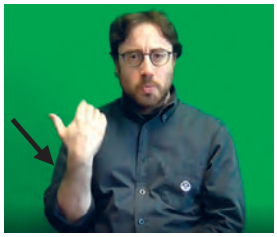
When non-manual marking occurs, it spreads over the entire sentence. In the following examples, we illustrate the three possibilities reported above with three representative sentences: (12) displays furrowed eyebrows; (13) displays raised eyebrows; (14) is an example without any identifiable non-manual marker.

(12) _____fe
MONEY RICH
'How rich you are!'

(13) _____re
CAKE IX$_1$ GET-MAD
'That cake is irresistible'

(14) VERY LAUGH FUNNY TOILET-PAPER EVERYWHERE
'Very funny, toilet paper spread everywhere'

As for manual signs which might be functional markers of the exclamative force, two potential candidates were identified. One is the sign VERY, which occurred in eleven out of the 69 sentences; the other is the sign PALM-UP, which occurred in nine sentences.


VERY


PALM-UP

In fact, the status of VERY is dubious. It is a gesture that indicates intensification, which is very common in the Italian culture. Its use by signers might as well be gestural. When explicitly asked after the elicitation, informants said the gesture is not obligatory. Furthermore, it is not consistently associated to a position inside the sentence, which suggests it is used as a gestural intensifier rather than a functional marker of the exclamative force. PALM-UP is a more plausible candidate for a functional sign. It is very similar to the sign glossed B-INDEX which has been identified as a manual marker of the imperative force in LIS by Donati et al. (2017). In imperatives, this sign is sentence-final and it is found in this final position in six out of the nine sentences in which it occurs in our mini-corpus of exclamatives. Its exact nature remains uncertain at this stage, due to a paucity of the relevant data. Finally, $Q_{artichoke}$ is not attested in exclamatives, at least systematically.

3.3 The analysis of exclamatives

Although our study is explorative, we believe that there is enough evidence to conclude that 'furrowed eyebrows' reliably identifies exclamatives, as this marker occurs quite systematically in the context of our elicitation task. Remember that there is no reason to think that all sentences produced with the elicitation method summarized above are exclamatives. Therefore the fact that furrowed eyebrows appear in 51 out of 69 sentences is a solid result.

A non-negligible number of sentences in our mini-corpus, on the other hand, displayed another marker, namely raised eyebrows. As this non-manual-marking is the one occurring with yes-no questions in LIS, we speculate that these sentences

correspond to total exclamatives in Benincà's (1995) classification. Extending a classification that is very common for interrogatives, Benincà introduces a distinction between partial exclamatives (containing a *wh*-expression, in which the exclamation concerns a single constituent) and total exclamatives (those in which the exclamation embraces the whole content of the sentence). The parallelism between total exclamatives and yes-no questions is reinforced by the fact that in many languages, including Italian (cf. 15) and English (cf. 16), this type of exclamatives can be introduced by the complementizer *if*/*se*, which typically introduces indirect yes-no questions (15 and 16 contain an expletive negation, which makes these sentences unambiguously exclamatives in Italian). From this point of view, the occurrence of raised eyebrows in LIS, which is the morphological marker of yes-no questions, is not surprising.

(15) Se non si è mangiato tutto!
If not refl is eaten all
'He ate it all!'

(16) Boy, if syntax is not fun!

(Zanuttini & Portner 2003, p. 62)

In the rest of this paper, we focus on exclamatives marked by furrowed eyebrows. Based on our findings, we can conclude that LIS adds to the long list of typologically different (and historically unrelated) languages in which exclamatives and content interrogatives exhibit a *wh*-feature. For reasons related to modality (visuo-spatial as opposed to acoustic) this feature is suprasegmental (a non-manual-marker) in LIS while it is typically segmental in spoken languages.

The next question is: why is the same morphological feature shared by interrogatives and exclamatives? What is the underlying common property that can explain this fact? And, related to this, what is the formal analysis to be given to exclamatives?

We believe that the most adequate framework to address these questions is the one developed by Zanuttini & Portner (2003), which we assume here. Their idea is that exclamative force is not *directly* encoded in syntax, say by an exclamative head, but results from a conspiracy of two factors: factivity and widening. By factivity Zanuttini and Portner mean that the propositional content of an exclamative is presupposed. For example, in order to felicitously utter the sentence 'What a wonderful rainbow!' the speaker must assume that there is indeed a wonderful rainbow in front of him/her.

Zanuttini & Portner further propose that exclamatives widen the domain of quantification for the *wh*- phrase introducing the exclamatives. In this respect their proposal is close to Obenauer's (1994) idea that a *wh*-phrase occurring in an exclamative binds a variable for which an appropriate value cannot be found in the contextually given domain. In order to find the appropriate value, the domain of quantification must be widened to include alternative propositions. For example, by uttering the sentence 'What an apartment (she bought)!' one is extending the domain of quantification to include, in addition to the average apartments, exceptionally good or exceptionally bad ones. This widening mechanism is responsible for those aspects of the meaning of exclamatives that relate to 'surprise', 'unexpectedness', 'extreme degree', etc.

The combination of factivity and widening, Zanuttini and Portner propose, has as a consequence that a sentence combining these two properties cannot be an assertion (you cannot assert a propositional content which is presupposed), nor a question (it is pointless to ask a question whose answer is presupposed) nor an order (you do not give an order about something that is presupposed to be true). Zanuttini and Portner conclude that, if each type of root clause must play an illocutionary function, the function which is left to exclamatives is widening the domain of quantification.

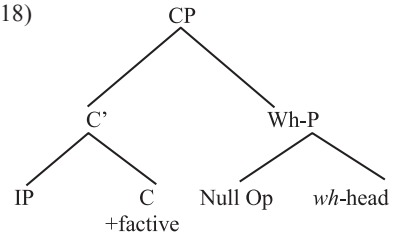
Given this account, the *wh*-morphology is expected in exclamatives as a way to signal the operator-variable dependency which is necessary to trigger the widening mechanism.

We are now ready to go back to LIS exclamatives. We build on the fact that LIS content interrogatives do not need to contain an overt *wh*-phrase, as shown in example (17). We assume that the presence of the *wh*-morphology (furrowed eyebrows), which, given the hypothesis summarized in (5), is the non-manual expression of the functional *wh*-head and suffices to license a null *wh*-operator in its complement position.

(17) ___fe
TIME
'What time is it?'

In the same vein, we propose that in exclamatives marked by furrowed eyebrows the functional head which expresses the *wh*-feature is merged with a null operator. There are still two differences with respect to content interrogatives. The first is that the null exclamative operator is specialized to signal that the domain of quantification over which its variable ranges must be widened. The second difference is the attachment site of the *wh*-phrase. This cannot be the C specialized for interrogative, since it is endowed with the +Q feature. Following Zanuttini and Portner, we assume that in exclamatives the *wh*-phrase sits in the Spec position of a C head endowed with the [+factive] feature which indicates that the propositional content of the sentence is presupposed.[3]

(18)



[3] LIS does not offer direct evidence on how to order the [+Q] head and the [+Factive] head with respect to each other in the extended left periphery identified by Rizzi (1997). However, Zanuttini and Portner (2003) argue that the exclamative head sits in a position that is higher than the interrogative head. They conclude this based on evidence that cannot be reproduced in LIS, i.e. the fact that the Doubly-Filled-COMP filter does not hold in Italian exclamatives and the complementizer follows the *wh*-phrase, as illustrated in (i).
(i) Che freddo che fa!
What cold that makes
'How cold it is'

As for the spreading of furrowed eyebrows, there is a difference between exclamatives and content interrogatives, which appears to confirm our hypothesis. In the former, non-manual-marking must occur on the entire sentence, while in the latter it can be limited to the interrogative sign. We assume that this difference is due to the fact that the exclamative operator is null, but the *wh*-feature (being suprasegmental) needs to spread on some manual material. If the functional head expressing the *wh*-feature takes a manual sign as its complement, as in (some) interrogatives, the non-manual-marking can stop there. If the functional head expressing the *wh*-feature takes a null complement, as in exclamatives, we assume that this head projects its feature to the *wh*-phrase in Spec, CP [+factive]. From this position the *wh*-feature spreads over its c-command domain, namely the entire sentence.

4. Conclusion

Our starting point in this paper was the question whether the identification of 'furrowed eyebrows' as a *wh*-feature, which is often assumed without much explicit motivation, resists a closer scrutiny. In order to answer this question, we extended our investigation from content interrogatives to exclamatives, since there is ample evidence that *wh*-exclamatives are systematically present in typologically and historically distant spoken languages.

As for content interrogatives, we proposed that in LIS 'furrowed eyebrows' is the non-manual expression of a *wh*-feature, acting as the head of functional *wh*-projection that can host in its complement position an interrogative pronoun. We also proposed that the other feature involved in interrogatives, namely the Q feature, can be expressed by the sign $Q_{artichoke}$.

As for exclamatives, as no previous research was available, we built a mini-corpus by using a semi-naturalistic elicitation task. Interestingly, the two main strategies identified in this corpus are the non-manual markers corresponding to content and yes-no interrogatives, respectively furrowed and raised eyebrows. We therefore proposed that the distinction between partial (or *wh*) exclamatives and total exclamatives is attested in LIS as well.

Finally, we proposed a formal analysis for *wh*-exclamatives which stems from Zanuttini and Portner (2003) and is minimally different from the analysis that we offered for *wh*-interrogatives.

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Ser, Estar and *Ficar* in Portuguese Sign Language and European Portuguese[1]

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Abstract

Predicative sentences have been the object of many studies for oral languages (OL), both in Syntax and Semantics: in Syntax, particularly because there are languages with null copula; in Semantics, because there are languages sensitive to the individual / stage-level nature of the predicate, as is the case of Portuguese and Spanish verbs *ser* / *estar*. In linguistic studies on sign languages, predicative sentences have received much less attention. In this paper, we center our attention on predicative sentences with adjectives and nominals, on the one hand, and those with locatives, on the other hand, as we compare Portuguese and Portuguese Sign Language (LGP) and other Sign Languages. While in Portuguese, verbs such as *ser, estar, ficar,* seem to have a predicative nature and to always be expressed, despite the difference between the category and the semantic nature of their predicates, in LGP the differences are much more pronounced. Data indicates that there is a null copula for SER - although two forms have been produced, SOU and NÃO-SOU -, which probably announces a process of grammaticalization. FICAR and ESTAR are null cop-

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ulas with non-locative predicates (individual or stage-level), either with adjectives or nominals, but they are expressed with locatives. The verb ESTAR is expressed with simultaneous mouthing /lala/ (‘there-there’), and may co-occur with a locative INDEX in several constructions. The complexity of the productions suggests a full nature of the verb ESTAR and FICAR, closer to spatial verbs than to copulas.

Keywords: Predicative verbs, Portuguese, sign languages, Portuguese Sign Language, null and non-null copula, spatial verb.

1. Introduction

Predicative sentences, i.e., sentences with a predication assigned to a subject mainly by a nominal, an adjective, a participle or a prepositional phrase, have been the subject of attention of grammarians and linguists for many centuries. One of the most important and interesting aspects is the fact that there are different strategies for the expression of predicative sentences, at least at a superficial level. As Benveniste (1966), Rouveret (1998) and Stassen (2013), among many others, have signaled, in oral languages there are different solutions for the expression of predicative sentences:

(i) a nominal sentence, with juxtaposition of two terms, without a V, as in Russian[2] and Hungarian:

(1) Russian
Mariya uchitel.
Mary teacher
‘Mary is a teacher.’

Russian has a null copula with nominals (1), adjectives (2a) and locative PPs (2b), if the sentence is in the present:[3]

(2) a) Ivan veselyj.
Ivan glad
‘Ivan is glad.’[4]

b) kniga na stole.
book on table
‘The book is on the table.’

In the past (3a,b) and future (3c) tenses, however, it uses a copula:

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[2] The occurrence of the predicative verb is much more complex than suggested, because Russian is a language with case inflection and with aspect and tense forms, with several syntactic consequences.

[3] We thank Darya Antipova, a student of FLUP, for some of the data of Russian.

[4] Note that the English *to be* followed by adjectives is always ambiguous between a stage-level and an individual-level meaning. With locative PPs there is no ambiguity (they are always stage-level predicates). This is why we will not indicate the distinction between *ser* and *estar* in all glosses, marking them only with COP in OL instead.

(3) a) Ivan byl veselyj.
Ivan COP.3SG.PASS glad
'Ivan was glad.'

b) Kniga byla na stole.
book COP.3SG.PASS on table
'The book was on the table.'

c) Kniga budyt na stole.
book COP.3SG.FUT table
'The book will be on the table.'

(ii) nominal sentences, but with an inversion of the word order in comparison with an attributive construction: see the examples in (4a) versus (4b), from Irish:

(4) Irish (Benveniste, 1966, p. 157)
a) infer maith.
good man
'The good man.'

b) maith infer.
man good
'The man is good.'

(iii) insertion of a particle as a signal of assertion, again distinct from the attributive meaning; see the examples (5a) versus (5b), from Tagalog (ART=article; ASS=assertive):

(5) Tagalog (Benveniste, 1966, p. 158)
a) aŋ báta (a)ŋ mabaít.
the child ART good
'The good child.'

b) aŋ bata (a)y mabaít.
the child PART.ASS good
'The child is good.'

(iv) verbal construction, involving a form that is different from the one that expresses existence; in Irish the copula *is* is different from the existence verb *tá*:

(6) Irish (Irslinger, 2015)
a) Is mé an múinteoir.
COP.PRES 1SG ART teacher
'I am the teacher.'

b) Tá trí phersa in Dia.
COP.PRES three person in god
'There are three persons in God.'

(v) the generalization of an Indo-European root *es- meaning 'to be' not only as a copula but also as an existential verb, the solution of most Indo-European languages

(*sum, esse* (Latin), *ser, estar* (Portuguese and Spanish), *être* (French), *essere* (Italian)), as we will see in the following paragraphs (Rouveret, 1998, p. 19).

Among Indo-European languages with predicative verbs, Iberian Romance Languages (mainly Portuguese and Spanish) are remarkable. This is not only due to the existence of a considerable number of predicative verbs, with different aspectual values (as *ficar, permanecer, andar, começar a, acabar de…*), but also because of the opposition between *ser* and *estar*, two copulative verbs that respectively introduce individual-level predicates (Carlson, 1977, Milsark, 1977, Kratzer, 1989, also referred to as "stable / permanent predicates", Cunha 2013, p. 598), as in (7a); and stage-level predicates (Carlson, 1977, Milsark, 1977, Kratzer, 1989, or "episodic predicates", Cunha, 2013, p. 598), as in (7b).

(7) European Portuguese
a) A Maria é inteligente.
the Mary COP.3SG.PRES intelligent
'Mary is intelligent.'
b) A Maria está cansada.
the Mary COP.3SG.PRES. tired
'Mary is tired.'

Ficar also selects stage-level predicates, but with adjectives it expresses a change of state / a resultative meaning (Cunha, 2013):[5]

(8) A Maria ficou cansada.
the Mary COP.3SG.PASS tired
'Mary got tired.'

In Portuguese and Spanish, the verbs *estar* and *ficar* also introduce spatial locative predicates, formed by prepositional phrases (PPs), typically introduced by the preposition *em*, or by locative adverbs:

(9) A Maria está em casa.
the Mary COP.3SG.PRES at home
'Mary is at home'

(10) O caderno está em cima da secretária.
the notebook COP.3SG.PRES on the table'
'The notebook is on the table.'

(11) Os meus filhos estão lá/ aqui / longe / perto.
the my children COP.3PL.PRES there / here / faraway / near
'My children are there / here / faraway / near.'

[5] As the translations of Portuguese examples into English show, the verb *ficar* followed by an adjective with a resultative meaning may be translated by *to get*; contrarily, when followed by a locative PP, it is preferentially translated by *to stay, to remain.*

(12) A Maria ficou em casa.
the Mary COP.3SG.PASS at home
'Mary stayed at home.'

(13) Os meus filhos ficaram lá / além / longe / perto.
the my children COP.3PL.PASS there / here / faraway / near
'My children stayed there / here / faraway / near.'

While such verbs and such values have been often analyzed for oral languages (OL), across sign languages (SL) they remain less studied, and this is also true for Portuguese Sign Language (LGP)[6].

Therefore, the main goal of this paper is to study the properties of predicative sentences with adjectival predicates[7] and locatives in LGP, and to compare them with oral languages, in particular Iberian Romance languages. It is also our goal to compare LGP with other sign languages, in particular Spanish Sign Language (LSE) and Brazilian Sign Language (LIBRAS).

In order to reach this goal, our paper is organized in the following way: in Section 2, we will make a general characterization of copular / predicative verbs in OL, with a special focus on the discussion about the categorial and semantic nature of the constituent that follows the verb; herein, we will also discuss the predicate or the argument nature of locative PPs when following the verbs *estar* and *ficar*. In Section 3 we will discuss predicative verbs in some Sign languages. In Section 4 we will present a brief analysis of these verbs in LGP, based on two preliminary studies and we will discuss their main results. In Section 5 we will present our main conclusions and, finally, in Section 6 the bibliographic references.

2. General characterization of predicative verbs in oral languages

2.1 Some theoretical approaches

All grammarians and linguists agree that in OL there are sentences where the main predication assigned to a subject is made not by a verb but by nominals, adjectives, participles or prepositional phrases. Because of that, in languages which have predicative / copulative verbs like *to be, être, ser / estar*, it is commonly accepted that such verbs neither present categorial nor thematic properties similar to other verbs and that they express a meaning generally assumed to be aspectual.

Since Stowell (1981) it has been assumed that in the syntax of such constructions in OL, copulative / predicative verbs select a small clause, whose predicate is cate-

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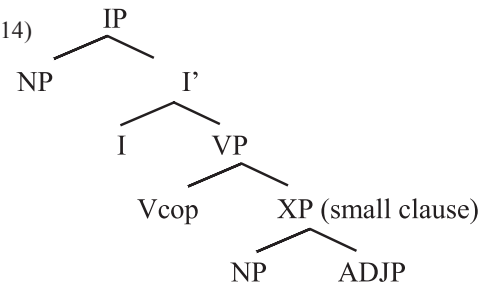
[6] We will use the term 'Língua Gestual Portuguesa' because it was the one adopted by the Portuguese Deaf community and the Constitution of the Portuguese Republic. See also Amaral et al. (1994).

[7] In Portuguese and Spanish, verbal participles like *O vaso está quebrado* 'The vase is broken' or *O homem está preocupado* 'The man is worried' are governed by the same semantic restriction as adjectives (mainly by the individual / stage-level distinction). Our study will mainly focus on adjectives, while nominal predication will be secondary, due to the small number of nominal predicates in our LGP data.

gorially diversified and establishes a relation of predication with the DP subject; the subject normally raises to the surface subject position, in (14) the specifier of IP, giving rise to an SVO pattern. See Duarte (2003) for Portuguese, for both *ser* and *estar*.

(14)



The same type of structure could be shared by OL with a null copula.

In both cases, this sort of approach raises many related questions: Are copulative verbs "synonymous", and is the only difference between them the category of the predicates (NP, ADJP, PP, ADVP) beyond their lexical semantic meaning? Is there any syntactic property corresponding to the semantic properties that distinguish predicative verbs? How is the licensing of a predicative verb achieved, be it null or overt?

Different answers have been presented for these questions. In Generative Syntax, there has been a category solution: Costa (1998, p. 151), despite adopting the classical distinction between individual and stage-level predicates, argues for a different nature of the small clause depending on whether it is selected by *ser* or by *estar: estar* would select TP, *ser* just a small clause, without T:

(15) Ser: - $[_{SC}$
Estar: - $[_{TP}$ $[_{SC}$

In recent studies within Principles and Parameters Theory or the Minimalist Program, the attempt has been to describe the difference between *ser* and *estar* in terms of syntactic features: Luján (1981); Fernandez Leboráns (1995); Zagona (2010); Gallego & Uriagereka (2009); Camacho (2012); Brucart (2012), for Spanish, offer accounts that adopt this line of reasoning[8].

As we have no possibility of presenting all these proposals here, we will limit ourselves to briefly presenting the ones by Zagona and by Brucart for Spanish. We will thus share some of their ideas, specifically the idea that the alternation between *ser* and *estar,* generally assumed to be the effect of semantic factors – the individual/stage-level meanings of the predicates and the perfective/imperfective temporal

[8] Luján (1981) proposes that *ser* selects a predicate with the [– perfective] feature and *estar* selects a predicate [+ perfective], in the sense that a [+perfective] predicate indicates "a delimited period of time whose beginning and end are both known or assumed or at least one of them is". On the contrary, "[- perfective] holds for an unbounded period of time." (p. 176, *apud* Camacho, 2012, p. 464). According to the author, these features are more related to lexical aspect than to situation aspect. For Fernandez Leboráns (1999), *estar* selects a transition to an ending state. Camacho (2012, p. 464), albeit agreeing with these authors on the idea that "the notion of event boundary is relevant for the distribution of *estar"*, argues that "*estar* selects for the beginning of a state". He therefore proposes that it is the feature INCH [+inchoative] that distinguishes *estar* from *ser*.

properties of the predicates – may be the result of syntactic differences. For Zagona (2012)[9] an uninterpretable feature, [*u*P], is responsible for the complements of *estar* (PPs and Aspect Phrases) and for the contexts in which the predicate is temporally delimited. According to her, *estar* always combines with a constituent that expresses some sort of location, whereas *ser* is the "elsewhere" or the unmarked copula. More specifically, *estar* selects an uninterpretable locative feature (a trace of a location feature associated with Latin *stare* 'stand', from which *estar* derives) that must be checked through a complement with certain aspectual properties, as shown in (16):

(16) estar [v [*u*P]….] (Zagona, 2015, p. 305)

Zagona explicitly assumes that, in Spanish, it is the preposition *en* that licenses *estar*.

Brucart (2010, 2012) is inspired by Gallego & Uriagereka (2009), according to whom *estar* is the result of the combination of *ser* with an abstract preposition of terminal coincidence (i.e., *estar* = *ser* + P_T), and in this sense the approach is similar to Zagona's. Analyzing the structure of the predicative domain, Brucart assumes den Dikken (2007)'s notion of attributive relation RP, the Relator Phrase, which is a linker that corresponds to the notion of small clause or PredP. Brucart goes further and argues that the predicative verb is merged above the small clause, in vP or AspP (as in Zagona, 2012). Bringing together all these influences, Brucart (2012) builds a unitary analysis of *ser* and *estar*, starting from the idea that these localization constructions denote an abstract path: while *estar* is the result of an interpretable feature of terminal coincidence (R_T), *ser* is the default, "elsewhere" or unmarked copula, characterized by a feature of central coincidence (R_C).

The following schemas represent this idea (Brucart, 2012, p. 18):

(17) a) [$_{vP}$ estar [$_{RP}$ … R_T….]] (as in *A Maria está cansada*, 'Mary is tired')
b) [$_{vP}$ser [$_{RP}$ … R_C….]] (as in *A Maria é inteligente*, 'Mary is intelligent')

Because *estar* may combine with predicates that express a terminal coincidence feature, it may be employed in examples such as (18), (19) and (20); therefore, Brucart, contra Zagona, shows that the terminal coincidence feature is not necessarily related to the preposition *en* (Spanish)/ *em* (Portuguese):

(18) A Maria esteve divertida.
the Mary COP.3SG.PASS fun
'Mary was [having] fun.'

(19) A Maria esteve a estudar toda a tarde.
the Mary COP.3SG.PASS to study all the afternoon
'Mary was studying all afternoon.'

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[9] In a previous version of her study (Zagona, 2010), one of the ideas was that the distinction between *ser* and *estar* is the result of a syntactic process that gives rise to two *spell-outs* (*ser* and *estar*) of a functional and abstract verb SER. This idea is less present in later versions of the author's research.

(20) A manifestação está na praça.
the manifestation COP.3SG.PRES in the square
'The protest is in the square.'
(in the sense that the protest is going on right now at the square)

Although these two analysis have differences, both authors coincide in the idea that *ser* is the unmarked copula, *estar* behaves as a fully predicative verb, and that *ser* and *estar* are different because they are licensed by different features of the predicates.

2.2 *Estar* and *ficar* with adjectives and with locative PPs: different verbs or the same predicative nature?

With these theoretical considerations as a framework, let us now try to answer the following question: Are *estar* and *ficar* the same verb or different verbs when followed by adjectives and when followed by locatives?

In literature three distinct answers have been presented: i) *estar* and *ficar* with locative spatial expressions are not copulative verbs but rather full lexical verbs that select arguments; ii) *estar* and *ficar* are both copulative verbs; iii) they have a double status (for a presentation see Rebouças, 2019).

We see that the answer to this question is strictly related to the argument / predicate nature of the locative PP that may follow *estar* and ficar.

There are reasons to believe that adjectives and locative PPs do, in fact, have a different nature (beyond the category status):

1 - Locative PPs co-occurring with *estar* cannot cliticize, contrarily to adjectives (cf. Camacho, 2012, p. 471, for Spanish, a situation that is similar to Portuguese); see the difference between (21), which is grammatical with the clitic "o" replacing an ADJP, versus (22), which is ungrammatical, because "o" is replacing a (locative) PP:

(21) O cão está contente, mas o gato não o está.
the dog COP.3SG.PRES glad but the cat not it_{cl} COP.3SG.PRES
'The dog is glad, but the cat is not.'

(22) ??/* O cão está na casa, mas o gato não o está.
the dog COP.3SG.PRES at home, but the cat not it_{cl} COP.3SG.PRES

With *ficar* ('stay/get'), the results of pronominalization / cliticization are similar with locative PPs and non-locatives: both the PP and the adjective predicate cannot cliticize through the pronoun "o", as (23 a) and (23 b) illustrate, while a null predicate, as in (24), can appear in both contexts:

(23) a) * O cão ficou contente, mas o gato não o ficou.
the dog COP.3SG.PASS glad, but the cat not it_{cl} COP.3SG.PASS
b) * O cão ficou em casa, mas o gato não o ficou.
the dog COP.3SG.PASS at home, but the cat not it_{cl} COP.3SG.PASS

(24) O cão ficou contente / em casa, mas o gato não ficou.
the dog COP.3SG.PASS glad / at home, but the cat not COP.3SG.PASS
'The dog was glad / at home, but the cat was not.'

That is, with *estar* an adjective behaves differently from a locative PP regarding pronominalization / cliticization, while with *ficar* both types of predicates behave in the same way.

2 - A locative PP can be deleted with *estar* in Portuguese, whereas a non-locative predicate cannot (cf. Camacho, 2012, p. 471, for Spanish):

(25) O Pedro está em casa? / O Pedro está - ?
the Peter COP.3SG.PRES at home? / the Peter is -
'Is Peter at home? Is Peter -?'

(26) O Pedro está cansado? / *O Pedro está - ?
the Peter COP.3SG.PRES tired? / the Peter is - ?'
'Is Peter tired? / Is Peter - ?'

With *ficar* 'stay' the behavior is similar, perhaps more demanding than with *estar* in terms of contextual conditions and in terms of prosody:

(27) O Pedro ficou em casa? / ?O Pedro ficou -? / O Pedro ficou…, não veio?
the Peter COP.3SG.PASS at home? / the Peter stayed -? / Peter stayed…., not came?
'Peter stayed at home? / Did Peter stay -? / Peter stayed…., did he not come?'

(28) Pedro ficou cansado? / *O Pedro ficou - ?
the Peter COP.3SG.PASS tired? / the Peter got- ?
'Did Peter get tired? / Did Peter get- ?'

In English, as the translations and glosses show, the isolated use of *stay* with a null but recoverable locative is perhaps more acceptable than in Romance languages, because *stay* is not a predicative verb in this language, but rather a lexical verb.

At first sight, these differences seem to show that the nature of the relation between *estar / ficar* and a locative PP, on the one hand, and between *estar / ficar* and an adjective, on the other hand, might be different. For Spanish, Camacho (2012, p. 471) even proposes that a locative PP predicate relates to the V *estar* as an adjunct.

However, these behaviors – both the (im)possibility of cliticization and the (im) possibility of deletion – may be the result of different categories of the predicate and not the result of a different nature of *estar* or *ficar* when they are followed by an adjective or by a locative PP.

The related question is then the following: may a locative PP be a predicate or not? Brucart (2012, p. 13) shows that locative prepositional expressions may always be used as secondary predicates, as in the following examples:

(29) Eu quero a Maria *em casa* às 11h.
1SG want.1SG.PRES the Mary at home at the 11h
'I want Mary at home by 11 p.m..'

(30) Com a Maria *em casa*, começaremos a jantar.
with the Mary at home, begin.1pl.fut to dinner
'With Mary at home, we will begin dinner.'

(31) Através do Skype vejo a Maria *em casa*.
through the Skype, see.1sg the Mary at home
'Through Skype, I am seeing Mary at home.'

The examples show that a locative PP is also a predicate in these three different contexts and, therefore, we will assume that the verbs *estar* and *ficar*, be they followed by adjectives or by locative PPs, are always predicative verbs in EP and in similar OL.

Of course, the two verbs are still characterized by some distinct properties: *estar* is a copula licensed by an interpretable feature of terminal coincidence, according to Brucart (2012), while *ficar* has a locative meaning when followed by a locative PP and a resultative meaning when followed by adjectives (Rebouças, 2019, among others).

One may also see the distributional parallelism between the examples (32a and b); (32c and d):

(32) a) A Maria está cansada. (Raposo, 2013, p. 1330)
the Mary COP.3SG.PRES tired
'Mary is tired'

b) A Maria ficou cansada. (Raposo, 2013, p. 1330)
the Mary COP.3SG.PASS tired
'Mary was (got) tired'

c) O carro está no parque subterrâneo.
the car COP-3SG.PRES in the park underground
'The car is in the underground park.'

d) O carro ficou no parque subterrâneo. (Duarte, 2003, p. 538)
the car COP-3SG.PASS. in the park underground
'The car remained in the underground park.'

This parallelism justifies, therefore, a similar structure for examples such as (33c), where the feature R_T is expressed by the PP, in particular the preposition *em* (here contracted with the definite article "o") and its complement:

(33) $[_{vP}$ estar $[_{RP} \ldots R_T \ldots.]]$ (as in *O carro está no parque subterrâneo*
'The car is in the underground park.')

To sum up: in 2.1. we have seen that Portuguese and Spanish have two different predicative verbs, *ser* and *estar*, the former used with individual-level predicates, the latter used with stage-level predicates. Although there are different analysis, we have shared the view by Zagona and Brucart, who state that *ser* is the unmarked copula and that *ser* and *estar* are different because they are licensed by different features of the predicates.

Estar and *ficar* can also be followed by locative PPs. In 2.2. we have shown that, despite some syntactic differences between adjectives and locative PPs, in both cir-

cumstances these verbs have a predicative status, and locative PPs are always predicates, even in secondary predicate constructions.

With all this in mind, in the next paragraphs, we will study predicative verbs in sign languages and in LGP in particular, in order to verify whether these global conclusions may be maintained or whether predicative verbs with locatives behave differently than predicative verbs with adjectives and nominals in these manual-visual languages.

3. Previous studies on predicative verbs in sign languages

Predicative verbs in sign languages have received little attention in linguistic studies. Padden (1988, 1990), in his well-known typology of verbs, refers to spatial verbs, which do not carry person, number or aspect markers but accept locative affixes. These affixes are included in the syntactic space, since they represent the spatial Locus (e.g., pôr 'put', ir 'go', vir 'come'). However, he does not relate this class with predicative verbs.

However, as we will see, some sign languages have locative markers associated to predicative verbs. Some questions are therefore justified:

(i) Do sign languages present the same variety of expression of predicative verbs, similar to OL, as we have seen in the Introduction?
(ii) To what extent are predicative verbs related to spatial verbs?
(iii) Do sign languages express predicative verbs and, if yes, are they true copula verbs or are they similar to full verbs?

We will now present how some sign languages build predicative sentences, with nominals, adjectives and locatives.

American Sign Language (ASL) has a null copula, as in (34). Aarons (1994), building on Liddell (1980), analyzes several contexts of ellipsis, verbal deletion and null copula, and argues that the Non-Manual Marker (NMM) 'hn' ('head nod') is mandatory in contexts where a V was suppressed or in null copula constructions, as in (34).

(34) _____hn
JOHN DOCTOR
'John is doctor.'

In ASL head nods have also been argued to be edge markers for signs, phrases, and sentences (Wilbur, 2000, p. 229). This is important because in this Sign language, traditionally assumed to have a null copula, some sort of Non-Manual Component characterizes predicative constructions.

Jantunen (2007) has studied equative sentences (identificational sentences) in Finnish Sign Language (FinSL), a type of sentence practically absent in our corpus of LGP. He studied different types of equative sentences that obey to a general form (NP) NP + (PI+) NP, where the first NP in parentheses constitutes an optional marked topic and PI is a mouth gesture that represents a semantically opaque and optional sign, an element of modal certainty that may be in a process of grammaticalization into a copula.

Important for our research is the fact that this sign may also be used in predicative non-equative sentences, like (35):

(35) NAINEN PI KAUNIS
woman PI beautiful
'The woman is beautiful.' (Jantunen, 2007, p. 21; *Suvi* 466/3)

According to Jantunen and regarding (35), the sign PI is best analyzed as underlining the signer's personal certainty about the beauty of the woman.

Summarizing, in FinSL the sign PI used in equative sentences and in certain predicative sentences is considered a modal device, expressing certainty, and, according to Jantunen (2007), this sign may be in a process of grammaticalization into a copula. As we will see below, in Spanish Sign Language (LSE), a similar process seems to be occurring in predicative sentences with locatives.

For LSE, Herrero-Blanco & Salazar-García (2005, p. 288) show that there are different types of non-verbal predicative constructions, as they noticed that in examples like (36) there is null copula:

(36) a) 3sg MY FRIEND[10]
he/she my friend
'{he /she} is my friend.'

b) CAT ANIMAL
cat animal
'A cat is an animal.'

With the locative meaning, the same authors point out that there is no verb, but there is an (indirect) deictic sign with a locative non-referential value, which they represent by the gloss 'THERE(i)' (Herrero-Blanco & Salazar-García, 2005, p. 300), as in (37).

(37) a) MY FRIEND ALICANTE THERE(i)
my friend Alicante there
'My friend is in Alicante.'

b) CAR GARAGE THERE(i)
car garage there
'The car is the garage'

c) MEETING OFFICE THERE(i)
meeting office there
'The meeting is in the office.'

This sign is realized with the index finger of the dominant hand performing a diagonal movement from the dominant to the non-dominant side, ending at a point away from the body (Herrero-Blanco & Salazar-García, 2005, p. 299). This indirect deixis sign, even without an identified referential function, must follow the predicate, not only with human entities, like MY FRIEND in (37a), but also with non-human entities, such as CAR in (37b), and even with events, as MEETING in (37c).

In all examples in (37), the indirect deixis sign THERE(i) behaves like a copula, it is semantically empty or at least redundant, and it does not co-occur with verbs that

[10] We will maintain the examples, glosses and translations as in the original.

incorporate the semantic feature of locative, as STAY. Compare the grammaticality of (38a), which involves a sign that is a copula (with a similar behavior of the Spanish *estar*), with the ungrammaticality of (38b), where the sign STAY, a true verbal predicate, which is not semantically empty (with a continuative meaning close to *ficar*), cannot co-occur with THERE(i) (Herrero-Blanco & Salazar-García, 2005, p. 301).

(38) a) MY FRIEND GARAGE THERE(i)
my friend garage there
'My friend is in the garage.'
b) MY FRIEND GARAGE STAY *THERE(i)
my friend garage stayed there

Such indirect deictic sign contrasts with the direct deictic sign, as in (39a, b), where no copula is realized, but where the deictic signs, due to the proximity or distance of the location, carry a true referential value and yield a strong visual effect.

(39) a) MY BOOK HERE(d)
my book here'
'My book is here.'

b) BOSS OFFICE THERE(d)
boss office there
'The boss's office is there.'

To sum up, in nominal predicative sentences there is no copula in LSE, as in (36); in locative constructions, a sign of indirect deixis "THERE(i) has undergone a process of grammaticalization by which it has stopped being a deictic element to become a non-verbal predicativizing copula" (Herrero-Blanco & Salazar-García, 2005, p. 300).

In Brazilian Sign Language (LSB or LIBRAS), not only stage-level predicates but also individual-level predicates have null copula, as shown in (40), presented by Veloso (2008, p. 122).

(40) a) MARIA PROFESSORA
Mary teacher
'Mary is a teacher.'

b) hOJE MUITO QUENTE
today very warm
'Today is very warm.'

c) liVRO VELHO
book old
'The book is old.'

With locative predicates, the data is similar and the copula is null, as in (41) (Veloso, 2008, p. 123):

(41) a) MULHER CASA
woman house
'The woman is in the house.'

b) livRO MESA
book table
'The book is on the table'

There is, however, some variation. Veloso assumes that for some deaf who received oral education "there is a verb normally translated as the [locative] *estar* (…) despite the argument that its use is not absolutely necessary" (Veloso, 2008, p. 124, our translation). This sign ESTAR is represented in Figure 1, originally presented in Quadros & Karnopp (2004, pp. 183,184), which shows this sign as used in (42), from data collected in Rio Grande do Sul.

(42) MULHER ESTAR HOSPITAL[11]
woman v hospital
'The woman is in the hospital'

Figure 1: sign for ESTAR
(Source: Quadros & Karnopp, 2004, pp. 123, 124; reproduced by Veloso, 2008, p. 124.)

According to the same author, there is also another sign for ESTAR, presented in the dictionary by Lira & Souza (2006); however, this sign (reproduced in Figure 2) is also used with the meaning of FICAR and "the verb interpretation is more related to a permanent than to a transitional state." (Veloso, 2008, p. 125, our translation).

Figure 2: sign for ESTAR with meaning of FICAR
(Source: Lira & Souza, 2006; reproduced by Veloso, 2008, p. 125.)

Finally, in LIBRAS there is also a verb that corresponds to SER used with an emphatic value: it could be used, for instance, in a context "where a deaf (A) asks to another deaf (B) to take a book from a bookshelf. B indicates several books and A produces NO, NO, NO as for several books. When B indicates the right book, A produces

[11] In the original: MULHER <BICICLETA CAIR>r ESTAR HOSPITAL, 'the woman who fell from her bike is in the hospital', containing a relative clause. We have deleted this clause, because it is not relevant for our discussion.

the emphatic SER, which can be interpreted as 'that's the one'." (Veloso, 2008, p. 125, our translation).

Summarizing: although there is some variation, data from LIBRAS shows a similarity between locative copulative sentences and non-locative copulative sentences, namely the use of null copula in both cases. That is, there is no sign for SER (but there may be a sign for an emphatic SER); there is no mandatory sign for ESTAR, but some deaf people may use the sign ESTAR with the meaning of FICAR.

4. Predicative verbs in Portuguese Sign Language

In order to analyze the (possible) use of predicative verbs in LGP, we have conducted two studies that will be presented in the following sections.

4.1. Study I

In this section we will present Study I, related to copulative sentences with ESTAR and FICAR in LGP, with locative and non-locative interpretation. In section 4.1.1. we will present the methodology and in section 4.1.2. we will describe the results.

4.1.1. Data and methodology

In Study I[12], we collected a sample composed of productions of four deaf informants and one hearing informant. In Table 1, the characteristics of the participants are presented.

Table1 – Participants' characteristics in study I

Participants	Age	Gender	Age of LGP acquisition	Degree of Hearing Loss	Profession
1	34	M	birth	Profound	LGP teacher
2	41	M	6 years	Profound	Factory employee
3	30	M	6 years	Profound	Unemployed
4	39	F	12 years	Moderately severe	Educational action assistant
5	34	F	15 years	----	LGP teacher

For the elicitation of the LGP productions, we presented some simple declarative sentences to the informants, written in Portuguese and serving as a visual verbal stimulus, like the ones presented in (43).

[12] Study I was already presented in a poster in the *I Meeting on LGP and other Sign languages*, November, 26-27, 2015, Porto (Choupina et al., 2015).

(43) Sentences-stimulus examples

a) Os meus filhos estão na escola.
'My children are in school.'

b) Ontem, eu fiquei em casa.
'Yesterday I stayed at home.'

a) Eles ficaram em Lisboa.
'They stayed in Lisbon.'

b) O bebé está com medo.
'The baby is afraid.'

c) Hoje, a Joana está bonita.
'Today Joana is beautiful.'

d) O rapaz ficou em pânico.
'The boy was (lit. stayed) in panic.'

e) A senhora ficou pálida.
'The lady was / got pale.'

The productions by the informants were recorded on video and transcribed into LGP glosses. Here we have the main results of our first experiment.

In total, 50 LGP productions were registered, 15 with locative meaning and 35 with predicative meaning (stage-level predicates, non-locative). Table 2 represents the distribution of the signs equivalent to Portuguese *estar* and *ficar*.

Table 2 - Productions in LGP in Study I

Verbs	**Locative meaning**	**Predicative meaning (stage-level predicates)**	**Total**
Estar in Portuguese	5	20	25
Ficar in Portuguese	10	15	25
Total	15	35	50

4.1.2. Results

A) Locative meaning: in sentences with *estar em* and *ficar em* with locative meaning, the signers used manual signs which may be interpreted as a verbal form, as indicated in (44).

(44) a) FILHO POSS$_1$ DOIS ESCOLA ESTAR-EM [13] _____/lala/ (signer 3, study I)
child my two school V-LOC
'My two children are in school.'

[13] /lala/ = mouthing (see figure 3).

b) ESCOLA FILHO POSS$_1$ INDEX$_x$ ESTAR-EM (signer 1, study I)
/lala/
school son my INDEX.LOCI(X) V-LOC
'My son is in school.'

c) ONTEM CASA INDEX$_1$ FICAR-EM CASA (signer 3, study I)
cll[14]
yesterday home 1SG V-LOC home
'Yesterday I stayed at home.'

d) INDEX$_{3pl}$ FICAR-EM LISBOA (signer 3, study I)
cll
3pl V-LOC Lisbon
'They stay in Lisbon.'

All the informants produced locative predicates in sentences like those in (44), although with different forms. For ESTAR, in (44a, b), two variants were observed: variant A (Figure 3) was used by 4 of the 5 participants. In this variant A, the signer uses just one hand with an 'Open Hand' handshape, oriented towards a non-specific Locus in space, with a repeated wiggling of his fingers. In variant B, the signer used both hands, palm oriented downwards and with a short movement, without repetition, followed by a suspension. In both variants, the sign is accompanied by a Non-Manual Marker (NMM), the mouthing /lala/ 'there-there' (Figure 3).

In the sentences with FICAR (44c and d), the LGP productions were quite homogeneous: 4 out of 5 signers used variant A with the "F" handshape (Figure 4), a configuration from the LGP manual alphabet, with an oblique movement followed by a suspension, towards a non-specific Locus in the syntactic space in front of the signer. The remaining signer produced the verb with an 'Open Hand' handshape, similar to the one used for ESTAR, but without repetition and without a NMM, as in variant B for FICAR.

Figure 3 - Sign for ESTAR – Variant A (locative meaning) (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

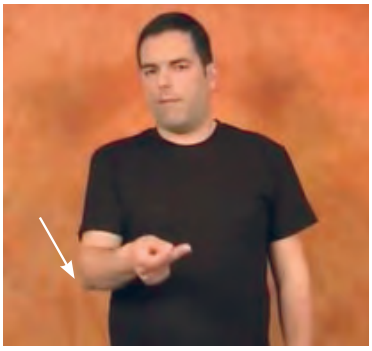

Figure 4 - Sign for FICAR – Variant A (locative meaning) (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

Starting from these results, we can conclude that locative ESTAR and FICAR are distinct verbs in LGP. In the realization of the two verbs, we have noticed a difference in the expression of a NMM: i) with ESTAR a mouthing /lala/, 'there-there', is realized si-

[14] cll = compressing the lower lip with the upper teeth (see Figure 4)

multaneously, with tongue vibration in the open mouth (Figure 3, above); ii) in FICAR the NMM consists of a compression of the lower lip by the upper teeth (Figure 4, above).

Four out of five participants realized these NMMs, which are specific of each verb. No signer used the verb FICAR when the sentence in Portuguese included *estar*, but one signer produced the verb ESTAR when the sentence written in Portuguese included *ficar*: for the stimulus sentence *Eles ficaram em Lisboa* ('They stayed in Lisbon'), signer 5 produced the verb ESTAR with the mouthing /lala/, 'there-there' (variant A).

B) Predicative meaning, with stage-level predicates (non-locative): in sentences with a stage-level predicate, there is a null copula: only the subject and the so-called subject predicate are signed, as in (45).

(45) a) BEBÉ MEDO (signer 2, study I)
baby afraid
'The baby is afraid.'

b) SENHOR^JOGO CANSADO (signer 5, study I)
player tired
'The player is tired.'

c) J-O-A-N-A BONITA HOJE (signer 1, study I)
Joana beautiful today
'Today Joana is beautiful.'

We have noticed that in 20 productions, 85% had a null copula; however, three productions involved a verb form, similar to the aforementioned locative meaning of ESTAR. We present the results for the four stimulus sentences in Table 3.

Table 3 – Occurrences of ESTAR with stage-level predicates

Stimuli	Null copula	Locative ESTAR (variant A)	Locative ESTAR (variant B)
O bebé está com medo. 'The baby is afraid'	4 (80%)	1 (20%)	
O atleta está cansado. 'The player is tired'	4 (80%)	1 (20%)	
Hoje, a Joana está bonita. 'Today Joana is beautiful'	5 (100%)		
Ela ontem estava muito inteligente. 'Today she was very intelligent'.	4 (80%)		1 (20%)

Some sentences had a resultative meaning, with stage-level adjectives or nominals (those that would use *ficar* in EP or *get* in English); moreover, 60% of the productions had null copula, as in (46).

(46) a) PÂNICO RAPAZ (signer 3, study I)
panic boy
'The boy panicked.'

b) MULHER^SENHOR SUOR (signer 2, study I)
lady sweat
'The lady turned pale.'

For sentences with *ficar*[15] in the Portuguese stimuli with a stage-level predicate, there was a total of 15 productions, 60% of which involved a null copula. In those sentences in which a verb was expressed, 26.6% included a variant of the locative (variant C, as described in footnote 16), distinct from the other forms expressed with a locative meaning in movement speed and frequency. The remaining 13.4% corresponds to two productions, expressed with the locative FICAR in variant B (Table 4).

Table 4- Occurrences of FICAR with stage-level predicates

Stimuli	Null copula	Locative FICAR (variant C)[16]	Locative FICAR (variant B)
O atleta ficou cansado. 'The player is tired'	2 (40%)	2 (40%)	1 (20%)
O rapaz ficou em pânico. 'The boy was (l. stayed) in panic'	3 (60%)	1 (20%)	1 (20%)
A senhora ficou pálida. 'The lady stayed / got pale'	4 (80%)	1 (20%)	

In Table 5, we present a summary of properties of the different variants found for ESTAR and FICAR.

Table 5 – Properties of the different variants found for ESTAR and FICAR

Parameters	ESTAR		FICAR		
	Variant A	Variant B	Variant A	Variant B	Variant C
articulators	One hand	both hands	One hand	One hand	both hands
handshape	"Open Hand"	"Open Hand"	"F"	"Open Hand"	"Open Hand"
movement	with repeated movement	short movement, without repetition	oblique movement followed by a suspension	without movement	with a short movement repeated twice, followed by suspension
orientation	tendentiously down	tendentiously down	for signer	tendentiously down	tendentiously down
Locality	non-specific	non-specific	non-specific	non-specific	non-specific
Non-Manual Market (NMM)	mouthing /lala/ 'there-there'	mouthing /lala/ 'there-there'	compressing the lower lip with the upper teeth	without NMM	without NMM

We acknowledge that the methodology used in the study is not ideal, because the stimuli used for LGP data elicitation were presented in written Portuguese, which may induce a negative transfer between the two languages. However, the fact that the stimuli included similar elements, but with signers producing signs associated with verbs in

[15] The semantics of *ficar* is complex in EP; in this study only some of its values interest us (see Rebouças, 2019).

[16] FICAR in variant C is realized as in variant B, with the difference that it involves a fast repetition of movement; the signer used both hands with a handshape in "Open Hand", downward oriented, with a short movement repeated twice, followed by suspension. So, it is different from variant B of ESTAR, due to the absence of an NMM.

some conditions and not in others, already introduces a considerable difference between locative and non-locative productions.

Therefore, based on these first data produced by five signers in 2015, we could establish the following conclusions: i) for locative meaning, signers use an overt sign that can be spatially modified to target a locus in syntactic space; (ii) with non-locatives (even with change of state / resultative predicates), there is a tendency to use a null copula, although it isn't absolutely systematic (85% of the data).

Other studies are therefore justified, to build either from data that are not elicited by written Portuguese or from spontaneous signing.

4.2. Study II

In this section we will present Study II[17], which focuses on copulative sentences with ESTAR and FICAR, with both locative and non-locative meaning, and with SER as well. In 4.2.1 we present the methodology and in section 4.2.2. we describe the results.

4.2.1. Data and methodology

We have conducted an LGP search in the *corpus* of the multilingual dictionary *Spread the Sign* (https://www.spreadthesign.com/pt/); in the category "sentences", we searched for the Portuguese verbs *estar, ficar* and *ser* in inflected forms of the Simple Present and in the Simple Past, which gave us direct access to sentences in Portuguese and in LGP (in videos). For our analysis, we have assembled only simple and (mostly) declarative sentences.

In total, 88 LGP productions were collected, including six with locative meaning and 82 with predicative meaning: 25 stage-level predicates and 57 individual-level predicates (Table 5). From the productions with individual-level predicates, 29 occur with nominal predicates and 28 with adjectival predicates.

Table 5– Occurrences of LGP productions in Study II

Different values		Number of sentences	%
Locative meaning		6	6.8%
Stage-level predicates		25	28.4%
Individual-level predicates	nominal predicates	29	33%
	adjective predicates	28	31.8%
Total		88	100%

[17] This study has already been presented at the *XXXV National Meeting of the Portuguese Linguistics Association*, Braga, October 2019, whose preliminary version was published by Morgado & Brito (2020).

4.2.2. Results

A) With a locative meaning: in the six sentences (6.8% of all analyzed sentences), a verb form corresponding to ESTAR was always expressed by way of a handshape "Open Hand" (Figure 3, repeated below as Figure 5), the same as variant A found in study I. It is preceded and / or followed by an INDEX with locative interpretation (INDEX.LOCI, also in (48)), with simultaneous realization of mouthing /lala/, meaning 'there-there', such as in the examples below (Figure 6)[18].

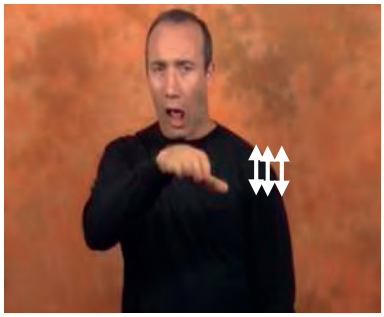

Figure 5: Sign for ESTAR (locative meaning) (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

Figure 6: INDEX with locative interpretation (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

The examples in (47) and (48) include ESTAR with locative meaning and the corresponding photos of the whole sentences illustrate the complexity of the productions:

(47)

/coca.cola/				/lala/
C-C	FRIO^ABRIR	$INDEX_x$	ESTAR-EM	$INDEX_x$++
coca-cola	cold.open	INDEX.LOCI(x)	V-LOC	INDEX.LOCI(x)

'Coca-Cola is in the fridge.'

/coca.cola/				/lala/
C-C	FRIO^ABRIR	$INDEX_x$	ESTAR-EM	$INDEX_x$++

Figure 7: sentence (47) (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

[18] All the examples may be observed in the Dictionary *Spread the Sign*, https://www.spreadthesign.com/pt/.

(48)

	/ff/	mouth: 'O'			/lala/
MULHER^ CASAMENTO	POSS$_1$	HOSPITAL	INDEX$_x$	ESTAR-EM	INDEX$_y$++
woman.wedding	POSS.1SG	hospital	INDEX.LOCI(X)	V-LOC	INDEX.LOCI(Y)

'My wife is at the hospital.'

	/ff/	mouth: 'O'			/lala/
MULHER^ CASAMENTO	POSS$_1$	HOSPITAL	INDEX$_x$	ESTAR-EM	INDEX$_y$++

Figure 8: sentence (48) (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

We see that the locative INDEX that precedes or follows the verb sign seems to act as a deictic sign with a non-referential locative value and may be modified according to the proximity of the Locus that the signer intends to point at in the syntactic space. In sum, the verb signs and this locative INDEX must spatially agree, i.e., they must target the same locus, which suggests a strong relation of selection, to which we will come back later in this study. Below, we summarize the properties that characterize (47) and (48) regarding the locative INDEX and the verb occurrences:

(ii) During the realization of signs, the signer's eye gaze points to an equivalent point in space (47) (see the blue arrows in Figure 7);

(iii) The signer's facing is directed to the same point as his eyes (47);

(iv) The signer's body leans slightly backwards, i.e., to the opposite side of the pointing (48);

(v) A mouthing /lala/, 'there+there', is produced during the realization of signs corresponding to the locative INDEX and the verb occurrences (47 and 48).

FICAR with a locative meaning, whether spatially or temporally delimited, is also expressed as a manual sign, with the same signs that were found in the examples of Study I. This confirms the study's main conclusions: when there is a locative meaning, the verb is realized in two variants, with handshape in "F" (Figure 9) or in "Open Hand" (Figure 10).

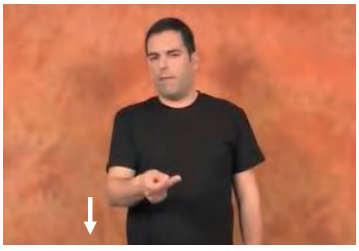

Figure 9: sign for FICAR (handshape in "F" with locative interpretation (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

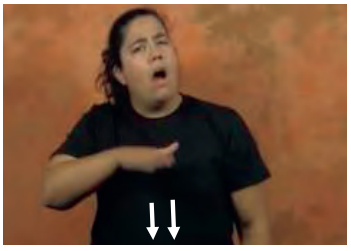

Figure 10: sign for FICAR (handshape in "open hand" with locative interpretation (Source: Spread the Sign, https://www.spreadthesign.com/pt/)

In this study there were no declarative sentences with FICAR with locative meaning, only interrogative and exclamative ones, and this is why they were not analyzed any further.

B) With stage-level predicative meaning (non-locative): out of 25 sentences, 24 included a null copula, 21 of which corresponded to *estar* (49) and 3 to *ficar* (50) in EP:

(49) a) DOENTE
ill
'[I] am ill.'
b) HOJE DIA LINDO
today day beautiful
'Today is a beautiful day.'

c) ELEVADOR PRESO
lift stuck
'The lift is stuck.'

d) COMIDA PALADAR PERFEITO
food taste perfect
'The food is delicious.'

(50) CARRO BATER INDEX$_3$ FERIR
car strike [accident] 3SG injured
'He got/ was injured in a car accident.'

C) With individual-level predicates: out of 52 productions, 27 involve a null copula, 23 express the copula through a verb form, and 2 use an alternative form (Table 6).

Table 6 – Distribution of sentences according to the expression of the copula with individual-level predicates

Individual-level predicates	null copula	verb form	another	total
nominal predicates	11	17	1	29
adjectival predicates	16	6	1	23
total	27 (51.9%)	23 (44.3%)	2 (3.8%)	52 (100%)

With nominal predicates we have 40.7% of null copula; with adjectives, 59.3%. Examples of both types are presented below in (51) and (52), respectively.

(51) a) GALLAUDET PRIMEIRO UNIVERSIDADE PESSOAS SURDO PRÓPRIO
Gallaudet first university people deaf own
'The Gallaudet University was the first university for deaf people.'

b) INDEX$_3$ PADRE JÁ
3SG priest yet
'He was a priest.'

(52) a) BEBÉ BONITO^ESTE
baby nice this one
'The baby is nice.'

b) TIGRE ANIMAL PERIGO
tiger animal dangerous
'Tigers are dangerous animals.'

We see that when the predicate is an individual-level predicate, associated with what Brucart calls an abstract relation of central coincidence, there is no verb; so, there is a null copula.

The constructions with a verb form corresponding to SER (44.3%, 23 of 52) contain nominal predicates, with a sign corresponding to SOU ('I am') in circa 94% of the productions and NÃO-SOU ('I am not') in circa 6%. With adjectival predicates, the productions include the same signs (SOU / NÃO-SOU) in the same percentage (50%). We present the data in Table 7.

Table 7 – Distribution of the forms for individual-level predicates with SOU and NÃO-SOU

Individual-level predicates	with sign SOU ('I am')	with sign NÃO-SOU ('I am not')	total
nominal predicates	16 (94.1%)	1 (5.9%)	17 (100%)
adjectival predicates	3 (50%)	3 (50%)	6 (100%)

Figures 11 and 12 display the signs for SOU and NÃO-SOU, as used in examples (53) and (54):

Figure 11: sign for SOU (Source: https://www.spreadthesign.com/pt/)

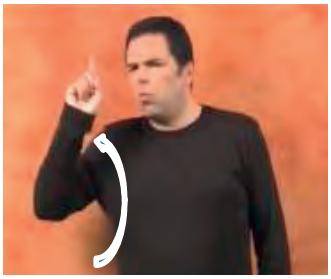

Figure 12: sign for NÃO-SOU (Source: https://www.spreadthesign.com/pt/)

(53) ht, cpl & ce[19]
MÉDICO SOU
doctor COP.1SG.PRES
'[I] am doctor.'

(54) ht, cpl & ce
a) SOLTEIRO SOU
single COP.1SG.PRES
'[I] am single.'

[19] ht = head tilt; cpl = compressed and projected lips; ce = closed eyes.

b) SURDO INDEX$_1$ NÃO-SOU
cpl/ce
deaf 1SG not-COP.1SG.PRES
'I am not deaf.'

In the examples, the realization of SOU / NÃO-SOU ('I am / I am not') is probably related to focus. We should also point out that it is the same signer who produces the copula corresponding to SOU in all examples, which might suggest that we are dealing with an individual variant or a sign in a grammaticalization process.

4.3. Discussion of the data

We have seen that, like some other sign languages, in particular ASL, FinSL, LSE and LIBRAS, LGP has a null copula in non-locative predicative sentences both with adjectival and nominal predicates, and either with individual or stage-level predicates.

In these circumstances, we could argue that LGP uses nominal sentences, with: i) juxtaposition of two terms without a verb (as in some OL, like Russian and Hungarian), as in (49a), BEBÉ MEDO (*baby afraid*, 'The baby is afraid'), and ii) an inversion of the word order (as in Irish), as in (50a), PÂNICO RAPAZ (*panic boy*, 'The boy panicked').

However, other phenomena suggest that sentences in sign languages do have a VP in predicative and non-predicative contexts. How does one analyze them?

At first sight, Zagona's and Brucart's analysis are not adequate for sign languages, because their model starts from OL with prepositions and with the distinction of *ser / estar*. As a matter of fact, sign languages do not commonly employ (spatial) prepositions and in many contexts they have null copula, as we have seen before.

However, we have seen that Brucart develops a proposal according to which *estar* is, in general, related to a feature that codifies terminal coincidence and that does not need to be related to a preposition; and *ser*, considered the unmarked copula, is in fact related to an abstract preposition of central coincidence.

What we have seen is that in LGP the copulative verb is not expressed when it selects a non-locative predicate, not only when this predicate codifies a terminal coincidence feature, as in (55), but also when it codifies a central coincidence feature, as in (56). That is, in LGP in both contexts there is a null copula:

(55) … [$_{vP}$ 0 [$_{RP}$ … R_T….]] (for MARIA CANSADA)
(56) … [$_{vP\,0}$ [$_{RP}$ … R_C….]] (for MARIA INTELIGENTE)

In contrast, predicative sentences with a locative meaning contain verb forms ESTAR or FICAR, which correspond to the EP verbs "estar" and "ficar" and the syntax of these sentences seems much more complex. We will now summarize the main results for locatives.

ESTAR is expressed in our studies with two variants: i) variant A, which is the most frequent variant – one hand with handshape "Open Hand", palm oriented downwards for a non-specific Locus, in suspension, but with a repeated wiggling of fingers, and accompanied by a NMM (found in both studies, Figures 3 and 5); and ii) variant B

– both hands with the same handshape, "Open Hand", both oriented downwards for a non-specific Locus, in suspension, but with a short movement, without repetition, with NMM (first study).

The sign for FICAR is expressed in our studies with three variants: i) with handshape "F", with an oblique movement followed by a suspension in a non-specific Locus in the syntactic space (found in both studies, Figure 4); ii) variant B – both hands with the same handshape, "Open Hand", both oriented downwards towards a non-specific Locus (LOCI) in suspension, but with a short movement, without repetition and without NMM (first study); iii) variant C – similar to variant B, but with a short movement repeated twice with wrist flexion, without NMM (first study).Variants B and C of FICAR are similar to variant B of ESTAR but without an NMM.

A similar situation was found in LIBRAS. Remember that this language does not use copula in general; nevertheless, in two different studies, two signs for ESTAR were found, one of which was reinterpreted as FICAR (Veloso, 2008, p. 125, see Figure 2 in section 3.2. of this chapter).

Let us now analyze in more detail the nature of the sign that we have considered an INDEX ($INDEX_{y\ or\ x}$/ INDEX.LOCI). This sign does not co-occur with FICAR. Therefore (57b–d), which are three alternatives to (57a), are ungrammatical, according to the judgements of a Deaf signer that we have consulted in order to confirm the compatibility of these constituents:

(57) a) ONTEM CASA $INDEX_1$ FICAR-EM CASA (signer 3, study I)
yesterday home 1SG V-LOC home
'Yesterday I stayed at home.'

b) *ONTEM CASA $INDEX_1$ $INDEX_x$ FICAR-EM CASA
yesterday home 1SG INDEX.LOCI(X) V-LOC home

c) *ONTEM CASA $INDEX_1$ FICAR-EM $INDEX_x$ CASA
yesterday home 1SG V-LOC INDEX.LOCI(X) home

d) *ONTEM CASA $INDEX_1$ $INDEX_{y,x}$ FICAR-EM $INDEX_x$ CASA
yesterday home 1SG INDEX.LOCI(X,Y) V-LOC INDEX.LOCI(X) home

We conclude then that this locative INDEX in LGP behaves like the deictic sign with a non-referential locative value used in LSE, as identified by Herrero-Blanco & Salazar-García (2005), and which they call an indirect deictic 'THERE(i)': i) it is realized with the index finger of the dominant hand, in a diagonal movement from the ipsilateral to the contralateral side, ending at a point away from the body; ii) it does not encode any identified referential function; ii) it does not co-occur with FICAR-EM ('stay').

However, this locative INDEX ($INDEX_{y,x}$) presents us with some differences when compared with the sign 'THERE(i)' of LSE, in particular: i) it co-occurs with the verb; ii) it may be produced before the verb, after the verb and in both pre- and post-verbal positions; iv) the post-verbal INDEX is always repeated; v) it is always produced with the mouthing /lala/, 'there+there'.

These different options are summarized in (58):

(58) a) /lala/
NP V.LOC

b) /lala/
NP INDEX$_x$V

c) /lala/
NP V.LOC INDEX$_x$ + +

d) /lala/
NP INDEX$_x$ V.LOC INDEX$_x$ + +

e) /lala/
NP INDEX$_x$ V.LOC INDEX$_y$ + +

All alternatives express a VP containing a locative predicate in LGP. But the multiplicity of the above forms suggests that the Vs considered until now as copulatives with locatives in LGP are in fact closer to full verbs than to true copulas. Specifically, they seem close to spatial verbs according to Padden's classification (1988, 1990). It should be noted that spatial verbs not only use the visual modality but also contain locative affixes that may interpreted as the Locus in the syntactic space.

In predicative constructions with locatives, the correspondent to affixes of spatial verbs is incorporated in the verb and also in the locative INDEX. If this assumption goes in the right direction, then in LGP the relation between the verb and the locative predicate is not simply the agreement / selection between a copula and its RP (Relator Phrase) but seems closer to the agreement / selection between a full verb and its argument.

Also, we suggest that the low structure of the VP is hierarchical, complex and subject to movements[20]: if only the V moves and the locative INDEX is covert, we obtain (58a); if the locative INDEX is projected, it may remain *in situ* with or without verb movement, as in (58b) and (58c), respectively; finally, the V may also move by copy, yielding the structures in (58d) and (58e). The possibility of an NMM (/lala/,'there+there') must be considered herein. As for (58d) and (58e), it seems possible to defend the existence of a movement by copy as a way to explain the position of the V and the doubling / non doubling of the INDEX. We leave this for future research.

As for FICAR: in LGP some productions with locatives and with this verb were produced in two variants (B and C). These realizations, with the meaning of FICAR ('stay') but very similar to the ones with ESTAR (the only difference is the non-realization of the mouthing /lala/), seem to be justified by the influence of written Portuguese within the stimulus sentences, because these variants were not found in non-locative constructions.

5. Conclusions

In this chapter we have studied predicative sentences in some OL and in some SL. In OL, there is great variation in the expression of predicative sentences: copulative verbs; null copula; nominal constructions with null copula and inversion; use of particles, including modal particles. The variety of these productions justified distinct

[20] As word order is not the main focus of this text, we will not discuss the position of the NP LOC to the left of the V.

theoretical treatments, including the idea of nominal constructions. However, according to Generative Syntax, there is always a verbal syntax, with an agreement between features of the verb and those of the RP (Relator Phrase, the so called "small clause").

In EP, as well as in Spanish, there are distinct predicative verbs (*ser, estar, ficar* and others): *ser* is the unmarked copula, used with individual-level predicates, *estar* is used with stage-level predicates, both adjectival and locative PPs. While most of this alternation is described in semantic terms, we have considered two syntactic treatments of *ser* and *estar*. Zagona (2012) argues that an uninterpretable feature, related to some kind of location, is responsible for the complements of *estar* and for the contexts in which the predicate is temporally delimited.

Brucart (2012) builds a unitary analysis of *ser* and *estar*, starting from the idea that *estar* is the result of an interpretable feature of terminal coincidence (R_T) and that *ser* is the default, "elsewhere" or unmarked copula, characterized by a feature of central coincidence (R_C).

Having described the general uses of *ser* and *estar* in Portuguese and Spanish, we have compared these two OL with sign languages, in particular ASL, FinSL, LSE and LIBRAS.

In sign languages, we could also think about the existence of nominal sentences. However, across sign languages, there is also variation in the expression of locative and non-locative predicative sentences. In non-locative constructions, we find: (i) null copula with juxtaposition of terms in a canonic order; (ii) null copula with inversion of the two terms; (iii) use of specific particles (PI for non-locative sentences in FinSL); (iv) use of NMM (head nod in ASL). In locative constructions, the following options are observed: (i) null copula with juxtaposition of terms in LIBRAS) (note, however, two signs for ESTAR, one with a more permanent meaning, another one more transitional and close to the meaning of FICAR; (ii) in LSE there is an indirect deictic sign 'THERE(i)', with a non-referential locative value, that is associated to a copula.

As for LGP, we can now summarize the main conclusions of the analysis of predicative constructions:

(i) with stage-level predicates, non-locative, we have confirmed the null copula (corresponding to the EP copulas *estar* and *ficar*);

(ii) with individual-level predicates (corresponding to *ser* in EP), with nominal predicates or adjectival predicates, there is also a null copula, except for two cases: SOU ('I am') and NÃO-SOU ('I am not');

(iii) with locative meaning, there is the expression of a verb form corresponding to ESTAR-EM, with handshape "Open Hand" with the simultaneous realization of mouthing /lala/ ('there+there'). The same form was found in two studies, sometimes preceded and followed by a locative INDEX, besides the NMM;

(iv) there is also the expression of a verb form correspondent to FICAR-EM, with a locative meaning, with handshape "F"; the same form was found in both studies.

In order to analyze the variety of locative predicative constructions in LGP, we presented the hypothesis that copulative verbs may be close to full verbs, specifically to spatial verbs, in the classification by Padden (1988, 1990), and that the variety of productions may be due to a complex VP structure.

6. References

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Argument structure in the emerging sign language of Guinea-Bissau[1]

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Abstract

The current study attempts to understand how argument structure is established in a new language currently emerging in the west African country of Guinea-Bissau, Guinea-Bissau Sign Language (LGG).We focus on two main questions: (1) How are the components of verb agreement assembled? and (2) How consistent is word order? Data was obtained through elicited responses to video clips of transitive events from 12 deaf signers. Findings show that arguments are indexed in space, but verb directionality does not always take into account the location of arguments. While the verb is strongly anchored on the Z-axis, coreference with at least one of the arguments suggests an agreement system in the making. Word order is consistently verb-final. Furthermore, distinct word orders appear to be somewhat predictable on the basis of the animacy of the object: SOV with a non-human object and OSV with two human arguments.

Keywords: Guinea-Bissau Sign Language, argument structure, word order, verb agreement, spatial coreference, emerging sign language.

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Introduction

With the time-depth of most languages stretching back to some unknown point of origin, it is an unusual opportunity to be able to look at the organization of an emerging linguistic system in real time. One of the ways to better understand how grammar is pieced together is by looking at the argument structure of events. In these constructions, the verb(s) and the other elements involved are arranged through morphosyntactic mechanisms like verb agreement and word order.

Guinea-Bissau is currently witnessing the development of a new school-based sign language (SL) still in its first generation. For that reason, we sought to investigate the organizational consistency that this emerging SL has attained in only 15 years. Moreover, we hope to shed light on the type of argument structure already established in this new language, and to compare it to other sign languages (SLs) with different time-depths. To do so, we will focus on two main questions about argument structure in **Guinea-Bissau SL (*Língua Gestual Guineense*– LGG)** (Martini & Morgado, 2008, Martins & Morgado, 2016, 2017):

(1) How and to what extent are verb agreement elements put together?
In particular,

(i) Which devices do LGG signers recruit for argument spatial indexation? and

(ii) To what extent does verb directionality agree with R-loci for spatial coreference?

(2) Is word order consistent?
To check syntactic consistency, we have to ask:

(i) How consistent are word order patterns across verb types? and

(ii) Which elements seem to be influencing word order variations?

This article is organised by the following sections: background (§1); methodology (§2); results (§3); discussion (§4); and conclusions (§5).

1. Background

Verbal morphosyntax often encodes certain relations between the verb and its arguments to make explicit the role of participants in events, such as verb agreement (§1.1) and word order (§1.2). This initial overview is relevant to understand how argument structure is characterised in young SLs (§1.3). In the last part (§1.4) we describe the context of emergence in Guinea-Bissau sign language (LGG).

1.1 Verb agreement

In SLs, the verb relies greatly on space to indicate who does what to whom, depending on whether the verb is moving between subject and direct object (simple

transitives) or subject and indirect object (ditransitives). Semantically, a transitive construction with two arguments usually assigns to the subject the thematic role of *agent* and to the object the thematic role of *patient*.This requires a combination of pre-established locations associated with arguments ("loci") (§1.1.1) and corresponding verb directionality to agree with those locations (§1.1.2), in order to obtain "spatial coreference"(§1.1.3).

1.1.1 Localising devices

The signer commonly assumes the perspective of one of the arguments (usually the subject) while carrying out the action.To do so, the signer uses her/his body to represent that argument.Taking on the "body as subject" (Meir et al. 2007, Fenlon et al. 2018) can set up a two-part structure of referent location – on the body and anywhere in the signing space (Lillo-Martin & Meier, 2011).

When arguments are not assigned to the signer's body or to physically present referents, they may be placed in abstract locations in front or on the sides of the signer, establishing a referential locus, henceforth *R-locus*. The indexing of nominal referents to specific locations can be done with different devices (Flaherty, 2014, Morgan, 2020), including:

(1) *Altering the place of articulation of the nominal element.*Particular nominal signs that are not articulated on the body, as in the case of CHILD (cf. Schembri et al. 2018 for BSL/ Australian SL [Auslan], but also in many other SLs), allow a spatial displacement to mark the referent location.

(2) *Pointing*. Pointing or indexing in SL has many functions, but as determiners, points constitute a noun phrase and/or assign location to referents (Cormier et al., 2013).

(3) *Producing a classifier in the locus*. Classifiers are morphemic handshapes that represent different classes of nominal referents, such as human entities.

(4) *Indicating with eye gaze*. The direction of eye gaze can also show the location of arguments, and may or may not be accompanied by a point to a location or placement of a nominal element.

1.1.2 Agreement verbs

In SLs, space is often used to illustrate who is involved in an event. To do so, referents may be assigned to abstract locations in the signing space, which enables the verb to refer back to the arguments, establishing coreference (Coppola & So, 2006). Transitive verbs, inflecting in this way, i.e. changing their directionality according to the locus or loci previously established, are called agreement verbs (Zeshan & Palfreyman, 2017). Such verbs will then move between body and locus or between different loci. When this occurs, it is traditionally referred to as spatial agreement of the verb with one or more of its arguments (Lillo-Martin & Meier, 2011).

To illustrate this mechanism, Figure 1 shows how GIVE moves away from the body (from a first person [1P] to a second person [2P] or vice versa), within a sagittal axis, that is also referred to as the Z-axis (Figure 1a). Alternatively, GIVE can move

horizontally, from side to side, between two third parties (3P); this is referred to as the X-axis (Figure 1b). This example from Portuguese Sign Language is very similar to constructions found in other SLs.

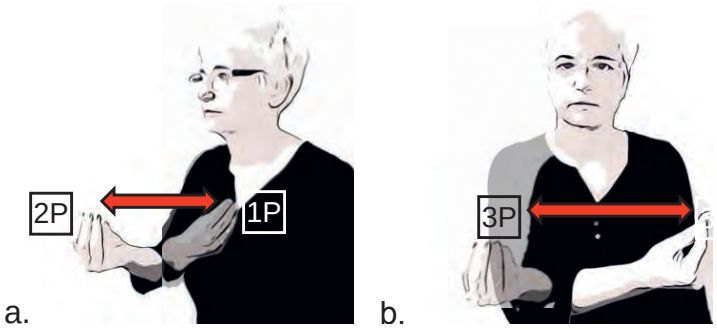

Figure 1: Example of different directionalities of GIVE.

The BSL corpus shows that some formal features of potential agreement verbs, like PUSH, exhibit less directional modifications (Fenlon et al., 2018). Moreover, there are verbs oriented to the object and moving away from the signer, known as regular agreement verbs, and verbs moving towards the signer, the so-called backward agreement verbs (e.g. Padden, 1983; Meir, 1998, Schembri et al., 2018).

In this way, agreement verbs are syntactically and semantically distinguished by the fact that they may modify their path and/or orientation according to the arguments involved and their respective referential loci (R-loci).

1.1.3 Spatial coreference

Canonical verb agreement involves marking locations for arguments in the signing space, altering the directionality of the verb, and synchronizing these two independent mechanisms with each other to enable coreference (Meir, 2010). Traditionally, scholars have assumed that the inflection of the verb encodes both semantic and syntactic relations between R-loci (Meir, 2010, Lillo-Martin & Meier, 2011).

In what concerns syntactic agreement, subject is frequently represented by the signer's body and thus omitted by default, making it optional. In contrast, verb agreement with the object seems to be obligatory (Lillo-Martin & Meier, 2011). In the presence of two human arguments, the role of the subject can be ambiguous. Events with two human arguments, whether simple transitive like PULL or WAVE, or ditransitive like GIVE or TAKE, are called *reversible* (Meir et al., 2017). For languages to avoid ambiguity, efficient coreference of some type is crucial.

Having described how a verb agreement system is set up and which mechanisms are involved, we will now look at another way of encoding syntactic functions: word order.

1.2 Word order

Word order is usually expressed by the basic syntactic functions in transitive constructions: subject (S), object (O) and verb (V). Regardless of modality, languages are found to favour SOV and SVO over other orders (Dryer & Haspelmath, 2013, for spoken languages, Napoli & Sutton-Spence, 2014, for signed languages).

In spite of a striking distinction between two basic word orders in SLs – SVO (e.g. American SL, Libras, Russian SL and Swedish SL) and SOV (e.g. Dutch SL, Indopakistani SL, Italian SL) – SLs tend to have flexibility in sequencing (cf. Sandler & Lillo-Martin 2006 and Baker et al., 2016).To explain this variation, it has been argued that word order may be governed by the semantics of human animacy. As such, the basic cognitive principle of 'human first' justifies an SOV order when an inanimate object is involved (Meir et al., 2017). Yet, when the object is human, it is more likely to precede the subject, introducing the passive participant prior to the active one and, thus, expressing an OSV order (Padden et al., 2010).

The devices for argument structure, concerning verb agreement and word order,- show some systematicity in established SLs. We will now look at how these regularities emerge in young SLs.

1.3 Argument structure in young sign languages

Again, to understand the way argument structure is organised in young SLs, studies will be referred to separately in relation to verb agreement (§1.3.1) and word order (§1.3.2.).

1.3.1 Verb agreement

In young SLs, agreement between arguments seems to take time to develop. In various young SLs, signers use their own bodies to represent the subject of the action, moving the verb from or towards the body. Also, the use of the pointing to assign abstract referents to locations in the signing space is quite common. Both phenomena have been observed in the school-based SLs of Nicaragua (NSL; Senghas et al., 1997, Flaherty, 2014), Kenya (KSL; Morgan, 2014, 2020) and Israel (ISL; Sandler et al., 2005), as well as in the village SLs of Al-Sayyid Bedouin SL (ABSL) in Israel and Central Taurus SL in Turkey (CTSL; Ergin et al., 2017). The use of human classifiers as localising devices is also reported in ISL, ABSL and CTSL. In addition, KSL and NSL report the displacement of nominal signs in space for R-loci as well.

Nevertheless, this abstract use of syntactic space does not always arise, as in the case of the village SL of Kata Kolok (KK) in Bali (de Vos & Zeshan, 2012), where signers point to present referents only. Similarly, where agreement verbs are concerned, signers of ABSL rarely localise referents and orient the verb in relation to their body (Meir, 2010). Diachronic studies show that verb inflection, i.e. spatial modifications of the verb to enable coreference, can develop over time. In NSL, the verb begins to

manifest different directions by the second generation, whereas in ISL and CTSL the verb starts inflecting later on, by the third generation.

Overall, spatial agreement in these young SLs may show different patterns across generations.The verb may leave the body and move between R-loci. When the end-points of a verb's path match the locations of the arguments previously set up in space, then *coreference* occurs. To reflect the patterns of coreference over different generations in ISL and ABSL, Meir (2016) observes the number of established R-loci and the kind of directionality traced by the verb, as the expression of verb agreement. To do so, Meir considers the existence of R-loci, whether there is a) none, b) one in distal position, or c) two of them in the signing space. She also defines verb directionality in terms of axes, according to the initial and final loci of the verb movement, and reduces it to three possibilities:

(1) sagittal (Z)– moving from body/proximal to a distal position directly in front of the body, or in the opposite direction (default axis when the verb assumes the body as subject),

(2) diagonal (X+Z) –moving from the body/proximal to a distal location out in space to the signer's left or right, or in the opposite direction,

(3) horizontal (X) – linking an initial locus on one side of the body to the opposite side, moving from right to left or the other way around.

According to this classification, verb agreement in the first generation of ISL signers is body-anchored with not more than one R-locus, moving along the Z-axis. In the second generation two arguments may be assigned to locations in space and in the third the verb may leave the body and move between R-loci (Meir 2010, pp. 19-20). Thus, over time, the agreement system of ISL changes and becomes increasingly space oriented.

Morgan (2020) also uses this approach for KSL (for ditransitive events), on the basis of three variables: (i) the subject has an R-locus, (ii) the indirect object has an R-locus, and (iii) the axis of the verb. She demonstrates that verb agreement in this new language is largely body-anchored, at least one argument is set in space, in front of the signer, and the verb moves mostly along a sagittal Z-axis to that locus.

In brief, spatial agreement systems across young SLs are more body-centered and tend to become more space-oriented over time, but do not seem to be fully efficient. We now turn to the alternative mechanism of word order for the encoding of syntactic functions.

1.3.2 Word order

Studies with home signers and hearing non-signers by Goldin-Meadow et al. (2008) show that SOV is the default order in visual communication. They argue that the natural cognitive sequencing of words in an event will introduce the arguments before the action, wherethe patient (or theme) will tendencially be more closely binded to the action.

In young SLs, either village or school-based, word order is somewhat more consistent than the agreement system (Sandler et al., 2014). Yet, the sequencing of arguments still exhibits wide variation between signers, and in complex ditransitive semantic events, there is a tendency to produce multiple single argument phrases rather than one phrase containing all arguments (cf. de Vos & Zeshan, 2012 for KK; Sandler et al., 2005, for ABSL and ISL; Ergin et al., 2017, for CTSL; Senghas et al., 1997, and Flaherty, 2014, for NSL; and Morgan, 2020, for KSL). Regardless of methodological differences between these studies, SOV appears to be consistent with inanimate objects, where there is less ambiguity about semantic roles. In these non-reversible events, both village SLs (CTSL, ABSL, and another village SL in Israel – KafrQasem SL, KQSL) and school-based SLs (NSL, KSL and ISL) show a strong preference for SOV. In contrast, clauses with two human arguments tend to pattern in a different way. They usually have OSV order, whereby patient precedes agent (Meir et al., 2017). This is the case in NSL and CTSL. In these reversible events, ABSL varies between SOV and OSV orders, KQSL maintains the SOV pattern, and ISL, KSL and even KK prefer to avoid ambiguities with SVO orders. Diachronic studies show that such consistency may take time to develop. For instance in ABSL, the SOV preference appeared in the second generation, whereas in CTSL and ISL it showed up in the third generation (Meir, 2010).

Thus, word order seems to emerge as an alternative way of encoding argument structure while a verb agreement system builds up (Meir, 2010).

1.4 Sign Language emergence in Guinea-Bissau

The emerging SL of Guinea-Bissau benefits from a diverse ethno-linguistic environment (§1.4.1), where deaf people are coming together as a group (§1.4.2), developing an autochthonous communication system (§1.4.3).

1.4.1 Multilingualism in Guinea-Bissau

Guinea-Bissau is located in west Africa, between Senegal and Guinea-Conakry. Though it is a small country (36.125km^2) with just under two million inhabitants, it has a great variety of coexisting languages and cultures (Eberhard et al., 2020). There are estimated to be around twenty ethno-linguistic groups, with the five most spoken languages being: Balanta, Fula, Manjaku, Mandinka and Papel (Intumbo, 2007).The only official language is Portuguese, which is accessed mainly by schooled people. Because about half of the population are illiterate according to the last census (2009), many people do not speak the official language. Combined with the use of many different mother tongues, this results in 60% of Guineans using the Portuguese-based creole at nation wide level, including in social media and education.

It would be then expected that this multilingualism favours the use of gestures, including conventionalised ones, in ordinary social interactions (Kusters, 2017). A predisposition for a more gestural communication would presumably facilitate the

integration of local deaf people and possibly serve as a basis for their own SL (de Vos & Zeshan, 2012, pp. 6-7 and 17).

1.4.2 Deaf Community in Guinea-Bissau

Until recently, deaf people were largely ignored by the government of Guinea-Bissau. They had no access to language, education, or even identity documents. It was only in 2003 that deaf people began to come together in one school (*Escola Nacional de Surdos*– National School for the Deaf) in Bissau, the capital, in numbers that have increased to more than 400 at present.

Deaf people have built up strong connections between each other, supported by frequent meetings outside the educational context to socialise. In these gatherings, they communicate about everyday life, share new information with each other, promote awareness on sensitive issues like health or women's status and discuss more general subjects, such as political opinions and human rights. In 2011, a group of deaf adults rose against the hearing leadership of both the school and the association and set apart a new school for the deaf (called *Mariposa*), also in Bissau. In spite of this major conflict, deaf people kept gathering in the city townships, and because of this, their deaf pride strengthened. One result is that they currently meet in places where they and their language are fully visible to hearing people in the community, increasing social awareness.

The present study began by working with deaf adults from this new school, who are leading most community-driven initiatives outside school, consequently motivating sign language pride amongst deaf people.

1.4.3 Guinea-Bissau Sign Language *(Língua Gestual Guineense* - LGG)

The conditions for the development of a SL were also improved by the regular contact between different age groups and by weekly activities among students and deaf adults of the Deaf Association, founded in 2006. Teachers were encouraged to learn the students' signs and to use them in their classes. Given that deaf students had no means to access hearing aids or speech therapy whatsoever, signs were easily accepted by the teachers as the most practical communication form.

One deaf adult (a university student at the time) was trained as a sign language instructor, between 2005 and 2009, at the Portuguese Deaf Association. While in Portugal, he realized that LGG was a unique emerging SL of Guinea-Bissau and that influences of Portuguese SL should be avoided. When he returned to Bissau after his professional training, he taught LGG as a school discipline to all deaf classes along with around ten LGG 'monitors' (older deaf students proficient in LGG).

LGG signs have been compiled twice in dictionaries (Martini & Morgado, 2008, and Martins & Morgado, 2017). Over the years, we have observed a huge growth and conventionalization of the lexicon, as well as what appears to be the ongoing grammaticalization of its structure, which helped to motivate the current study.

2. Methodology

2.1 Participants

In order to have a first meaningful sample of the language, we collected data in the school founded by the deaf adults considered as leaders of the deaf community in Bissau. Here, we asked for the best signers, as perceived by their peers, to participate in the present task. The selection resulted in a group of 9 male and 3 female young adults, between the ages of 18 and 27, attending between the 5th and the 8th grade at the time of the recordings. Although skewed by gender, we believe they provide a good linguistic representations of current LGG.

The 12 signers in this study are all deaf since childhood, with the age of onset of deafness varying between birth and 8 years of age. Moreover,10 out of the 12 participants had spent more than 6 years in a deaf school and had regular contact with other deaf people outside school. As young adults, 8 out of the 12 deaf subjects also worked during their studies. All were living in Bissau, though two were not originally from the city capital. Overall, the present group is a faithful portrait of the country diversity, in representing six different ethno-linguistic backgrounds (Papel, Balanta, Mankanya, Fula, Manjaku and Mandinka).

Crucially, all subjects used LGG with ease and did their best to perform the task described next as unfailingly as possible.

2.2 Elicitation task

The research design took into consideration a cross-linguistic approach by using similar materials to elicit single sentences. With the purpose of observing the way transitive verbs encode their arguments, we used short videoclip events.This is a method widely employed with other SLs (Sandler et al., 2005, Senghas et al., 1997, Flaherty, 2014, Ergin et al., 2017).

The elicitation task was adapted specifically to the African context of KSL by Morgan (2014, 2020) from the so-called Haifa clips (Sandler et al., 2005). The stimuli are comprised of 21 video clips showing a variety of transitive events involving one or two people with or without inanimate objects. For this study, 14 stimuli out of 21 were analysed, according to their arguments, as shown in Table 1.

Table 1: Verbs in elicitation videoclips

SIMPLE TRANSITIVES		DITRANSITIVES
A1.1 human, 1 inanimate object	**A2**. 2 humans (reversible)	**B**. 2 humans, 1 inanimate object
CARRY (hoe on shoulder) CARRY (basket in hand) DROP (shirt)	WAVE (at man) WAVE (at girl) PUSH (boy) PULL (boy by the arm)	GIVE (cup) GIVE (shirt) THROW (ball) THROW (shirt) TAKE (cup)
LOOK (cup on ground) POINT (hoe on ground)		

One participant at a time watched each clip on a computer screen and described it to a deaf interlocutor. The interlocutor then had to identify the scene just described from three screenshots on a digital tablet. When finished, they changed roles and the second signer (formerly the interlocutor) viewed the videoclips in a different order. Each pair of participants went through the same procedure, as shown in Figure 2. Participants were filmed with one camera located in front of them in the centre.

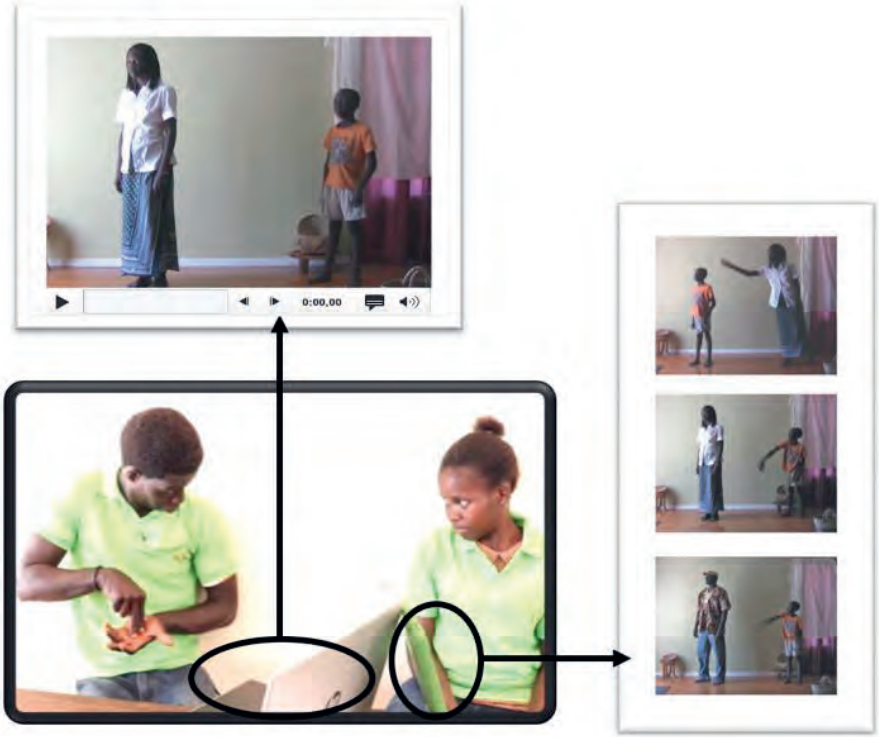

Figure 2: Procedure for the elicitation task.

In total, 181 sentences were obtained (121 simple transitive and 60 ditransitive-constructions). The responses were coded in ELAN[2] for argument structure.

2.3 Coding verb agreement

In order to analyse the syntactic organization within individual sentences, primary grammatical classes of constituents were established. These were: nouns, locatives and verbs.The first two classes were relevant to determine R-loci (in §2.3.1) and verbs, in their turn, were annotated according to the mechanisms involved in spatial agreement (§2.3.2).

[2] ELAN (Version 5.9) [Computer software]. (2020). Nijmegen: Max Planck Institute for Psycholinguistics, The Language Archive. Retrieved from https://archive.mpi.nl/tla/elan.

2.3.1 Localising devices

R-loci in the signing space can be established by different devices (§1.1.1): displaced nominal signs, pointing signs, classifiers, and eye gaze. The first three were coded in this project.

For displaced nominal signs, the neutral location for one-handed signs was set in front of the body slightly to the right, as considered to be the least-effort position for the arm (Brentari 2019). Any deviation from this expected location with a nominal (e.g., child) was classified as displacement (following Schembri et al., 2018).

Pointing, executed with the index finger towards a location in space, was also coded as a locative, i.e. a nominal modifier attributing location (following Johnston, 2016).

For classifiers, one particular sign, stand, was coded as a human entity classifier in the data.This two-legged classifier can be articulated in certain loci to indicate a human argument.Yet, in their study of ISL and ABSL, Meir et al. (2017, p. 195) acknowledge that stand can have either a predicative status or an attributive/modifier status. Sometimes the status can be distinguished by prosodic cues in marking (or not) boundaries with the main verbal clause (cf. Meir et al., 2017 and Volterra et al., 1984, cited in Johnston et al., 2007). The stand sign is interpreted as predicative in a construction like 'girl stand, man push.' Stand with this function was excluded from the present analysis as a localising device because it is more readily considered as a split sentence with two intransitive events, i.e. two SV clauses (cf. Leeson, 2001, for Irish SL, cited in Johnston et al., 2007).

Johnston et al. (2007), however, find that stand in Auslan is used as a post-nominal modifier attributing location (i.e., a classifier). Here it functions as an adjective modifying a noun; e.g., in a phrase like 'the standing girl' or as an embedded relative clause, as in 'the girl who is standing'. In this case, the structure would be '(girl stand) man push' to indicate that a girl who was standing was pushed by a man. This approach was followed in Vermeerbergen et al.'s (2007) crosslinguistic comparison of constituent order in Flemish SL (*VlaamseGebarentaal* – VGT) and South African SL (SASL). The authors suggest that analysing STAND is not straightforward, since it seems to willingly function as a localising device, but still has predictative qualities. In the LGG data, prosodic cues were not clear and consistent enough to support the status of STAND as a separate predicate. Furthermore, its frequency and significant role in setting up the location of arguments led us to classify the STAND sign as a post-nominal modifier that also functions as a localising device.

The fourth localising device, *eye gaze*, was not considered for this particular analysis, due to inconsistency of the camera angle on the signer's face.

2.3.2 Spatial coreference

Constituents themselves were annotated according to their syntactic function and location in space, and verbs according to the initial and final locus of their movement, which is described in terms of axis directionality. Verbs analysed in this way were the so-called agreement verbs. For the current study we will look at which agreement de-

vices are used for both transitive and ditransitive events. However, in SLs, agreement usually happens only in events with two human arguments (Padden, 1983). These are listed in Table 1 and will be classified as (1) regular verbs (WAVE, PUSH, GIVE, THROW) and (2) backward verbs (PULL, TAKE) (see §1.1.2).

To measure the extent of coreference in ditransitive constructions we considered, in Table 2, the number of arguments (loci) indexed in space – R-loci (column A), the verb axis (column B), as proposed by Meir (2010) and the degree of overlap between argument locations and verb endpoints– coreference (column C) (see §1.1.3).

Table 2: Coreference with arguments, according to the arguments set up in space (R-loci) and the verb axis

<table>
<tr><th>A.Arguments in space (R-loci)</th><th>B.Verb axis</th><th>C. Overlap with argument location(s) (coreference)</th></tr>
<tr><td>0</td><td rowspan="3">Z
X+Z
X</td><td rowspan="3">0</td></tr>
<tr><td>1</td></tr>
<tr><td>2</td></tr>
<tr><td>1</td><td rowspan="2">Z
X+Z
X</td><td rowspan="2">1</td></tr>
<tr><td rowspan="2">2</td></tr>
<tr><td>2</td></tr>
</table>

In order to check coreference of verb endpoints with R-loci, both phenomena in marking abstract locations in space were annotated in the same way, using one of five locations. Locations for loci and endpoints were first distinguished between the *body* (1) and the signing space; and then positions in space were coded in relation to the body: *proximal* (2), *distal* (3), on the *right* (4), and on the *left* (5). Thus, coreference- was determined; e.g., a verb that ended in a "distal" position matching an R-locus for an indirect object also in a "distal" position.

2.4 Coding word order

To code word order, it was important to decide on which constituents should be taken into account (§2.4.1) and which verbs to select for analysis, considering that a large number of verbs were used to express the events (§2.4.2).

2.4.1 Clause units

Word order was coded by looking at the arguments preceding the verb, as the verb was found to be consistently sentence-final. In our data, the participants in the events were typically assigned to specific locations in the signing space at the beginning of the sentence. This could be either followed immediately by the verb and, thus, present a complete sentence, or appear a second time before the verb. In the following

example, translated as 'man looks at the cup', the first reference to the MAN would not be considered (shown as crossed out) and the analysis would be ~~[MAN STAND]~~$_S$ [CUP]$_O$ [MAN]$_S$ [LOOK]$_V$.

The lack of consistency of prosodic boundaries (not described here) suggests that these may be cases of *doubling*. Doubling is a common phenomenon in SLs and implies producing different constituents twice within a clause, or entire clauses (see Kimmelman, 2011).

2.4.2 Multiple verb constructions

We also had to develop criteria for analysing multiple verb constructions. The main verb in the event is reported here as V_x and any additional verb as V_y. This additional verb is used to complement the meaning of the main verb, clarifying the event, either by adding extra information to the action, or by representing the reverse action of the main event. We found three overall types of multiple verb constructions.

First, multiple verbs can refer to the same action, they can occur one immediately after theother, or they can be interleaved by constituents. An example of a predicate phrase that depicts two distinct actions or states is CARRY using a handling classifier combined with WALK using an entity classifier. Around half of signers produced these verbs sequentially, but the other half were produced simultaneously, as shown in Figure 3. In our study, a sentence like SOV$_x$V$_y$ (with either sequential or simultaneous verbs) will be considered as a case of SOV word order.

Figure 3: Example of simultaneous production of CARRY-BY-HAND+WALK and CARRY-ON-SHOULDER+WALK.

Second, verbs can add information to the main verb in short phrases, generally comprised of a noun and a verb, coming immediately after the main sentence to clarify its meaning. In this manner, an event translated as 'boy grabs the girl's arm and pulls it' is analysed here as [BOY STAND]$_S$ [GIRL STAND]$_O$ [GRAB-ARM]$_V$ ~~[BOY STAND]~~$_S$ ~~[PULL-ARM]~~$_V$. When all arguments are included in the first clause, the second clause is disregarded (shown here as crossed out) for the purpose of establishing word order patterns.

Third, an isolated verb or a short phrase can indicate the reverse action of the main event after the main sentence. Figure 4 exemplifies a multiple verb construction with GIVE and RECEIVE, referring to the event 'man gives cup to woman'. Again, only the first clause is considered for analysis. Thus, the response in Figure 4 was coded as SIOV.

Figure 4: Example of a multiple verb construction with GIVE and RECEIVE.

This section described the task and stimuli, the participants, and how the data was coded. We now turn to the findings related to our main research questions regarding the components of verb agreement and the consistency of word order in LGG.

3. Results

3.1 Verb agreement

The present section shows how verb agreement is built up, by presenting the strategies used by LGG signers to mark referents through localising devices (§3.1.1), and by checking if verb directionality is agreeing with R-loci to establish coreference (§3.1.2).

3.1.1 Localising devices

We found that in LGG there is a strong tendency to use localising devices. This is done with three different types of signs: (1) *displaced nouns* (e.g., CHILD in Figure 5), (2) *pointing* and (3) the classifier sign for *STAND* (Figure 6).

In the sentences analysed, three signs were displaced in space as arguments of the verb. These displaced nouns are: CHILD (sometimes as part of a compound for BOY and for GIRL), CUP and BALL. In Figure 5, two different loci are shown for CHILD (both as part of the compound for BOY), produced with a fist handshape showing the height of a (short) person's head in *distal* (Fig. 5a) and *right* (Fig. 5b) positions.

a.  b. 

Figure 5: Examples of localised articulations of CHILD in compound BOY: *distal* (5a) and *right* (5b) positions.

SLs often use pointing signs to locate referents (see §1.1.1). Yet, in the LGG data, there were notably only 12 occurrences within the total of the 181 sentences. In contrast, the sign STAND is used frequently and in various spatial positions by 11 out of the 12 LGG signers to index human arguments in the signing space, as illustrated in Figure 6.

a.  b. 

Figure 6: Example of localised articulations of the sign for STAND, in proximal (a.) and left (b.) positions.

Comparing the use of localising devices quantitatively, Figure 7 shows the different proportions of these devices in sentences with transitive and ditransitive verbs. The sign STAND is by far the most frequent, followed by displaced nouns and pointing signs.

Localisation is especially common for human objects. It happens when the person is the object (O) of simple transitive verbs, as in the event $[\text{MAN STAND}]_{O}$ $[\text{BOY}]_{S}$ $[\text{WAVE}]_{V}$, translated as 'a boy waves at a man'. It also occurs when s/he is the indirect object (I) of ditransitive verbs, as in the example $[\text{WOMAN STAND}]_{I}$ $[\text{BALL}]_{O}$ $[\text{BOY}]_{S}$ $[\text{THROW}]_{V}$, translated as 'a boy throws a ball to a girl'.Though in smaller numbers, localisation also occurs with human subjects, in both transitive and ditransitive sentences.

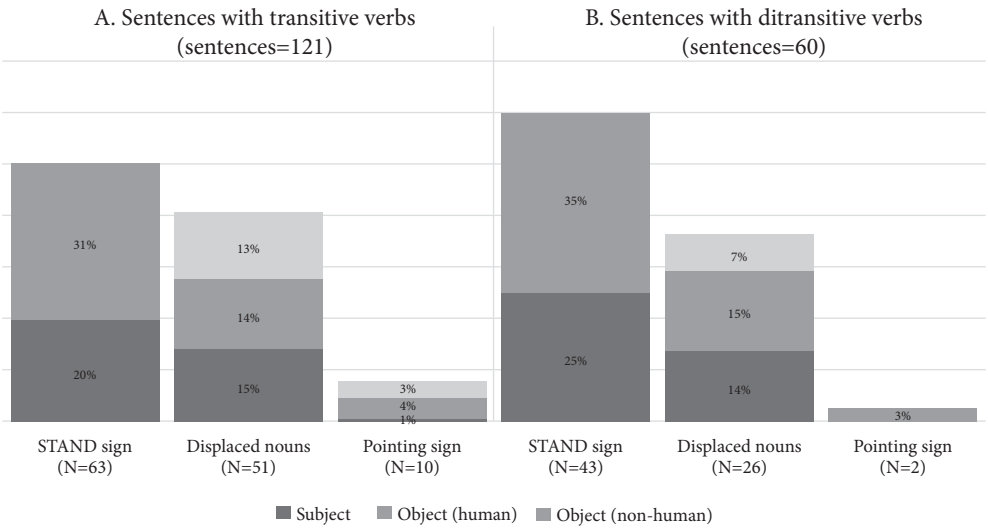

Figure 7: Percent of signs marking locations per argument type (subject, human objects, and non-human objects), in both transitives (A) and ditransitives (B).

Most sentences in the LGG responses have at least one argument located in space. One R-locus is present in almost half of all sentences. Two R-loci are observed in 19% and 25% of the sentences, with transitive and ditransitive verbs, respectively. Finally, 3% of sentences with ditransitives have all three arguments represented by R-loci.

Thus far, we observe that LGG signers do assign locations to (usually human) arguments, both subjects and objects of transitive and ditransitive verbs. To do so, they mostly use signs that can be localized in space, in particular STAND (in Figure 6) and CHILD as part of a compound meaning BOY (in Figure 5).

3.1.2 R–loci in simple transitive constructions

Having identified the devices that LGG signers use to mark R-loci, we will now look at which locations they use for that in transitive constructions (current section) and in ditransitive ones (next section).This analysis only takes into account the locations, not the devices used for assigning those locations. Table 3 shows the number of arguments established in the four spatial locations in sentences with simple transitive verbs (see A1 and A2 in Table 1). In sentences with non-human objects (A1), these are placed in space as much as their subjects. Human objects (A2), in turn, are almost twice as likely to be assigned to a location in space compared to subjects (see also Figure 7). R-loci for both non-human (A1) and human objects are preferably placed in a distal position (n=42), and subjects in a proximal position (n=25). Responses for transitive events with different types of objects show that there is a notable R-loci pattern of subject-proximal + object-distal, especially in constructions with two humans.

Table 3: R-loci for subjects and objects in sentences with simple transitive verbs (in Table 1), with 1 human and 1 object (A1) and with 2 humans (A2)

	A1. 1 human, 1 object Total: sentences =66 / R-loci=34		**A2. 2 humans** Total: sentences =55 / R-loci=73	
R-LOCI	subject	object	subject	object
Proximal	**12**	2	**12**	12
Right	-	3	6	5
Left	2	3	1	7
Distal	3	**9**	4	**26**
TOTAL	17	17	23	50

CARRY: sentences =28 / R-loci=6
DROP : sentences =12 / R-loci=2
LOOK : sentences =14 / R-loci=14
POINT : sentences =12 / R-loci=12
WAVE: sentences =31 / R-loci=39
PUSH: sentences =12 / R-loci=17
PULL: sentences =12 / R-loci=17

Thus, we may conclude that a consistent pattern for subject and object R-loci appears more prominently in the presence of two human arguments, though sentences with LOOK and POINT also assign locations to arguments with some frequency.

3.1.3 R-loci in ditransitive constructions

Ditransitive verbs in transfer events can also potentially be modified for agreement.This entails the movement of the hand from the location of the subject to the location of the indirect object.

In Table 4, the pattern for subjects located in space is similar to the simple transitive constructions, with the majority in a proximal position. However, the human objects (i.e., indirect objects in these events) are more evenly distributed between distal and proximal positions in relation to the body, with a slight preference for a distal one.

Table 4: R-loci of human arguments in sentences with ditransitive verbs (B in Table 1)

	B. Ditransitives Total: sentences =60 / R-loci=57	
R-LOCI	subject	indirect object
Proximal	**10**	11
Right	1	4
Left	5	5
Distal	6	**15**
TOTAL	22	35

GIVE: sentences =26 / R-loci=25
THROW: sentences =25 / R-loci=24
TAKE: sentences =9 / R-loci=7

To summarize, we identify a general tendency in LGG to place subjects in a proximal position and objects distally in both transitive and ditransitive constructions, especially with reversible verbs. Also, a location in space is more often assigned to human objects than to (human) subjects or inanimate objects.

Now we turn to how verbs are modified with respect to arguments in space in ditransitive constructions. We will look at coreference only in these constructions because these verbs are more likely to incorporate both R-loci.

3.1.3 Coreference in ditransitive constructions

Having identified how and where R-loci are anchored, we now look at whether the endpoints of a verb's path movement for ditransitives matches the locations of the arguments set up in space. To do so, we refer back to Table 2 in §2.3.2. Recall that these ditransitives involve two humans and the transfer of an inanimate object between them.

Constructions with the verbs GIVE, THROW and TAKE, in Table 5, show that 44 out of the 60 sentences have at least one argument located in space. Furthermore, about a third of the verbs (24 verbs) exhibit coreference with one of the arguments, by matching its beginning and/or endpoint with an R-locus.

Table 5: Coreference with the verbs GIVE, THROW and TAKE (N=60)

A. Arguments in space	B. Verb axis	C. Coreference with arguments	**Number of occurrences**
0	Z	0	**16**
1	X+Z		**12** **1**
2	Z X+Z		**6** **1**
1	Z X+Z X	1	**15** **1** **1**
2	Z		**4**
	Z X+Z	2	**2** **1**

The most common constructions involve one argument set in space and 40% of the sentences include coreference with at least one R-locus. Figure 8 exemplifies a sentence with coreference of the verb THROW with the indirect object along a Z-axis, translated as 'woman throws shirt to boy'.

Figure 8: Example of coreference of the verb THROW with indirect object in distal R-locus along a Z-axis.

In the data, we observe that even though most sentences set up at least one argument in space, verbs in most ditransitive events do not always agree with those R-loci. It must also be noted that, while most verb movements occur on the Z-axis (proximal to distal and vice-versa, N=55), a few diagonal paths (X+Z-axis, N=4) are present, and half are with coreference. On top of this, one of the sentences with TAKE is produced on the X-axis with coreference with one of the arguments.

Having described the elements of verb agreement in the LGG data, we now report on patterns found in word order.

3.2 Word order

Having defined the necessary criteria to determine clause units for the word order analysis, we observed that the overwhelming majority of constructions, 83%, include all arguments. The fact that we obtain signed sentences that have all arguments explicitly referred to can be surprising in an emerging SL, since we have seen in section 1.2.1 that it would be expected for signers to typically break a transitive event in two separate noun-verb sentences. However, we have to keep in mind that we are analysing the STAND sign as a locative, modifying a noun, and not as a separate predicate (see §2.3.1). Additionally, there are multiple verb constructions that could have been otherwise analysed as separate predicates (see §2.4.2).

Syntactic structures were then examined according to transitivity type and animacy. As such, the current section begins by looking at simple transitive constructions with one human and one inanimate object (in §3.2.1) and then with two humans (in §3.2.2). In section 3.2.3, we will look at word order in ditransitive events.

3.2.1 Simple transitive constructions with one human and one inanimate object

In the 66 responses to simple transitive events featuring one human and one inanimate object (A1 in Table 1), we observe that the majority are consistent with an SOV order, as shown in Figure 9.

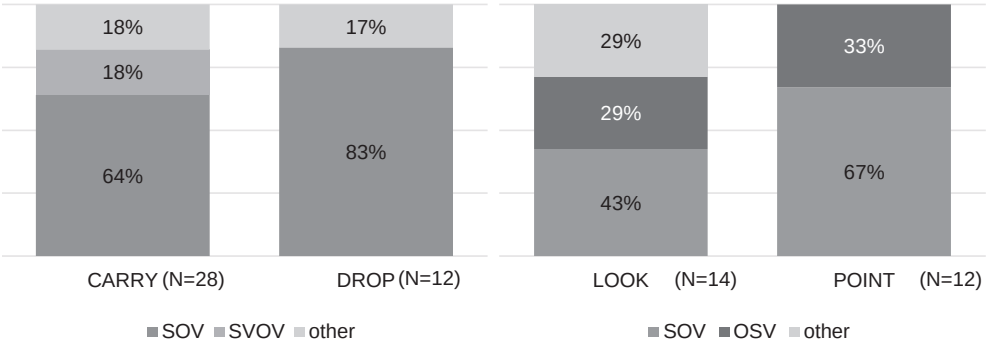

Figure 9: Word order in transitive verbs with one human and one inanimate object as arguments.

In these sentences, SOV is the most prominent order, although this pattern is somewhat different in constructions with LOOK, which have a significant number of OSV patterns and other word orders, especially single verb sequences (included in 'other'). Similarly, sentences with POINT also have a relatively high number of OSV patterns.

3.2.2 Simple transitive constructions with humans

The significance of human objects in syntax (see §1.2 and §1.3.2) appears to be demonstrated by the responses shown in Figure10, regarding the verbs WAVE, PUSH and PULL.

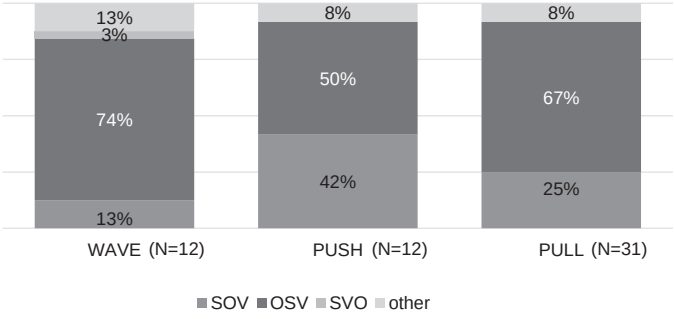

Figure 10: Word order in transitive verbs with two humans as arguments.

These transitive constructions with both human participants show a strong consistency in word order, patterning as OSV; e.g., 'BOY (WOMAN ME) PUSH' in Figure11.

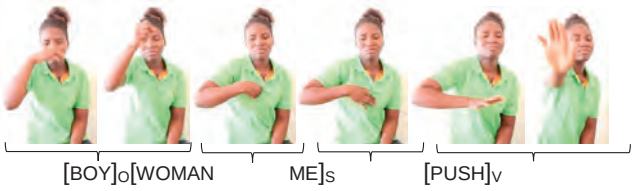

Figure 11: Example of a OSV sentence with PUSH.

3.2.3 Ditransitive constructions with two humans and one inanimate object[3]

In the LGG sentences with three arguments, the verb is systematically found in a final position. In 70% of the cases, the verb is immediately preceded by the direct

[3] Direct object is abbreviated here as 'O' and the indirect object as 'I'.

object, with most frequent orders being ISOV or SIOV, as illustrated in Figure 12. There also seems to be a preference to place the indirect object before the subject in the regular agreement verbs GIVE and THROW (leading to IS[O]V order) and in the backward verb TAKE (leading to I[O]SV order). In addition, the theme, i.e. the direct object, tends to immediately follow the source argument, either the subject in regular verbs ([I]SOV) or the indirect object in backward verbs (IO[S]V).

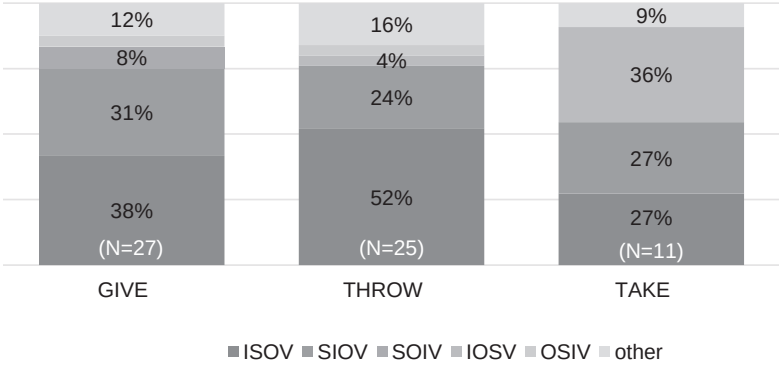

Figure 12: Word order in ditransitive verbs with two humans and an inanimate object as arguments.

Overall, it seems that in this emerging language of LGG, inanimate direct objects tend to occur immediately before verbs, both transitive and ditransitive, patterning like [S]OV and [IS/SI]OV, respectively. When there are two human arguments, the human object tends to precede the subjectin transitives, presenting patterns like OSV(e.g., PUSH, PULL). In the majority of ditransitive sentences, the direct object comes immediately before the verb, as in [IS]/[SI]OV. Moreover, the two human arguments in ditransitives seem to follow the same order as transitives, with the human object preceding the subject, as in I[O]S[O]V.

4. Discussion

The analysis of argument structure in LGG took into consideration (1) the way components of verb agreement are being assembled and (2) the consistency of word order patterns across verb types.

A striking feature of the LGG responses is the relatively extensive use of stand by LGG signers. It appears to be taking on the functional characteristics of a localising device for human arguments, especially with objects in which stand is usually placed in a distal position away from the body. Locations of subjects, though smaller in number, are also indicated with stand in a proximal spatial position.Thus, in LGG, this sign seems to have been grammaticalized as part of the nominal phrase (following Vermeerbergen et al. 2007 and Johnston et al., 2007). In comparison, displaced nominal signs were the most used localising mechanism in NSL (Flaherty, 2014),

while they were used the second most in LGG, with 43% of occurrences within sentences. Finally, pointing signs for argument location occur very infrequently in LGG data, in stark contrast with other SLs. Altogether, this indicates a relatively unique pattern for how locations in space are indicated compared with other young and emerging sign languages.

Yet in spite of having stand as a localising device and establishing at least one argument in space in the majority of sentences, verbs do not always agree with R-loci. In fact, only half of them contain some coreference, and largely along the Z-axis. A verb directionality strongly anchored on the Z-axis is also observed in other emerging SLs, such as Nicaraguan SL and Al-Sayyid Bedouin SL. A similar pattern was noted in the 60-year old Kenyan SL (Morgan 2020) and in the early cohorts of ISL as well. In addition, we observe that, by assigning two R-loci in space (25% of the occurrences), the verb in LGG occasionally leaves the body. However, KSL verbs are more likely to have diagonal X+Z-axis movement, contrasting with the predominance of the Z-axis found in LGG.

In relation to word order, most sentences in LGG explicitly include all arguments (having in mind that the stand sign is interpreted as part of the noun phrase). This was not the case in the emergent school-based SL of Nicaragua. In NSL, the first two generations tend to split sentences in two human argument events (Senghas et al. 1997); however, such distinction could be due to methodological differences. In spite of this, the verb is found to appear constantly in final position, similiarly to other SLs (cf. Baker et al., 2016, for Dutch SL, Indopakistani SL and Italian SL).

In transitive constructions with a non-human direct object there is a preference for SOV order, as seen in many other established and emerging SLs. In contrast, a significant percentage of sentences with OSV order appears in transitive events between two human arguments. The presence of two human arguments seems to correlate with an increase in OSV order in other emerging SLs as well, including NSL (Flaherty, 2014), and the village SLs of Al-Sayyid Bedouin (Meir et al., 2017) and Central Taurus (Ergin, 2017). This may be a step toward topicalization of the object, but LGG signers did not use grammatical markers, such as eyebrow raises or pauses, which have been found to indicate syntactic topics in other sign languages.

In ditransitive sentences with three arguments, the verb is consistently found in final position and in most cases is immediately preceded by the non-human direct object (i.e., ISOV and SIOV orders). There is also a noteworthy preference to indicate the indirect object before the subject. In Central Taurus SL, ISOV is similarly the predominant word order in three argument clauses (Ergin, 2017).

On the whole, the most prominent patterns for argument structure in LGG are (1) an active mechanism of locating referents in space primarily using the sign stand; (2) a consistent verb path along the Z-axis involving at least one established R-locus; (3) an overarching verb final position; and (4) a clear distinction between SOV and OSV orders for non-human and human objects respectively.

5. Conclusion

A verb agreement system appears to be emerging in LGG through localising devices and a consistent verb directionality moving away from the body. In addition, coreference seems to be efficient with at least one of the arguments in a significant number of both transitive and ditransitive constructions. Word order, in turn, shows consistent word orders patterns, especially depending on whether the object is human.

This study adds a new piece to the puzzle of the emergence of argument structure in new SLs. It shows that this very young school-based SL exhibits patterns that are quite similar to other young SLs that have been studied thus far, including village SLs. However, one note worthy way that LGG differs is in the frequent use of the sign STAND, which appears to have taken on the grammatical function of establishing human entities in space. While a similar construction has been observed in other SLs, the frequency of its use in this LGG data suggests an established convention within the tight-knit language community in Bissau.

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Iconicidade na Libras: quando e como se realiza?

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Abstract

Studies focused on Libras have produced promising and highly relevant results. However, it is curious to note that despite the advances, for many of us the idea still prevails that the signs that make up the lexicon of the Brazilian Sign Language are all iconic. Intrigued by this view, we decided to investigate the issue more closely. Here we present some preliminary results obtained with the studies that we have been developing in this regard. Although there are still many unanswered problems to conduct the analysis, one of them stands out: Is it true that the signs of Libras are iconic? In other words: if this is true, can we then say that these signs are not subject to any morphophonic rules? To answer this question, we use not only, but mainly, Klima & Bellugi (1979), Taub (2001), Sallandre (2007), Cruz-Aldetre (2013), Perniss & Vigliocco (2014), Ortega (2017), Martins (2017) and Perlman et al. (2018). What the analyses have pointed out to us so far is that this statement does not hold up, as we will try to show throughout this chapter.

Keywords: Libras, iconicity, Typology of Signs.

Resumo

Os estudos focados na Libras têm produzido resultados promissores e altamente relevantes. Todavia, curioso é notar que, a despeito dos avanços, para muitos de nós ainda prevalece a ideia de que os sinais que compõem o léxico da Língua Brasileira

de Sinais são todos icônicos. Intrigados com essa visão, resolvemos investigar a questão mais de perto. Apresentamos aqui alguns resultados preliminares obtidos com os estudos que vimos desenvolvendo a esse respeito. Embora sejam muitos os problemas ainda sem respostas, para conduzir as análises, um deles se destaca: Seria verdade que os sinais da Libras são realmente icônicos? Em outras palavras: se isso é verdade, podemos afirmar então que esses sinais não se submetem a nenhuma regra morfofonética? Para respondermos essa pergunta, valemo-nos não apenas, mas principalmente, de Klima & Bellugi (1979), Taub (2001), Sallandre (2007), Cruz-Aldetre (2013), Perniss & Vigliocco (2014), Ortega (2017), Martins (2017) e Perlman et al. (2018). O que as análises nos apontam até o momento é que essa afirmação não se sustenta, como tentaremos mostrar ao longo deste capítulo.

Palavras-chave: Libras, iconicidade, Tipologia dos Sinais.

1. Introdução

Das práticas educacionais aos estudos dos fenômenos linguísticos que se manifestam nas línguas de sinais, os avanços que vêm sendo obtidos em ambas as áreas têm sido realmente notáveis. Apesar disso, há muitos problemas, tanto numa quanto noutra área, que ainda precisam ser aprofundados, entendidos e esclarecidos. O que trazemos para o debate é uma reflexão a respeito da tão propalada "iconicidade" que, à primeira vista, parece dominar a natureza dos sinais que compõem o seu léxico.

Não há dúvida de que a iconicidade é uma propriedade presente em todas as línguas naturais, mas, talvez pelo fato de as línguas de sinais serem realizadas por "gestos" executados visoespacialmente (Cruz-Aldetre, 2013), essa sua modalidade de realização tende provocar nas pessoas a ideia, equivocada a bem da verdade, de que todos os sinais produzidos nas línguas de sinais de uma maneira geral, e na Libras de modo particular, sejam de fato icônicos. No entanto, há muitos estudos que nos mostram que esse tipo de afirmação não se sustenta de maneira alguma.

Debruçando-nos sobre o assunto, o que as nossas análises têm nos mostrado até o presente momento, corroborando assim o que muitos pesquisadores já vêm confirmando há um bom tempo, é que sendo os sinais morfofonologicamente compostos por uma complexa combinação de parâmetros que, em conjunto, atribuem a eles (os sinais) uma capacidade diferenciada de se manifestarem, de fato não é verdade que todos os sinais sejam icônicos, mas muito pelo contrário.

Partindo desse ponto, com base em questões e aspectos relevantes sobre a formação e o modo de realização dos sinais, estando mais especificamente o nosso foco voltado para a Língua Brasileira de Sinais (Libras), o que pretendemos discutir nesse capítulo é que esse que chamaremos aqui de senso comum não se assenta em bases minimamente sólidas e, menos ainda plausíveis, ao ponto imaginarmos que essa visão possa de algum modo prosperar.

Com isso em mente, iniciaremos o debate traçando o percurso investigativo que tem nos permitido delinear e delimitar o objeto da pesquisa que dá corpo à tese de doutorado, intitulada "Relações de Arbitrariedade e Iconicidade na formação dos si-

nais em Libras", em andamento, conduzida pela primeira autora, sob a orientação do segundo autor.

2. Procedimentos teórico-metodológicos

Buscando não apenas identificarmos, mas também, e é claro, analisarmos as circunstâncias que poderiam nos levar a uma visão, voltamos a afirmar equivocada, de que todos os sinais da Libras são icônicos, optamos por uma investigação comparativa de cunho qualitativo, da qual tomam parte, de um lado, os 400 sinais registrados pelo dicionário "Iconographia dos Signaes dos Surdos–Mudos", de autoria de Flausino José da Gama (1875) e de outro, três outras obras mais recentes publicadas a partir dos anos 60, nomeadamente "Linguagem das Mãos", de Eugênio Oates, 1969, "Linguagem de Sinais", da Sociedade Torre de Vigia de Bíblias e Tratados (1992) e "Dicionário Enciclopédico Ilustrado Trilíngue da Língua de Sinais Brasileira, LIBRAS", de Capovilla e Raphael (2001).

Com as obras selecionadas e a tabulação dos dados coletados e devidamente alinhados, buscamos verificar, tomando por base os parâmetros que conformam cada um dos sinais da Libras, até que ponto um sinal se assemelha ou se diferencia de outro em relação à forma como se realizam, e sobretudo se as suas sinalizações nos permitem classificá-los como icônicos ou não.

Desse escrutínio, o que até então temos podido observar é que, na realidade, os sinais da Libras, ao contrário do que se possa imaginar à primeira vista, não podem e nem têm como ser enquadrados, todos, como icônicos. Como veremos mais adiante, embora existam de fato os sinais icônicos, muitos sinais são passíveis de outros tipos de classificação, a saber: translúcidos, obscuros e arbitrários, sendo, portanto, o assunto que motiva a pesquisa em tela.

Antes, porém, de avançarmos com o debate, cabe-nos esclarecer o seguinte: nesse nosso trabalho não estamos interessados e/ou preocupados em analisar os sinais diacronicamente. Antes, o nosso objetivo é analisarmos os sinais analítico-descritivamente tais como registrados em cada uma das quatro obras acima mencionadas. Para tanto, como já mencionado anteriormente, tomamos por base tão somente os parâmetros usados na constituição de cada um dos sinais sob escrutínio, sem nos preocuparmos com as possíveis modificações que os sinais tenham sofrido ao longo do tempo.

3. Os sinais da Libras são icônicos: mito ou verdade?

A questão da arbitrariedade e da iconicidade nas línguas, sejam elas faladas ou sinalizadas, é muito mais complexa do que pode parecer à priori. Se para as línguas faladas a decisão sobre se uma palavra é icônica ou arbitrária não é uma tarefa fácil, quando se trata das línguas de sinais, a mesma dificuldade parece não existir. Será mesmo?

Apesar do reconhecimento linguístico como uma língua natural, ainda prevalece uma crença de que, se não todos, a grande maioria dos itens lexicais das línguas de sinais são icônicos (Cruz-Aldetre, 2013). Segundo ela, tal afirmativa não se sustenta,

pois se nas línguas de sinais todos os sinais fossem icônicos seria de se esperar que os mesmos referentes apresentassem uma padronização no sinal. No entanto, tal premissa não se verifica, uma vez que cada língua de sinais apresenta uma constituição própria na formação do sinal considerando a singularidade do grau de motivação do sinal em relação ao referente.

Assim, considerando que na corrente teórica da Linguística Funcionalista a iconicidade é definida tomando-se por base a relação estabelecida entre a forma e a função, isto é, o paradigma funcionalista ressalta o valor da interação verbal, compreendendo a performance em situações contextuais para explicar os fenômenos linguísticos, é que buscamos explicar a relação de arbitrariedade e iconicidade na formação dos sinais da Libras, compreendendo que arbitrariedade e iconicidade não são conceitos divergentes, mas que se constituem e se integram em um *continuum* onde o signo linguístico pode ser concebido plasmado em uma imagem já existente, mas concebido arbitrariamente.

Dessa forma, nossa sustentação na Linguística Funcionalista é por considerarmos que os fenômenos linguísticos de arbitrariedade e iconicidade se integram em um *continuum* onde os sinais da Libras podem apresentar outras tipologias para além da iconicidade/arbitrariedade, considerando as tipologias como translúcido, obscuro e opaco.

Pesquisadores como Taub (1997, 2000, 2001), Klima & Bellugi (1979), Cuxac (1993, 1999, 2003), Sallandre (1999, 2003, 2006, 2007), defendem que tanto as línguas orais como língua de sinais possuem semelhanças em suas propriedades linguísticas.

Assim, apresentamos de forma sucinta as considerações obtidas das investigações dos pesquisadores quanto ao fenômeno linguístico da iconicidade nas línguas pesquisadas pelos mesmos.

De acordo com eles, para que possamos discutir adequadamente o funcionamento das línguas de sinais, especialmente em relação a esse tópico, necessário se faz, antes de tudo, que vejamos a iconicidade como uma "noção operatória", a partir da qual os sinais estabelecem uma relação de semelhança com seu referente, possibilitando sentido para e com o outro.

No entanto, embora alguns sinais apresentem características icônicas, essa iconicidade "de forma alguma determina os detalhes reais da forma" (Klima & Bellugi, 1979, p.21). Isso porque um sinal atribuído a um referente pode ser considerado icônico, mas divergem na sua representação e caracterização, como o clássico exemplo do sinal atribuído ao referente ÁRVORE.

Chinese Sign Language | Danish Sign Language | American Sign Language

Fonte: Klima e Belluggi (1979, p. 525)

Na Língua de Sinais Chinesa – CSL, o sinal se realiza com as duas mãos com a mesma configuração de mão, com o movimento de baixo para cima simulando o tronco da árvore. Já na Língua de Sinais Dinamarquesa – DSL, o sinal é realizado com as duas mãos com a mesma configuração de mão, em volta do rosto do sinalizador iniciando da cabeça até o pescoço aproximando as mãos e descendo representando o tronco da árvore. Todavia na Língua de Sinais Americana - ASL, o sinal é realizado com as duas mãos com configuração de mãos distintas, sendo uma a base com a palma para baixo servindo de apoio para que o braço se posicione na posição vertical dobrado apoiando o cotovelo. Neste braço a mão está aberta, com os dedos separados, realizando um movimento de girar para os lados.

Por consequência, a relação que se estabelece do conceito linguístico de iconicidade nas línguas, revela que o sinal de um idioma pode se concentrar em certos recursos visuais do significado, enquanto o outro pode se concentrar em recursos visuais diferentes.

Assim sendo, para Taub (2000) em relação à iconicidade, o termo alude a um processo cognitivo que permite ao indivíduo mapear a estrutura de um objeto, isto é, considera que não há uma relação objetiva entre imagem e referente, mas uma relação entre este último e o modelo de imagens mentais, o qual é motivado por experiências humanas, vividas em dada comunidade e imersas em certa cultura como bem representado com o exemplo de ÁRVORE.

De conformidade, para Cuxac & Sallandre (2007), a iconicidade pode representar várias categorias, sendo a primeira denominada pelos autores como uma estrutura altamente icônica, considerada como iconicidade imagética, pois refletem uma imagem do universo mental que pressupõe uma intenção de mostrar, ilustrar e demonstrar ao dizer, sendo que essas intenções cognitivas classificadas como "transferências" que representam estruturas altamente icônicas.

Em síntese, essas transferências podem ser identificadas por eles como: transferência de tamanho e forma, transferência de situação e transferência de pessoa possibilitando uma reprodução icônica, considerando ainda a possibilidade de que essas estruturas possam ser combinadas.

Para além dessa forma de iconicidade na LSF, Cuxac & Salandre (2007) asseveram que há também o que denominam como sinais congelados, que representam uma evolução "econômica" onde o sinal resulta de uma associação, como por exemplo, o sinal de peixe que foi associado à sexta-feira. Assim, os sinais emergem e se estabilizam, envolvendo as ações cognitivas identificadas na linguística funcional.

Consideram ainda a possibilidade da iconicidade diagramática no uso do espaço na LSF onde o sinal pode ser realizado com o dedo apontando (anafóricos), ou mesmo para situar o referente no espaço onde as mensagens são construídas similar a um diagrama. Cuxac & Salandre (2007) asseveram que a iconicidade diagramática pode ocorrer na construção de uma referência espacial, referência de tempo, referência de pessoas.

Por conseguinte, as investigações realizadas por Lai & Yang (2009) fundamentados nas pesquisas de Tai (2001; 2005) e Su (2004) sobre os fenômenos linguísticos de iconicidade e arbitrariedade na Língua de Sinais Taiwanês, os levaram a conclusão que as motivações que sustentam a presença de sinais icônicos nessa língua ocorrem de quatro modos, a saber:

> (i) imagética, situação em que, quando por meio das configurações assumidas por uma ou pelas duas mãos, é possível identificar sem maiores dificuldades a que entidade o sinal se refere, isto é, o significado é evidente e pode ser imediatamente identificado, mesmo sem o conhecimento da língua de sinais;
>
> (ii) diagramática, manifestação que se dá pela localização. Em tal circunstância, segundo esses autores, são descartadas as relações sistemáticas de signos que são análogos aos de seus referentes; por exemplo, na Libras, o sinal de ideia, pensar e saber, o significado pode não ser imediatamente identificado, mas podem ser compreendidos na representação do sinal, pois os três são realizados na testa (cabeça) onde realizamos o nosso raciocínio, assim o signo lexical está diagramaticamente representado pela sua localização, configuração de mão, movimento, diagramático das mãos;
>
> (iii) metonímia, considerada como uma associação onde uma determinada entidade representa o seu próprio significado, como por exemplo o sinal de enfermeira que é realizado com a representação de uma cruz vermelha. Assim o sinal remete a uma representação do referente;
>
> (iv) metafórica, situação em que a iconicidade se manifesta pela orientação das mãos, é usada para expressar conceitos abstratos, por exemplo quando o movimento de mão pode apresentar significados distintos estando unidas ou separadas, isto é, "fechado" ou "aberto".

Já os sinais que não se enquadram nessas categorias correspondem aos sinais arbitrários. Portanto, para esses pesquisadores os referentes icônicos podem se classificar de acordo com as várias tipologias onde cada qual se constitui por apresentar uma relação de semelhança; representar uma ação ou mesmo um objeto; por fazerem uso das expressões faciais e porque alguns podem ser similares ou mesmo idênticos a determinados gestos convencionais utilizados em determinada cultura.

Na Libras, Martins (2017) realiza uma análise do papel que a iconicidade do sinal desempenha nos dicionários de língua de sinais. Segundo os dados obtidos em sua pesquisa, os resultados apontam que os sinais icônicos têm significado admissível e adivinhável.

Os resultados obtidos com a pesquisa de Martins (2017) sugerem que, aparentemente, a admissibilidade só passa a predizer fortemente a adivinhabilidade quando essa admissibilidade ultrapassar certo limiar de forte admissibilidade, ou seja, centra os estudos na iconicidade dos sinais analisando a relação entre a forma do sinal ser considerada admissível na representação do significado, sendo este significado possível de ser adivinhado.

No entanto, Taub (2001) assevera que nas línguas de sinais a semelhança que se estabelece entre uma forma e seu significado não é algo objetivo, mas sim uma relação que se estabelece a partir dos processos cognitivos que o indivíduo realiza quando faz a comparação.

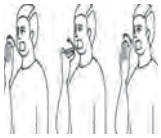
4. Dados de análise e discussão dos resultados obtidos até o presente momento

Nossas investigações revelam que na Libras é possível a presença de outras tipologias onde a iconicidade pode evoluir de uma forma inicialmente transparente/imagética, translúcida/diagramática, obscura/metafórica, para opacidade/arbitrariedade.

Esse fenômeno já investigado em outras línguas de sinais nos permitem compreender a iconicidade e arbitrariedade não como conceitos opostos/divergentes, mas considerando a iconicidade como uma característica igualmente importante da linguagem (Dingemanse et al, 2015; Perniss et al, 2018).

Para exemplificar, apresentamos o referente COMER em sua origem e o mesmo referente nas demais obras considerando que há elementos de uma transferência imagética revelando claramente o significado do item lexical.

Quadro 1: referente COMER

Século XIX Dicionário de Flausino José da Gama 1875	**Século XX** Dos anos de 1960 a 1989	**Século XX** Dos anos de 1990 a 1999	**Século XXI** Dos anos de 2000 até os dias atuais
			
1. COMER Deve preceder o sinal de coisa que se come.	1. COMER Mover os dedos direitos para baixo e para cima, diante dos lábios.	1. COMER Mão direita aberta, dedos unidos e palma para dentro, próximo à boca. Movimentar rapidamente os dedos para baixo e para cima.	1. COMER Mão direita vertical aberta, palma para dentro, diante da boca. Flexionar os dedos duas vezes.

Fonte: Gama (1875, p.20) Oates (1969, p. 31) Torre de Vigia (1992, p. 30) Capovilla (2001, p. 434)

O referente COMER na obra de Gama (1875) é registrado como a representação de "coisa que se come" caracterizando o ato de ingerir uma refeição (alimento). Nas demais obras selecionadas não houve mudança do referente em sua realização no ato de sinalizar.

Nesse item lexical, a relação icônica que ocorre entre significado e significante se estabelece pela forma e localização da mão, isto é, a relação icônica que ocorre entre significado e significante se estabelece pela forma e localização da mão.

Na constituição temos os parâmetros de configuração de mão (CM), o de localização (L) e o de movimento (M). Nas demais obras não houve alteração nem acréscimo de parâmetro, o que indica que o sinal é icônico/transparente em todas as obras.

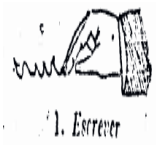
Assim, um outro exemplo é o sinal registrado para o referente ESCREVER; na obra de Gama (1875) não consta nenhuma descrição para realização do sinal, o que nos remete a compreender que era considerado um sinal altamente icônico, pois somente com a realização do sinal era possível levar a compreensão do significado como correspondendo a sua imagem, sendo assim transparente.

Nas obras de Oates (1969), Torre de Vigia (1992) e Capovilla e Raphael (2001), o sinal apresenta a mesma formação quanto à configuração de mão, localização e

movimento. No entanto, há o acréscimo da mão esquerda para representar o local onde se escreve, pois o sinal é descrito com objetivo de simular alguém escrevendo.

Assim, tal como no sinal de COMER, o sinal para ESCREVER apresenta uma relação icônica (transparente), considerando o significado e significante para o ato que representa as características que refletem as interações culturais dos humanos com essas ações.

Quadro 2: referente ESCREVER

			
2. ESCREVER Não há uma descrição da realização do sinal.	2. ESCREVER Simular alguém escrevendo na palma esquerda.	2. ESCREVER Simular alguém escrevendo na palma esquerda.	2. ESCREVER Mão esquerda horizontal aberta, palma para dentro, inclinada para ima; mão direita horizontal para baixo, dedos indicador e polegar unidos pelas pontas, tocando a base da palma esquerda. Mover a mão direita em direção às pontas dos dedos esquerdos, balançando-os para frente e para trás.
Fonte: Gama (1875, p.18)	Oates, (1969, p. 45)	Torre de Vigia (1992, p. 49)	Capovilla (2001, p. 603)

Já para o referente de OVO constatamos que ocorre uma possibilidade de mostrar uma característica que é construída pelo uso, ou seja, ocorre uma descrição do ato desse referente onde a experiência extralinguística possibilita a compreensão da sinalização. Segundo os pesquisadores essa possibilidade de apresentar uma característica do signo nas línguas de sinais é classificada como "transferência" (Cuxac, 2000; Sallandre, 2003).

Para esse referente identificamos como representando a tipologia de um item lexical translúcido, pois o sinal é compreensível a partir da realização do sinal.

Quadro 3: referente OVOS

			
3. OVOS Bater com as extremidades dos dedos, umas contra as outras, como se quebrasse ovos batendo um no outro.	3. OVOS Mãos separadas, palma a palma dedos unidos pelas pontas. Bater duas vezes as pontas dos dedos de uma mão contra as pontas da outra e, em seguida, virar as pontas dos dedos para baixo.	3.OVOS Mãos em "C", palmas uma em frente à outra. Encostar as pontas dos dedos iguais, jogar as mãos para os lados ao mesmo tempo virando as palmas para baixo.	3. OVOS Mãos em "O" horizontal, palma a palma. Aproximar as mãos até que se toquem e então girá-las pelos pulsos para baixo, abrindo os dedos.
Fonte: Gama (1875, p. 14)	Oates (1969, p. 192)	Torre de Vigia (1992, p. 254)	Capovilla & Raphael (2001, p. 989)

Na constituição desse item lexical ambas as mãos usam a mesma configuração de mão realizando o mesmo movimento, porém em sentidos de convergência e espalhamento dos dedos com a direção do movimento para baixo com abertura dos dedos. Há uma representação icônica do ato de bater os ovos para quebrar a casca do ovo.

Segundo Perniss & Vigliocco (2014) os sinais translúcidos inicialmente podem não ser compreendidos, mas a motivação para sua constituição é. Assim, o seu significado pode não ser adivinhado, mas se lhe for dada a opção de escolha a sua alternativa será a correta.

Ao analisarmos o referente de ESPELHO que consta em todas as obras, consideramos que é um item lexical obscuro, pois existe uma relação com o referente, mas somente depois de contextualizado é possível ser admissível e compreendido.

Quadro 4: referente ESPELHO

Século XIX Dicionário de Flausino José da Gama 1875	**Século XX** Dos anos de 1960 a 1989	**Século XX** Dos anos de 1990 a 1999	**Século XXI** Dos anos de 2000 até os dias atuais
			
4. ESPELHO Na obra não há uma explicação desse referente.	4. ESPELHO Mão esquerda aberta diante do rosto, palma e dedos ligeiramente inclinados para frente e para cima. Tremular a mão rapidamente.	4. ESPELHO Mão direita aberta, dedos separados e apontados para cima, palma para dentro diante do rosto. Tremular a mão levemente.	4. ESPELHO Mão direita vertical aberta, palma para dentro, inclinada para cima, diante do rosto. Girar a mão pelo pulso para os lados.
Fonte: Gama (1875, p.20)	Oates, (1969, p. 112)	Torre de Vigia (1992, p. 112)	Capovilla (2001, p. 610)

Neste referente há em sua constituição o uso de quatro parâmetros que são CM, L, M e D, sendo que para a compreensão do seu significado é necessária uma explicação.

Quanto ao item lexical PREGUIÇOSO nossas análises consideram-no como um referente opaco/arbitrário uma vez que não ocorre uma relação direta com o referente. É um conceito que é construído culturalmente e socialmente. Para cada período há um registro na sua realização; no entanto, a sua formação se constitui com os mesmos parâmetros com configuração de mão, movimento, localização. De acordo com Perniss & Vigliocco (2014) os sinais opacos são os sinais que não são icônicos.

Quadro 5: referente PREGUIÇOSO

			
5. PREGUIÇOSO Não consta o registro de como realizar o sinal.	5. PREGUIÇOSO Pontas dos dedos direitos unidos, apontando para baixo, colocadas diante da testa. Baixar a mão numa linha reta e inclinar um pouco a cabeça para frente ao mesmo tempo.	5. PREGUIÇOSO Mão direita em "Y", palma para dentro, dedos para cima. Bater duas vezes o lado do dedo mínimo no lado do rosto, entre o olho e a orelha.	5. PREGUIÇOSO Mão direita vertical, palma para a esquerda, pontas dos dedos unidas tocando o lado direito da testa. Mover a mão para baixo, inclinando um pouco a cabeça para frente, com expressão de cansaço.
Fonte: Gama (1875, p.32)	Oates (1969, p. 144)	Torre de Vigia (1992, p.149)	Capovilla (2001, p. 1074)

Até o momento, o que os dados analisados estão nos revelando é que é possível que o mesmo ocorra nos sinas da Libras quanto aos principais parâmetros que formam os sinais: quando se trata de *sinais transparentes/imagéticos* têm em sua constituição os parâmetros configurações de mão, movimento e ponto de articulação; nos *sinais translúcidos/diagramáticos* a semântica da representação dos sinais tem como parâmetro de base o ponto de articulação e expressão não-manuais; os *sinais obscuros/metafórico* têm ênfase nos parâmetros de configuração de mão, movimento e orientação; a *opacidade/arbitrariedade* é fruto de uma convenção.

É possível ainda considerarmos uma contextualização das características semióticas do movimento. Para melhor compreensão trazemos o item lexical AMAR.

O verbo AMAR é considerado um item lexical icônico. Nos dois períodos iniciais este item lexical é realizado com as duas mãos com a CM em  (51 da tabela de Farias-Nascimento), com as mãos no peito. Nos dois períodos subsequentes utiliza-se duas CM,  e  .

Na realização do sinal identificamo-lo como icônico, mas as configurações de mãos são arbitrárias, não estabelecendo uma relação do significante e significado do referente. Entretanto, quando analisamos o PA com a realização do sinal no peito, isto remete para iconicidade, porque nos remete a sentimentos.

5. Considerações Gerais e Perspectivas Futuras

Consideramos que esse artigo se apresenta relevante, na medida que contribui para a consolidação dos estudos linguísticos da Libras à luz da corrente teórica funcionalista, que compreende a iconicidade não como um fenômeno antagônico da arbitrariedade, mas que analisa as relações entre uma forma e outra, entre uma forma e o seu significado e entre o sistema de formas e seu contexto.

Para além de realizarmos uma classificação tipológica dos sinais da Libras temos como objetivo identificar como se dá o processo de formação dos sinais da Libras, considerando a relação de iconicidade e arbitrariedade não como conceitos dicotômicos, mas que estão presentes e se constituem como em toda língua natural.

Muito mais do que classificar ou categorizar os tipos de sinais, nossos estudos buscam compreender a formação dos sinais que constituem o corpus dos referentes selecionados, corroborando com os estudos linguísticos que investigam os fenômenos de arbitrariedade e iconicidade na Libras.

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Utilização do *espaço sintático* numa língua gestual emergente: da amplificação para a redução?

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Abstract

The observation, during two years (2013-2015), of the Sign Language of São Tomé and Príncipe, an emerging language, allowed us to understand that the signers begin with the use of a wide space at the level of the whole body and gradually produce signs closer to the trunk and the space is decreasing. This process is probably universal and neurolinguistically motivated, is a search for linguistic economy and for less effort of energy in the articulation of the sign and in the use of the syntactic space.

Keywords*:* São Tomé, emergent sign language, syntactic space, search for economy.

Resumo

A observação, durante dois anos (2013-2015), da Língua Gestual de São Tomé e Príncipe, uma língua emergente, permitiu perceber como, de um espaço amplo a nível de utilização de todo o corpo e da produção dos gestos afastados do corpo, se vai chegando a gestos cada mais próximos do tronco e que diminuem em termos da área espacial ocupada, num processo que provavelmente é universal e neurolinguisticamente motivado, de procura da economia linguística e de menor dispêndio de energia motora na articulação do gesto e na utilização do espaço sintático.

Palavras-chave: São Tomé, língua gestual emergente, espaço sintático, procura de economia.

1. Notas Introdutórias

As línguas gestuais são línguas visuo-espaciais. Os gestuantes têm um *espaço sintático* (Amaral et al., 1994) onde ocorre a sua interação linguística e comunicativa.

Esse espaço funciona como uma moldura tridimensional à frente e em redor do gestuante que se estende desde o topo da sua cabeça até abaixo da cintura e para os dois lados até aos cotovelos. É neste espaço tridimensional que os gestos são articulados.

Os gestuantes usam o seu espaço sintático para colocar e localizar referentes, ou seja, pessoas, objetos, edifícios e lugares. Este é também um espaço onde a referenciação sintática se faz, assinalando as pessoas através da sua colocação espacial e referindo-se a essas pessoas através do apontamento para o seu lugar no espaço. O espaço sintático é também usado para mostrar onde os lugares, as pessoas, os objetos ou edifícios se encontram localizados uns relativamente aos outros.

O espaço sintático numa língua gestual assume, assim, várias funcionalidades na interação linguística, como veículo da gramática e das relações sintáticas e discursivas e também como veículo topográfico no que respeita a localização dos objetos, edifícios e pessoas uns em relações aos outros.

Várias categorizações podem ser usadas para definir este espaço onde se movimentam os articuladores manuais (a mão dominante ou as duas mãos) e não-manuais (cabeça, tronco, braços, ombros e pernas).

A classificação que parece reunir mais consenso é aquela que se encontra descrita relativamente às diferentes posições anatómicas e localizações relativas do corpo humano e dos seus graus de liberdade de articulação, conforme descrito por profissionais de saúde e engenheiros biomédicos.

Essa classificação dicotómica encontra-se dividida da seguinte forma:

> a) *Espaço Medial e Lateral:* Medial refere-se ao plano mediano, que divide o corpo, da cabeça aos pés, em duas metades, à esquerda e à direita. Lateral é o lado do corpo ou parte do corpo que está longe do meio.
>
> b) *Espaço Proximal e Distal*: Proximal refere-se a algo mais próximo do torso, enquanto Distal se refere a partes e lugares mais distantes do torso.
>
> c) *Espaço Superior e Inferior*: estes dois termos são usados para se referir ao eixo vertical do corpo. Diz-se que uma parte do corpo é mais alta do que outra e, inversamente, a outra parte do corpo é inferior à anterior.

Se observarmos o espaço sintático utilizado por gestuantes numa língua gestual madura (Nyst, 2007) relativamente a uma língua gestual emergente nota-se uma maior amplificação na utilização do espaço nesta última, tal como podemos observar na figura 1 (AVIÃO em LGSTP, uma língua emergente) relativamente à Figura 2 (CABRA em LGP, uma língua madura).

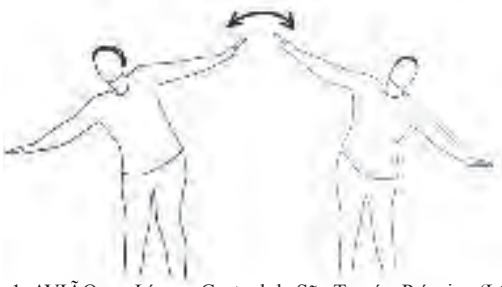

Figura 1: AVIÃO em Língua Gestual de São Tomé e Príncipe (LGSTP)

Figura 2: CABRA em Língua Gestual Portuguesa (LGP)

Intrigados por esta diferença fomos perceber quando e como é que o espaço sintático se amplifica ou se reduz numa língua gestual emergente: a Língua Gestual de São Tomé e Príncipe (doravante LGSTP).

2. A Língua Gestual de São Tomé e Príncipe

2.1 O projeto Sem Barreiras

A LGSTP nasceu a partir da implementação do projeto *Sem Barreiras* executado pelo Instituto Marquês de Valle-Flôr em parceria com o Ministério da Educação, Cultura e Ciência da República Democrática de São Tomé e Príncipe, com a CUF Infante Santo e com o Instituto de Ciências da Saúde da Universidade Católica Portuguesa. Este projeto foi financiado pela Fundação Calouste Gulbenkian, no âmbito de projetos de Investigação e Desenvolvimento.

A necessidade deste projeto assentou num pedido expresso do Governo de São Tomé e Príncipe em funções em 2013.

Entre 2013 e 2015, foi desenhado um projeto de intervenção linguística que visou reunir surdos (crianças e jovens) da ilha de São Tomé para, em conjunto, criarem uma língua comum que lhes permitisse, mais tarde, ficar inseridos numa comunidade linguística e cultural e poder frequentar a escola através de um programa de ensino especial, pensado para esta população.

Sendo impossível, temporal e financeiramente, englobar, neste projeto, todos os surdos santomenses, que rondam os 5000 indivíduos, tendo em conta os vários graus de surdez (ligeira, moderada, severa e profunda), a equipa optou por trabalhar com um grupo piloto só com surdos profundos e com idades jovens. A escolha dos participantes deste grupo piloto foi feita com base no levantamento realizado pela equipa de otorrinolaringologia do Hospital CUF Infante Santo (grau de surdez) e ainda com base nos dados fornecidos pelo Governo de São Tomé e Príncipe (Ministério da Educação, Cultura e Ciência). Foram, assim, escolhidos os surdos com surdez profunda, sendo estes crianças e jovens que não frequentavam a escola, por serem surdos e os professores não conseguirem ensinar estes indivíduos, visto não existir uma língua comum. Neste grupo selecionado foram feitos, por uma missão de psicólogas experientes, testes de natureza cognitiva não-verbal (matrizes de Raven e

teste da figura humana) que permitiram perceber se os indivíduos eram apenas surdos ou se tinham comorbilidades de natureza cognitiva que impedissem uma aquisição natural da linguagem. Na amostra testada, todos os indivíduos revelaram uma inteligência não-verbal média ou acima da média. O número de participantes foi de 100. Todos os participantes tinham idades compreendidas entre os 4 e os 25 anos (sexos feminino e masculino) e não frequentavam a escola, pelos motivos já expostos, não sabendo, portanto, nem ler nem escrever. Todos pertenciam a famílias numerosas. No que respeita ao ambiente linguístico das famílias dos participantes surdos, o mesmo era caracterizado por uma utilização maioritária, em casa, do Forro (um dos crioulos de São Tomé), e, na escola (irmãos dos participantes e em interações entre família e escola), do Português. Estes dados foram recolhidos através de questionário oral às famílias dos participantes. A par do ambiente linguístico foram também observadas as condições de socialização dos surdos nas suas famílias, primeiro através da utilização de um questionário e depois através de visitas pontuais, mas sistemáticas, ao longo dos dois anos de projeto, às famílias. Neste sentido, foi apurado que os membros surdos das famílias, participantes no grupo piloto, não mantinham grande interação comunicativa com os restantes membros da família. No caso dos participantes surdos com irmãos surdos (2 casos), os mesmos desenvolveram entre si uma comunicação gestual. Nos restantes casos, a interação era feita através de gestos pactuados para cobrirem as necessidades de comunicação diárias. Também é de referir que os surdos não se conheciam entre si antes de se encontrarem através do projeto.

O projeto *Sem Barreiras*, com o grupo piloto acima descrito, decorreu entre fevereiro de 2013 e fevereiro de 2015.

Foram assegurados pelo financiamento obtido no projeto os meios de transporte necessários para que os participantes, dispersos geograficamente, pudessem participar diariamente nas atividades do projeto. Foi assegurada a permanência a tempo completo de uma monitora surda experiente em ensino de surdos e com o grau de Mestre, com a Língua Gestual Portuguesa (LGP) como língua materna. Foram asseguradas duas salas para que se pudessem desenrolar diariamente as sessões. Tanto da parte do Ministério da Educação, Cultura e Ciência como da parte dos restantes parceiros, o trabalho realizado foi atentamente seguido e monitorizado. Todos os materiais escolares e de recolha foram também assegurados pelo financiamento do projeto, assim como a edição do dicionário do primeiro vocabulário da LGSTP. Todos os dias, durante a manhã, os participantes mais novos encontravam-se na sala de Santana para as sessões programadas. Em cada uma das duas sessões matinais (entre as 8 e as 13h, com 2 intervalos), sendo a primeira sessão às 8h e a segunda às 10h30, acorriam cerca de 25 participantes. Estes participantes tinham idades compreendidas entre os 4 e 14 anos. À tarde (15-17h), havia uma sessão para os participantes mais velhos (a participante mais nova tinha 15 anos e o mais velho 24) em Bombom. Os participantes de Santana iam à tarde a Bombom para atividades extracurriculares, desenho e convivência e os de Bombom iam de manhã a Santana com o mesmo intuito. Desta forma, os espaços de recreio eram comuns e havia contacto entre os vários surdos, das diferentes idades, inseridos no projeto. A necessidade de organizar estas duas turmas deveu-se a critérios de idade (identificação entre pares) e também fruto das condições logísticas (não ser possível ter 100 participantes numa única sessão).

Aos fins de semana, sábado ou domingo, e a partir de abril de 2013, foram sendo organizadas várias iniciativas, nas quais os surdos mais novos e os mais velhos se encontravam fora do espaço de sala para ir ao mercado, lavar roupa no rio, ir à praia ou passear em conjunto. Esses encontros eram promovidos pela monitora surda, que acompanhou semanalmente grande parte destas iniciativas (não podendo participar em todos). Todos estes encontros eram relatados na segunda-feira seguinte, ora de manhã, durante a sessão em Santana, ora de tarde, durante a sessão em Bombom. As sessões em Santana e em Bombom estavam organizadas no sentido de elicitar gestos. A monitora surda ia utilizando cartões com imagens e os surdos em conjunto iam propondo gestos. Alguns eram gestos trazidos da comunicação em casa, os gestos caseiros (*home signs*), mas que, em conjunto com o grupo de surdos, iam sendo modificados em gestos comuns, geralmente diferentes dos gestos caseiros. Esses gestos pactuados entre os participantes eram depois utilizados na comunicação entre eles. A monitora não utilizava a LGP e, quando precisava de interagir com os participantes, utilizava mímica. À medida que o vocabulário se foi consolidando, a própria monitora ia usando os gestos autóctones. Os cartões com imagens utilizados foram os mesmos que se utilizam nas associações de surdos para ensinar língua gestual. Existem cartões com imagens de objetos (copo, cama, alimentos, transportes, etc.) e emoções (pessoas contentes, tristes, zangadas, etc.) e existem cartões com imagens sucessivas que contam histórias (ida à pesca, compras no supermercado, cenas da vida doméstica, etc.). Numa primeira fase, foram usados apenas os cartões com imagens simples (objetos e emoções) e numa segunda fase foram usadas histórias por imagens. A partir de setembro de 2013, os participantes já possuíam um vocabulário notável e as sessões não consistiam apenas na mostra dos cartões, mas cada vez mais na exposição da vida quotidiana (hábitos, família, etc.) dos surdos participantes. Todas as sessões em sala foram filmadas e gravadas em vídeo com duas câmaras, de forma a cobrir visualmente e de forma sistemática os dois interlocutores surdos. Posteriormente, estas gravações foram colocadas numa base de dados que alberga este corpus na Universidade Católica Portuguesa e, mais tarde, alguns destes vídeos foram integralmente transcritos através do programa *Eudico Language Annotator* (doravante, ELAN). Os outros vídeos não foram integralmente transcritos, mas todos eles foram vistos e em cada um foram recolhidas as informações necessárias, como, por exemplo, a frequência dos gestos. Com base nas frequências mais altas de ocorrências dos gestos nos vídeos (dadas pelo ELAN) selecionaram-se os gestos que obtiveram uma maior frequência. Desta forma, chegámos a um primeiro passo daquilo que, nesta fase do projeto, seriam os gestos mais usados pelos participantes. Neste primeiro momento (até ao final de 2014), o foco desta investigação foi lexical, já que o objetivo era dicionarizar os gestos comuns, mais frequentes e mais consolidados para a posterior escolarização dos alunos surdos. O dicionário foi assim conseguido através da seleção dos gestos mais usados ao longo do tempo pelos surdos (Carmo et al., 2014). Num segundo momento e já fora do escopo temporal do projeto, a observação incidiu ao nível da estrutura frásica básica dos enunciados transcritos. Esta metodologia permitiu-nos fazer uma primeira análise linguística dos gestos e da gramática emergentes já apresentados noutros trabalhos (Mineiro & Carmo, 2016; Mineiro et al., 2017, Mineiro et al., 2021) e que agora brevemente relembramos.

2.2. Características Linguísticas da LGSTP

A partir da visualização e da transcrição de dados no programa ELAN de um número significativo de horas ao longo do projeto (25% das gravações), foi possível identificar algumas tendências linguísticas nesta nova língua.

As análises incidiram sobre transcrições na fase 1 (fevereiro de 2013 a julho de 2013), na fase 2 (setembro 2013 a fevereiro de 2014), na fase 3 (março de 2014 a julho de 2014) e na fase 4 (setembro de 2014 a fevereiro de 2015).

À semelhança das outras línguas de modalidade gestual, a LGSTP partilha as mesmas características universais no que respeita a fonologia, a morfologia e a sintaxe.

Assim, os gestos distinguem-se fonologicamente por serem executados pelos articuladores manuais (as duas mãos) e pelos não manuais (tronco, cabeça, braços, pernas). Os gestos são articulados a partir de características fonológicas internas como a configuração, a localização e o movimento. A expressão facial é também determinante nesta língua gestual.

Na LGSTP os gestos mostram uma tendência fonológica para serem executados com ambas as mãos, na fase 1 na fase 2, apresentando um decréscimo desta tendência na fase 3 e 4 (Mineiro et al. 2021). No que respeita à utilização dos articuladores manuais, esta nova língua socorre-se, ao longo das quatro fases, mas com maior insistência nas três primeiras, de articuladores não manuais como os braços, a cabeça o tronco e as pernas (Mineiro & Carmo, 2016, Mineiro et al., 2021).

No que concerne a morfologia, os gestos da LGSTP não exibem em nenhuma fase indícios flexionais mas mostram algumas tendências derivacionais e composicionais. A partir de gestos existentes da fase 1 e da fase 2, na fase 3 e 4 encontram-se em crescendo gestos que são construídos sobretudo por composição ainda que alguns também reflitam mecanismos derivacionais (Mineiro & Carmo, 2016, Mineiro et al., 2017).

No que diz respeito à sintaxe (Carmo et al., 2014, Mineiro & Carmo, 2016, Mineiro et al., 2017) e daquilo que nos é dado observar, podemos concluir que a ordem básica dos constituintes é ainda muito hesitante e instável, parecendo, todavia, sobressair, nas produções analisadas uma predominância de uma ordem de superfície OSV (e.g. PEIXE EU NÃO VI).

Todas estas características foram observadas numa fase muito precoce de eclosão de uma língua nova, pelo que, certamente, só o tempo e a investigação futura nos poderão trazer respostas sobre o caminho linguístico que esta língua irá tomar.

No âmbito deste artigo apenas nos concentraremos na utilização do espaço sintático por um conjunto de gestos ao longo das quatro fases de recolha e de transcrição.

3. Método e Procedimentos

Foram observados 1000 gestos que incluem, nas fases 1 e 2, gestos pantomímicos posteriormente transformados, nas fases 3 e 4, em gestos lexicais, produzidos em contexto eliciado, em sala de aula e nas quatro etapas da recolha de dados. Observámos esses 1000 gestos classificando-os dicotomicamente, quanto ao espaço sintático, nos quais são articulados, através da utilização dos parâmetros:

a) Espaço Medial e Lateral;

b) Espaço Proximal e Distal:

c) Espaço Superior e Inferior.

Após a classificação dos mesmos ao longo das quatro fases de recolha e análise de dados, aplicámos um teste de estatística inferencial, o teste MacNemar onde se consegue verificar a existência de diferenças significativas entre as duas fases. Este teste funciona muito bem com medidas dicotómicas como as utilizadas e consegue-nos dar uma moldura de relevância estatística na interpretação dos dados.

4. Resultados

No que respeita ao espaço **Medial** e **Lateral,** o teste MacNemar revela uma diferença significativa, para $p < 0,001$, entre a fase 1 e a fase 2, tendo havido um aumento de gestos Medial de 1,2%, da fase 2 para a fase 3; a diferença foi significativa para $p < 0,05$ sendo o aumento de 0,7%. Entre a fase 3 e 4 não se observou uma diferença significativa para $p < 0,05$. Neste sentido o aumento de gestos Medial ocorre sobretudo na fase 2 para a fase 3 estabilizando entre a fase 3 e a fase 4, tal como podemos observar na Tabela 1.

Tabela1 - Teste McNemar : Comparação dos pares de momentos no uso do espaço Medial

Espaço Medial	**Fase 1 Vs Fase 2**	**Fase 2 Vs Fase 3**	**Fase 3 Vs Fase 4**	**Fase 1 Vs Fase3**	**Fase 1 Vs Fase 4**	**Fase 2 Vs Fase 4**
SIM/SIM Nº de gestos que se mantiveram como MEDIAL nas 2 fases	15,6% (156)	23,0% (230)	30,0% (300)	15,6% (156)	15,6% (156)	23,0% (230)
NÃO/NÃO Nº de gestos que não eram MEDIAL nas 2 fases	83,2% (832)	76,3% (763)	69,8% (698)	82,5% (825)	83,6% (836)	76,4% (764)
SIM/NÃO Nº de gestos que eram MEDIAL (+) e deixaram de ser de uma fase para outra	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
NÃO/SIM Nº de gestos que não eram MEDIAL e passaram a ser MEDIAL de uma fase para outra	1,2% (12)	0,7% (7)	0,2% (2)	1,9% (19)	0,8% (8)	0,6% (6)
Total Gestos	100% 1000	100% 1000	100% 1000	100% 1000	100% 1000	100% 1000
Teste McNemar	$p < 0,001$	$P < 0,05$	$P > 0,05$	$p < 0,001$	$p < 0,01$	$p < 0,05$

No que concerne ao *espaço* **Proximal** e **Distal,** o teste MacNemar revela uma diferença significativa, para $p < 0,001$, entre todas as fases, no número de gestos proximal. Da fase 1 para a fase 2 houve um aumento de 4,6% nesses gestos. Da fase 2 para a fase 3 o aumento foi de 11,9% e da fase 3 para a fase 4 o aumento foi de 20,4%, tal como podemos observar na Tabela 2.

Tabela2 - Teste McNemar : Comparação dos pares de momentos no uso do espaço *Proximal*

Espaço Proximal	Fase 1 Vs Fase 2	Fase 2 Vs Fase 3	Fase 3 Vs Fase 4	Fase 1 Vs Fase3	Fase 1 Vs Fase 4	Fase 2 Vs Fase 4
SIM/SIM Nº de gestos que se mantiveram como PROXIMAL nas 2 fases	18,0% (180)	22,6% (226)	23,4% (234)	18,0% (180)	18,0% (180)	22,6% (226)
NÃO/NÃO Nº de gestos que não eram PROXIMAL nas 2 fases	77,4%% (774)	65,5% (655)	56,2% (562)	65,5% (655)	56,2% (562)	56,2% (562)
SIM/NÃO Nº de gestos que eram PROXIMAL (+) e deixaram de ser de uma fase para outra	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
NÃO/SIM Nº de gestos que não eram PROXIMAL e passaram a ser PROXIMAL de uma fase para outra	4,6% (46)	11,9% (119)	20,4% (204)	16,5% (165)	25,8% (258)	21,2% (212)
Total Gestos	100% 1000	100% 1000	100% 1000	100% 1000	100% 1000	100% 1000
Teste McNemar	p < 0,001	P < 0,001	P < 0,001	p < 0,001	p < 0,001	p < 0,001

No que diz respeito ao espaço **Superior** e **Inferior,** o teste MacNemar apresenta uma diferença significativa, para p < 0,001, entre todas as fases, no número de gestos de espaço superior. Da fase 1 para a fase 2 houve um aumento de 20,6% nesses gestos. Da fase 2 para a fase 3 o aumento foi de 13,6% e da fase 3 para a fase 4 o aumento foi de 4,5%, tal como podemos observar na Tabela 3.

Tabela3 - Teste McNemar : Comparação dos pares de momentos no uso do espaço Superior

Espaço Superior	Fase 1 Vs Fase 2	Fase 2 Vs Fase 3	Fase 3 Vs Fase 4	Fase 1 Vs Fase3	Fase 1 Vs Fase 4	Fase 2 Vs Fase 4
SIM/SIM Nº de gestos que se mantiveram como SUPERIOR (+) nas 2 fases	40,3% (403)	60,9% (609)	75,4% (754)	40,3% (403)	40,3% (403)	2,9% (29)
NÃO/NÃO Nº de gestos que não eram SUPERIOR (+) nas 2 fases	39,1% (391)	25,5% (255)	20,1% (201)	25,5% (255)	23,7% (237)	79,0% (790)
SIM/NÃO Nº de gestos que eram SUPERIOR (+) e deixaram de ser de uma fase para outra	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
NÃO/SIM Nº de gestos que não eram SUPERIOR (-) e passaram a ser SUPERIOR (+) de uma fase para outra	20,6% (206)	13,6% (136)	4,5% (45)	34,2% (342)	36,0% (360)	18,1% (181)
Total Gestos	100% 1000	100% 1000	100% 1000	100% 1000	100% 1000	100% 1000
Teste McNemar	p < 0,001	P < 0,001	P < 0,001	p < 0,001	p < 0,001	p < 0,001

5. Discussão

Os resultados apresentados na seção anterior evidenciam uma tendência que se traduz em significância estatística para uma redução do espaço sintático, segundo critérios comumente aceites e oriundos da área da saúde e da engenharia biomédica.

O espaço sintático do gestuante na LGSTP é numa fase inicial amplo (fase 1) e vai decrescendo numa redução significativa ao longo das quatro fases de observação e colheita de dados.

Esse espaço sintático utilizado é reduzido nas diferentes fases, ainda que não haja um denominador comum por fase e medida dicotómica.

Assim, no espaço Medial e Lateral a maior diferença é da fase 1 para a fase 2 (1,2%) não se observando diferenças significativas entre a fase 3 e a fase 4. Os gestos da fase 1 para a fase 2 passam a ser mais gestuados no espaço mediano do corpo e menos gestuados na zona lateral do mesmo.

No que diz respeito ao espaço Proximal e Distal, o maior impacto observado deu-se da fase 3 para a fase 4, onde 20,4 % dos gestos passaram a ser gestuados mais próximos do torso reduzindo os gestos executados longe do corpo (tronco ou torso).

No que concerne o espaço Superior e Inferior, verificamos que a diferença significativa mais impressionante é da primeira para a segunda fase (20,6%). Nesta transição ocorrida num espaço temporal de um ano, os gestuantes santomenses passam a usar mais a parte de cima do corpo (da cintura para cima) do que a parte de baixo (joelhos e pernas).

Todos os resultados indiciam o papel relevante da economia articulatória. Os gestos passam a ser menos amplos, implicando um decréscimo motor na sua articulação. Este papel de economia articulatória plasma-se bem, por um lado, com o princípio universal da economia linguística. Por outro lado, esta redução pode ser comparável às fases de aprendizagem psicomotora no desenvolvimento infantil que leva sempre a adaptações do movimento motor no sentido da redução e da eficiência neural (Dunst et al., 2014).

Estes resultados refletem também uma tendência linguística que vai da pantomima para o gesto (Mineiro et al., 2021). Se, no início, os participantes precisavam, na sua sede de comunicar, de utilizar todo o corpo e todo o espaço para veicular entre si informação semântica, este esforço deixou de ser necessário quando os gestos se foram consolidando para cada referente, havendo por isso uma lexicalização dos gestos que deixaram de gravitar a esfera linguística e passaram a ter o seu lugar consolidado dentro da mesma.

O espaço sintático de maior amplitude utilizado nas fases iniciais desta língua emergente reflete uma necessidade real de comunicação e de entendimento entre pares, que, de outra forma, sem língua prévia e sem a utilização da pantomina não conseguiriam comunicar.

Nas línguas gestuais mais antigas ou maduras o espaço sintático é reduzido, no que respeita à interação linguística comum, e aumenta significativamente quando o gestuante utiliza esse espaço para se exprimir poeticamente em língua gestual, rompendo os cânones estabelecidos para a representação dos gestos no espaço.

No presente caso, não se tratou de romper cânones para a expressão literária, mas aceder a um meio de comunicação visuo-espacial que, com o tempo, se foi aprimorando e transformando num verdadeiro sistema linguístico.

6. Notas finais

Este estudo permitiu-nos observar como o espaço sintático, espaço onde os gestos de uma língua gestual são produzidos, se modifica rapidamente numa língua emergente. De um espaço amplo a nível de utilização de todo o corpo e da produção dos gestos afastados do corpo, vamos chegando a gestos mais próximos do tronco e que diminuem significativamente em termos da área espacial ocupada.

Esta redução do espaço sintático leva-nos a concluir que se trata de um processo universal de economia linguística e um processo neurolinguístico que aponta para uma eficiência neural e um menor dispêndio de energia motora na articulação do gesto e na utilização do espaço.

Pensamos que este trabalho poderá ser útil para compreendermos a ponte entre os sistemas comunicativos iniciais em populações surdas privadas de uma língua e os sistemas linguísticos que emergem desses primeiros contactos e que se tornam cada vez mais eficientes para a comunicação linguística.

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8. Consentimento Ético

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Estudo sobre a construção e reconstrução de referentes no *corpus* Libras-LSE

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Abstract

Here we present some preliminary results of a comparative study (in progress), based on the referential process, involving, on the one hand, the Brazilian Sign Language (Libras) and, on the other hand, the Spanish Sign Language (LSE). In this study, we analyze not only the peculiarities, but also, and above all, the similarities established between them with regard to the construction and reconstruction of referents in an enunciative environment. It is a qualitative research, whose analysis data are extracted from a parallel corpus composed from narratives produced by deaf, Brazilian and Spanish, with the background of the history of pears (*Pear Film*). What the results obtained so far have shown us is that, although each language uses its own strategies, in well-defined situations the referential process in both languages manifests itself in a very similar way, notably with the recurrent use of the combination of deictic elements and anaphors, forming a complex unit that we will call Deictic-Anaphoric construction.

Keywords: Brazilian Sign Language; Spanish Sign Language; Referential Process; Deictic-Anaphoric Construction.

Resumo

Apresentamos neste artigo alguns resultados preliminares de um estudo comparativo (em andamento), tomando-se por base o processo referencial, envolvendo,

de um lado, a Língua Brasileira de Sinais (Libras) e, de outro, a Língua de Sinais Espanhola (LSE). Neste estudo, analisamos não apenas as diferenças, mas também, e sobretudo, as semelhanças estabelecidas nas duas línguas no âmbito da construção e reconstrução de referentes em ambiente enunciativo. É uma pesquisa qualitativa, cujos dados de análise são extraídos de um corpus paralelo composto por narrativas produzidas por surdos, brasileiros e espanhóis, tendo como pano de fundo a história das peras (*Pear Film*). O que os resultados obtidos até agora vêm nos indicando é que, embora cada língua use suas próprias estratégias, em situações bem marcadas, o processo referencial numa e noutra língua se manifesta de modo bastante semelhante, notadamente com o uso recorrente da combinação de dêiticos e anáforas, formando uma unidade complexa a que nos referiremos por construção Dêitico-Anafórica.

Palavras-Chave: Língua Brasileira de Sinais (Libras); Língua de Sinais Espanhola (LSE); Processo Referencial; Construção Dêitico-anafórica.

1. Introdução

É por meio da língua de sinais que os surdos podem adquirir conhecimento do mundo, construir sua própria história e desenvolver sua identidade enquanto ser humano e cidadão. As línguas de sinais, línguas naturais das comunidades surdas, são realizadas visualmente no espaço por meio de movimentos executados por uma ou pelas duas mãos, podendo ou não a esses movimentos estarem associadas outras partes da região superior do corpo (p.ex., dorso, braços/antebraços, pescoço, ombros e cabeça), bem como expressões faciais, também referidas por Expressões Não Manuais (ENM).

Apesar de apresentarem semelhanças, em cada país pode haver uma ou mais línguas de sinais distintas, cada qual com um léxico próprio, adequado à realidade de cada uma de suas comunidades. No que diz respeito ao Brasil, a língua utilizada pelos surdos é a Libras, acrônimo oriundo de Língua Brasileira de Sinais. Já em Espanha, por exemplo, há pelo menos três línguas de sinais diferentes, dependendo da região em que se encontra, a saber: Língua de Sinais espanhola (LSE), Catalã (LSC) e Valenciana (LSV)[1], embora, para os objetivos que traçamos, o nosso foco seja tão somente a LSE.

Embora a Libras já venha sendo usada pelos surdos brasileiros já há bastante tempo, foi apenas em 2002, com a publicação da Lei n.º 10.436, de 24 de abril, regulamentada pelo Decreto n.° 5.626, de 22 de dezembro de 2005, que ela passou a ser oficialmente reconhecida no País, conforme o Artigo 1.º, como o "meio de comunicação e expressão de sua comunidade surda". Em relação a Espanha, a LSE só conseguiu esse reconhecimento cinco anos mais tarde, por meio da Lei n.º 27/2007, de 23 de outubro.

[1] Importa mencionar que alguns autores vão dizer que as línguas de sinais Catalã e Valenciana na verdade são simplesmente variantes da língua de sinais espanhola.

O fato de as línguas de sinais se manifestarem viso-espacialmente, portanto de um modo bastante distinto das línguas faladas-escritas, tem provocado o interesse não só de linguistas, como também de estudiosos de outras áreas do conhecimento, tais como psicólogos, fonoaudiólogos, linguistas computacionais e de Processamento da Língua Natural (PLN). Os resultados obtidos com a variada gama de pesquisas já concluídas e as que ainda se encontram em curso vêm se mostrando não apenas relevantes, mas, ao mesmo tempo, elucidativos e reforçadores de que, assim como as línguas faladas, as de sinais também se configuram como línguas, com léxicos próprios, bem como estruturas e regras gramaticais muito bem definidas e delimitadas.

Investigar os processos e os mecanismos linguísticos envolvidos nas línguas de sinais tem sido um verdadeiro desafio para os seus estudiosos. Dos diversos fenômenos linguísticos que se manifestam nessas línguas, os processos referenciais são um dos assuntos que mais têm nos chamado a atenção. Por serem decisivos para a condução da progressão textual, para a constituição dos sentidos e para os propósitos comunicativos estabelecidos entre os "falantes", tentar entender como esses processos são construídos nas línguas de sinais, aqui mais especificamente referindo-nos à Libras e LSE, permite-nos não só identificar, mas também, e principalmente, estabelecer pontos de contatos que nos possibilitem perceber até que ponto há semelhanças e diferenças entre as duas.

Com isso em mente, buscamos responder às seguintes questões: (i) Como acontece o processo referencial em Libras? E em LSE? (ii) São usadas na Libras as mesmas estratégias de construção e reconstrução do objeto do discurso usadas na LSE?

O texto se organiza em quatro seções, além da Introdução e das Referências bibliográficas. Na seção 1, passamos em revista a "*Base teórica"* com a qual estamos trabalhando, para tanto tomando por alicerce os pressupostos teóricos defendidos por Ciulla (2008), Colamarco (2014), Koch & Elias (2006), Mondada & Dubois (2003), Morais (2017), Bidarra & Reis (2013), esses mais diretamente voltados para os aspectos gerais e básicos envolvidos com os processos referenciais nas línguas de uma maneira geral, e mais especificamente em relação às línguas de sinais Comier (2015), Landaluce (2016), Morales López (2019), Pizzuto et al. (2006), Quadros (2013), Reis (2020; 2019) e Schlenker (2016), com o foco nas línguas de sinais. Na seção seguinte, discorremos sobre a "*Metodologia*". Na seção 3, apresentamos as análises e os resultados obtidos até o presente momento; concluindo - seção 4, com as considerações finais.

2. Base teórica

Para esse estudo, adotamos a perspectiva teórica da referenciação em que os processos referenciais são produzidos na interação, tendo como base atividades cognitivas, sociais e o próprio entorno discursivo em que os falantes se encontram. Assim sendo, a referenciação retrata uma forma de construção e reconstrução de objetos do discurso realizados por sujeitos, em um processo de interação, o que significa dizer que carrega, entre outros aspectos, os interesses e os pontos de vista dos interlocutores envolvidos no processo discursivo (Mondada & Dubois, 2003; Koch & Marcuschi, 1998). Em outras palavras, essa construção e reconstrução de objetos do

discurso, que se constituem como um processo dinâmico fundamental na progressão textual, ocorrem quando um objeto é lançado no texto (introdução) e utilizado novamente (retomada), podendo a qualquer momento ser desativado (desfocalização) e reativado no curso da progressão textual (Koch & Elias, 2006).

Segundo Ciulla (2008), os elementos referenciais promovidos na malha discursiva imbricam-se, de modo que não podemos interpretar completamente um sem ver o outro. Nessa perspectiva, a autora propõe o possível entrecruzamento da anáfora com a dêixis, pois, conforme suas reflexões, uma mesma expressão desempenha, de uma só vez, funções não apenas relacionadas a retomadas, muitas vezes combinadas com gestos de apontar, isto é, há em um mesmo elemento referencial a simultaneidade do dêitico e da anáfora, caracterizando um hibridismo discursivo. Assim sendo, dêixis e anáforas, ainda que sejam fenômenos referenciais diferentes, não se excluem. Vejamos o exemplo de Ciulla (2008):

> Felipe e Rodrigo gostam de futebol. Este torce para o Inter, aquele torce para o Grêmio (Ciulla, 2008, p. 57).

Esse recorte textual mostra claramente o processo referencial por meio da anáfora e do dêitico, simultaneamente. O elemento referencial "*este*" retoma o referente "*Rodrigo*", por meio da anáfora, e ao mesmo tempo o marca num determinado espaço, mediante o dêitico. Nesse contexto, Ciulla (2008) afirma que "o processo referencial dêitico indica os limites do objeto referido no tempo e no espaço". Também destaca que "a dêixis pode referir-se ao próprio texto ou a situação extralinguística" (Ciulla, 2008, p. 67).

O fato de a dêixis ocorrer simultaneamente à anáfora, por exemplo, faz Ciulla (2008) sugerir que os processos referenciais não sejam considerados em grupos à parte, mas em uma classificação que permita a sobreposição. Assim, a autora defende a referenciação como uma fusão de operações cognitivas, sociais e interativas realizadas pelos usuários da língua.

Especificamente sobre o processo referencial nas línguas de sinais, Schenker (2016), autor contemporâneo da língua de sinais americana (ASL), defende que, nas línguas visuoespaciais, o espaço e o apontamento (dêitico) são componentes efetivos da anáfora, principalmente quando se trata de uma anáfora pronominal. Em suas próprias palavras, "[...] if the pronoun is used anaphorically, the antecedent typically establishes a locus, which is then 'indexed' (=pointed at) by the pronoun. The antecedent Noun Phrases are accompanied with pointing signs that establish the relevant loci" (Schlenker, 2016, p. 7).

Nesse mesmo sentindo, Landaluce (2016), pesquisador espanhol que desenvolveu a tese "La deixis en la lengua de signos española (LSE): Efectos de la modalidad espaciovisual", aponta a anáfora como uma forma de uso da dêixis, trazendo uma discussão bastante congruente quanto a essa parceria referencial. Ele assevera que, embora em muitas línguas manifestem elementos exclusivamente anafóricos, que não têm vestígios dêiticos, é muito comum um elemento dêitico ser utilizado simultaneamente à anáfora nas línguas visuoespaciais.

Na Libras, conforme a pesquisadora Ferreira Brito (2010), uma especificidade do processo referencial é justamente o uso frequente da dêixis, concedendo-lhe um papel essencial na construção e na reconstrução do referente. Para a autora, a dêixis, no seu sentido mais "puro", tem a função apenas referencial. Atualmente, no entanto, o conceito de dêixis tornou-se muito mais amplo e muitos deles transmitem informações não-referenciais também. "*Os dêiticos são usados frequentemente, em Libras, para referirem e correferirem.* Por correferência, entende-se aqui todos os termos que tradicionalmente são chamados de anáfora e catáfora" (Ferreira Brito, 2010, p. 116, grifos nossos). É razoável afirmarmos, portanto, que, assim como em outras línguas de sinais, na Libras o dêitico, além de exercer a função de apontar, também executa o papel de retomar; ou seja, há um exercício simultâneo do dêitico e da anáfora, o qual é denominado de dêitico-anafórico.

Para Reis (2020; 2019), partindo da perspectiva da referenciação como uma prática discursiva, marcada por situações sociocognitivas e interacionais, torna-se indispensável destacar a simultânea relação entre a anáfora e a dêixis na Libras, o que contribui efetivamente para a construção dos sentidos entre os sinalizantes e o desenvolvimento de cadeia referencial específica da modalidade visuoespacial, representando a dinamicidade e a fluidez entre os processos referenciais na Libras.

Assim como na ASL, na LSE e na Libras, Meurant (2008) também nos mostra a possibilidade de o dêitico e a anáfora ocorrerem simultaneamente na LSFB (Língua de Sinais da Bélgica), via '*loci*'. Segundo a autora, o *'loci'* e a 'transferência de pessoa' (já definida por Cuxac, 2000) podem ser apontados como o ponto de referência para o valor anafórico.

Dentro do quadro anafórico de referência, um valor é apontado como um marco para o outro; isto é, há um processo de 'ostentação' (o que é referido pelo conceito de 'dêixis') dentro do campo anafórico de referência (daí o 'pseudo'). Funciona como se as coordenadas dêiticas fossem projetadas em espaços anafóricos – temos, dessa forma, o dêitico-anafórico.

No texto "*Deixis, Anaphora and Highly Iconic Structures: Crosslinguistic Evidence on American (ASL), French (LSF) and Italian (LIS) Signed Languages*", Pizzuto *et al.*(2006) discutem a construção do dêitico-anafórico nas línguas de sinais. Em seus estudos, definem as estruturas dêitico-anafóricas como recurso de coesão textual que permitem os falantes ou sinalizantes mostrarem (dêixis) e retomarem (anáfora) referentes no discurso, simultaneamente. A partir de uma análise comparativa de narrativas sucintas produzidas na ASL, na LSF e na LIS, a pesquisa proporciona evidências importantes sobre o processo referencial nas três línguas de sinais. Os autores propõem duas grandes classes de dêitico-anafóricos nas línguas visuoespaciais: (a) *classe 'padrão'*, realizada por meio de apontações manuais e visuais, que estabelecem posições marcadas no espaço (os '*loci*'). Nessa classe, os referentes podem ser simbolicamente atribuídos. Alguns fatores são relevantes para o processo anafórico nessa classe, entre eles: i) a direção do olhar: a anáfora ocorre com a marcação acentuada da direção dos olhos; ii) a soletração (datilologia): o pronome chama a atenção do interlocutor para a soletração, e a relação entre a soletração e o objeto referido é de inferência, como no exemplo: <ELA M-A-R-I-A>; e iii) a locação: apontamento direcionado no espaço; e (b) *classe de complexas unidades manuais e não manuais*, que

não são sinais de apontação nem podem ser classificadas como sinais padrões. Essas unidades apresentam características altamente icônicas – denominadas Estruturas Altamente Icônicas (EAIs) ou '*Transferências*' (Cuxac, 2000) - e são marcadas por padrões específicos do olhar, por formas manuais que codificam atributos perceptíveis salientes das relações entre o referente e o elemento referencial (Classificadores) e por expressões faciais marcadas e/ou modificações da cabeça, dos ombros e do tronco, tipicamente identificadas como 'recursos de troca de papéis'.

Explicam os autores que essas duas formas consistem na opção consciente do sinalizante em ilustrar ou não o que diz. Supomos, então, que esses elementos sejam mais que ilustrações, podemos considerá-los como objetos do discurso construídos no espaço físico, para serem retomados por meio do dêitico-anafórico (Reis, 2019). Essas classes, 'padrão' e 'de complexas unidades manuais e não manuais', foram amplamente detectadas nas línguas de sinais estudadas, por essa razão, podem representar uma das características que distanciam essas línguas das línguas faladas, fato esse detectado, por exemplo, na investigação de Reis (2019). Tais classes são, aparentemente, muito semelhantes em várias outras línguas de sinais do mundo, o que torna plausível supor que elas sejam estruturas universais ou quase universais (Pizzuto et al., 2006).

3. Metodologia

Para a realização da pesquisa, partimos de uma metodologia de cunho qualitativo, em que o *corpus* é constituído de gravações de narrativas baseadas na história das peras -*Pear Film*[2] (Chafe, 1980) - feitas com colaboradores surdos, os quais têm a língua de sinais como sua língua natural, sendo surdos fluentes em Libras e surdos fluentes em LSE[3]. Tivemos três colaboradores surdos em Libras, e três em LSE. Em Libras foram três mulheres, com idades entre 30 e 40 anos, todas da mesma região do Paraná/Brasil. Em LSE foram dois homens e uma mulher, com idades entre 35 e 45 anos, os quais vivem na Galiza/Espanha. Assim, tivemos um total de três narrativas sinalizadas da história das peras em Libras e três em LSE.

Para a coleta de dados, pedimos aos colaboradores surdos que assistissem ao vídeo *Pear Film*, o qual apresenta a história de um trabalhador do campo durante a colheita de peras e um menino que rouba uma das cestas de peras escondido do agricultor. Após verem o vídeo até compreenderem, solicitamos que narrassem a história que viram, em língua de sinais, momento esse em que gravamos os surdos. Por esses fatores, consideramos que o procedimento de coleta dos dados é de uma situação comunicativa semiespontânea.

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[2] Vídeo *Pear Film* disponível em: https://www.youtube.com/watch?v=bRNSTxTpG7U. Vale destacar que a "história da pera" é o nome que se usa para fazer referência a qualquer narrativa baseada no filme da pera, produzido por Wallace Chafe, em 1970, com o objetivo de eliciar contações de histórias em diversas línguas, para embasar estudos translinguísticos e transculturais (Mccleary & Viotti, 2011).

[3] Destacamos que o trabalho de coleta e preparação dos dados em LSE foi realizado em conjunto com o grupo de investigação "Gramática, Discurso e Sociedade (GRADES)", da Universidade de Vigo.

Com as gravações realizadas, o próximo passo foi transcrevê-las em glosas Libras-LSE. Para anotação do *corpus,* com suas respectivas trilhas linguísticas, usamos o programa Elan (EUDICO – *Linguistic Annotator*). Para a glosa-Libras, adotamos o sistema de anotação dos sinais por meio de glosas proposto por Quadros & Pizzio (2007), e adaptado por Reis (2019). A glosa-LSE foi desenvolvida em parceria com o grupo GRADES, a partir do sistema de anotação de Johnston (2010). As glosas foram organizadas de forma a constituir um *Corpus* paralelo, em conformidade com os pressupostos defendidos pela Linguística de *Corpus*, por meio do qual nos foi possível analisar o processo referencial tanto na Libras quanto na LSE, buscando destacar, por análises comparativas, não apenas as semelhanças, como também as diferenças na condução da cadeia referencial numa e noutra línguas.

4. Estratégias referenciais em Libras e em LSE

Selecionamos, para esse momento, algumas das nossas análises oriundas de uma narrativa sinalizada da história das peras em Libras e uma em LSE. Primeiro, analisamos o processo referencial em Libras, em seguida o fazemos em LSE. Para as análises, consideramos as teorias estudadas, notadamente, com relação à perspectiva da referenciação e à proposta de análise dos processos referenciais nas línguas de sinais, em especial a de Pizzuto et al. (2006). Concordamos que essas teorias dialogam entre si, e podem proporcionar evidências importantes sobre o processo referencial em Libras e em LSE.

Consideramos, ainda, nas análises os processos referenciais *Introdução e Retomada* (Koch & Elias, 2006). No processo de *Retomada,* valoramos a presença das classes de dêiticos-anafóricos, *padrão* (DA-P[4]) e *de complexas unidades manuais e não manuais* (DA-CUMyNM[5]). Na classe *padrão,* tendo em vista os estudos de Reis (2019), apreciamos as retomadas de ordem gramatical (por pronomes, por elipses, etc.) e de ordem lexical (por repetição, por sinônimos, etc.), conforme características apresentadas durante as análises no *corpus*.

Selecionamos para essa ocasião dois referentes/objetos do discurso presentes na história da pera, são eles: PERA e HOMEM.

O processo referencial em Libras

Nessa subseção, analisamos o processo referencial em Libras. Para efeito de organização, disponibilizamos em formato de tabelas, os dados de análise. Conforme podemos ver a seguir, na primeira tabela (01) temos quatro colunas, sendo a primeira composta pelos referentes, ou seja, objetos do discurso; a segunda está dedicada à introdução; a terceira ao processo de retomada; e a quarta à classificação desse processo.

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4 Durante as análises, nas tabelas, usamos a sigla DA-P para referir-se a dêitico-anafórico de classe padrão.

5 Durante as análises, nas tabelas, usamos a sigla DA-CUMyNM para referir-se a de complexas unidades manuais e não manuais.

Tabela 1 - Processo Referencial na história 'The Pear Film' narrada em Libras

Processo referencial em '*The Pear Film*': Libras			
Referente/Objeto do discurso	**Introdução**	**Retomada**	**Classificação do processo de retomada**
Referente 01: pera Referente 02: homem	PERA <p-e-r-a> HOMEM VELH@ BIGODE-GROSSO CHAPEU LUTAR++ TRABALHAR+	IX-CL(homem-colhendo-peras - oc<olhar para cima> - ef<atento>) . CL(homem-colocando-peras-avental^cesto - ob<olhar para baixo> - ef<esforço>) . CL(homem-colhendo-peras)<mão direita> . CL(homem-colhendo-peras)<mão esquerda> . CL(homem-colocando-peras-avantal^cesto)<mãodireita> . CL(homem-colocando-peras-avental^cesto)<mãoesquerda> · CL(homem-colhendo-peras)<mão direita> . CL(homem-colhendo-peras)<mano esquerda>· CL(homem-colocando-peras-avental^cesto)<mão direita> . CL(homem-colocando-peras-avental^cesto)<mãoesquerda> · CL(homem-colhendo-peras)<mão direita> CL(homem-colhendo-peras)<mãoesquerda> · CL(homem-colocando-peras-avental^cesto)<duas mãos simultaneamente>)	-Padrões específicos do olhar; -Classificador; -Expressões faciais marcadas; -Role shift. DA-CUMyNM

Na tabela 01 os referentes em análise são 'pera' e 'homem'. Conforme podemos visualizar, a introdução do referente 'pera' se realiza com o sinal PERA, seguido de sua datilologia <p-e-r-a>. Esse processo de introdução - sinal seguido de datilologia - já evidencia a preocupação do surdo em aclarar ao seu interlocutor a construção desse objeto do discurso na narrativa. A introdução do referente 'homem' se realiza com os sinais HOMEM VELH@ BIGODE-GROSSO CHAPEU LUTAR++ TRABALHAR+. O sinalizante já caracteriza na apresentação do referente que não se trata de qualquer homem, mas de um agricultor que está dedicado em trabalhar. Esse processo de introdução promove um convite para uma ativação de conhecimentos culturalmente compartilhados entre os usuários da Libras.

Após o processo de introdução, o sinalizante constrói o espaço narrativo da história da pera, e começa a desenvolver a cadeia referencial a partir da retomada dos referentes em destaque. Nesse sentido, trazemos na tabela 01 a primeira recuperação dos objetos do discurso 'pera' e 'homem', que consideramos relevante na narrativa. A retomada desses referentes, como o vemos na glosa-Libras, sucede em conjunto, por meio de padrões específicos do olhar e expressões faciais marcadas, a exemplo oc<olhar para cima> - ef<atento>. Também temos nesse processo de recuperação os classificadores, que mostram a forma do homem lidar com a PERA em seu trabalho de colheita. É como se a persona surda descrevesse no espaço de sinalização a cena do homem recolhendo peras, também das peras sendo armazenadas no cesto. Todos esses elementos juntos promovem o desenvolvimento efetivo do 'cambio de rol', ou seja, o sinalizante representa, pelo seu próprio corpo e atitude, o corpo e a atitude das personagens da história que ele está representando, no espaço discursivo. Nessa perspectiva, concordamos com Morales López et al. (2019, p. 114) quando dizem que "la utilización del espacio para representar el rol y semi-rol de los distintos personajes es un recurso al servicio de la cohesión discursiva, porque con estos recursos se produce la progresión temática y la conexión entre las distintas proposiciones" (Morales López et al., 2019, p. 114). Ten-

do em vista esses fatores elencados, classificamos então esse processo de recuperação como deíctico-anafórico de complexas unidades manuais e não manuais. Vale destacar que essa construção referencial foi muito frequente durante a narrativa.

A seguir, temos a figura da tela do Elan com alguns momentos do processo de recuperação analisado na tabela 1. Mostramos, na primeira imagem, a representação do homem recolhendo as peras. Na segunda, buscamos evidenciar os padrões específicos do olhar, assim como as expressões faciais marcadas. Por último, temos a imagem do homem colocando as peras colhidas no avental:

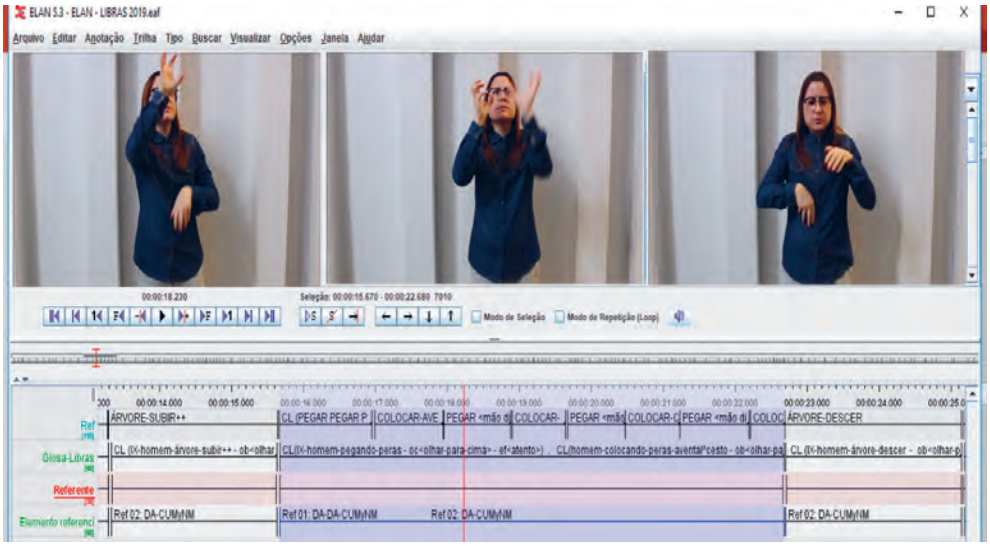

Figura 1: exemplo da tela do Elan com o processo referencial analisado na tabela 1

Na tabela 2, em continuidade às análises, temos uma primeira coluna composta do objeto do discurso selecionado para o momento – pera -, uma segunda com a recuperação do referente, em glosa-Libras, e por final a classificação do processo de recuperação.

Tabela 2 - Processo Referencial na história 'The Pear Film' narrada em Libras

Processo referencial em '*The Pear Film*': Libras		
Referente/Objeto do discurso	**Retomada**	**Classificação do processo de retomada**
pera	IXaIX(ØDAR)IXb *dar peras	DA-P<por elipse>

Nessa tabela, o referente 'pera' é recuperado por meio de uma elipse, que se corresponde sintaticamente com o objeto direto (IXAIX(Ø DAR)IXB = DAR o que? DAR PERA). Ao considerar todo o contexto discursivo, percebemos no verbo DAR o referente 'pera', implicitamente. É comum o uso da elipse quando se usa verbo direcional, nas línguas de sinais (Bernardino, 2000). Os verbos direcionais denotam movimento e posição no espaço e, por essa razão, admitem afixos locativos, que identificam locais

no espaço neutro da sinalização. O uso do espaço é sistemático nas línguas de sinais, favorecendo a identificação clara e correta do referente (Ferreira Brito, 2010). Há de se destacar também nesse processo referencial as marcações não manuais responsáveis por colaborar com a reconstrução do objeto do discurso por meio de uma elipse, entre elas citamos o olhar direcionado para o local no qual o referente foi construído, a sobrancelha e a testa franzidas. Todos esses fatores juntos colaboram para a constituição do dêitico-anafórico de classe padrão por elipse.

Vejamos em seguida a imagem do Elan no momento em que o sinalizante constrói o sinal DAR, que se caracteriza pelo contexto em 'dar peras'.

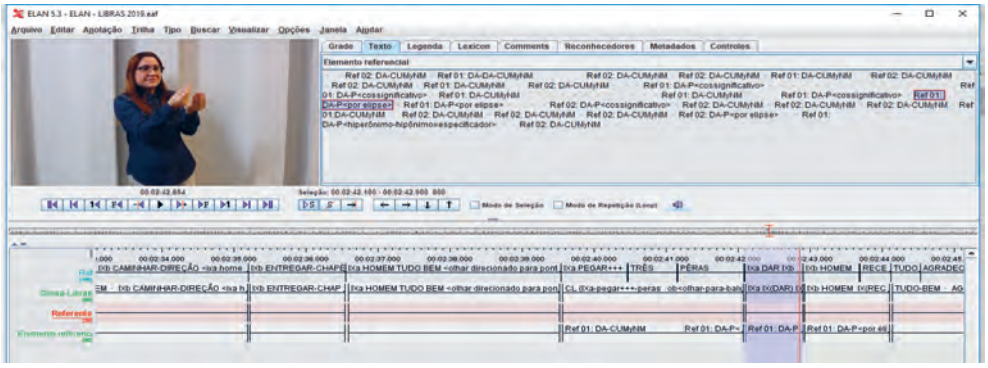

Figura 2: exemplo da tela do Elan com o processo referencial analisado na tabela 2

O processo referencial em LSE

Nessa parte analisamos o processo referencial em LSE, já estabelecendo relações contrastivas com a Libras. Seguimos a mesma dinâmica de organização que estabelecemos nas análises em Libras, ou seja, na tabela 03 a seguir temos quatro colunas, sendo a primeira composta pelos referentes; a segunda está dedicada à introdução; a terceira ao processo de recuperação; e a quarta à classificação desse processo.

Tabela 3 - Processo Referencial na história 'The Pear Film' narrada em LSE

Processo referencial em '*The Pear Film*': LSE			
Referente/Objeto do discurso	**Introdução**	**Retomada**	**Classificação do processo de retomada**
Ref 01: Hombre Ref 02: Pera	HOMBRE PERSONA PERA1	cl.m(5d>5):coger+guardar-pera cl.m(5d>5):coger+guardar-pera cl.m(5d>5):coger+guardar-pera cl.m(Cc>5d):echar-pera cl.m(5d):examinar-pera cl.m(4d):frotar-pera cl.m(4d):colocar-pera cl.m(5d>5):coger+guardar-pera cl.m(5d>5):coger+guardar-pera cl.m(5d>5):coger+guardar-pera	-Patrones específicos de la mirad; -Clasificador; -Expresiones faciales marcadas; -Rol. DA-CUMyNM

Em LSE, a introdução do referente ‘hombre’ na narrativa é realizada por meio dos sinais PERSONA HOMBRE. Diferente do que vimos em Libras, o surdo em LSE não caracteriza já no início esse ‘homem’, isso será feito somente no decorrer da narrativa. A introdução do objeto do discurso ‘pera’ sucede com o signo PERA1 - enumeramos assim porque há mais de um signo para a fruta ‘pera’ utilizado pelo sinalizante durante a gravação. Nesse sentido, é importante considerar que, na perspectiva da referenciação, a escolha lexical de determinado elemento referencial em detrimento de tantos outros possíveis existentes na língua pode revelar opiniões, intenções e atitudes do enunciador.

Com os referentes ativados, o surdo desenvolve no espaço discursivo o processo de recuperação desses elementos, visando a progressão narrativa. Assim como em Libras, em LSE a recuperação de ‘pera’ e ‘hombre’ sucede durante boa parte da narrativa em conjunto, por meio de classificadores, com padrões específicos do olhar, expressões faciais marcadas, ‘cambio de rol’ (o sinalizante deixa de ser o narrador e se identifica com a personagem). Em outras palavras, nessa recuperação, o enunciador ‘incorpora’ a personagem, atribuindo-lhe características físicas (homem trabalhador colhendo peras desde o alto de um peiral, trabalho duro: cl.m(5d>5):coger+guardar-peracl.m(Cc>5d): echar-pera) e psicológicas (concentração e ânimo durante o trabalho: cl.m(5d): examinar-pera cl.m(4d): frotar-pera). O significado dessa referência pode ser percebido como uma imagem mental, indicando ao destinatário uma significação mais completa (Bernardino, 2000). Esse processo de recuperação é classificado como deíctico-anafórico de complexas unidades manuais e não manuais.

Podemos observar na figura da tela do Elan alguns momentos desse processo de retomada. A primeira imagem mostra o homem colhendo as peras; a segunda, o homem examinando as peras; a terceira mostra o homem limpando as frutas.

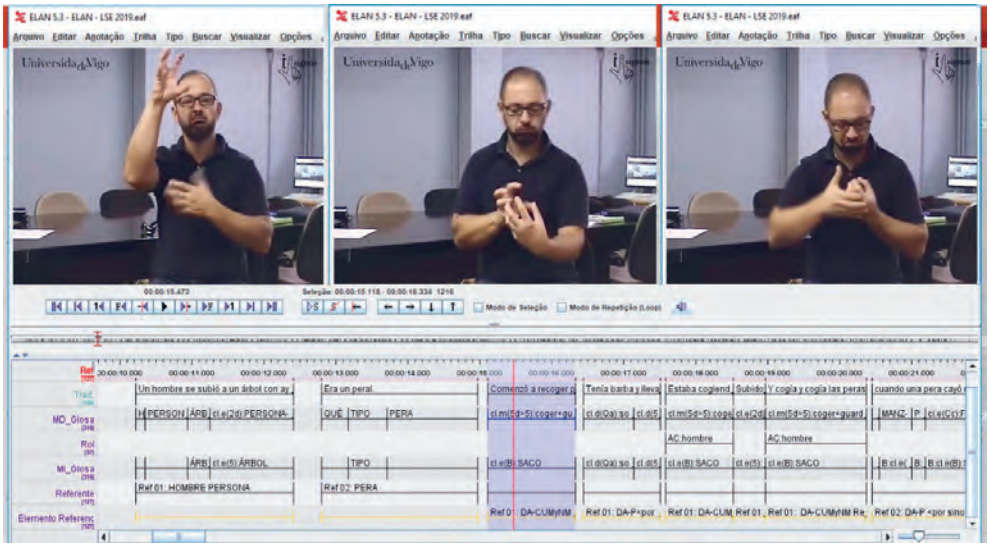

Figura 3: exemplo da tela doElancom o processo referencial analisado na tabela 3

Prosseguindo às análises, trazemos na tabela 4 um outro processo referencial em LSE. Nessa tabela citada temos uma primeira coluna composta do referente selecionado

para a análise – pera; uma segunda com o processo de recuperação do referente, conforme a anotação feita em glosa-Libras; e uma terceira com a classificação da recuperação.

Tabela 4 - Processo Referencial na história 'The Pear Film' narrada em LSE

Processo referencial em '*The Pear Film*': LSE		
Referente/Objeto do discurso	**Retomada**	**Classificação do processo de retomada**
pera	PERA2 EST@	DA-P <por sinonímia-pronominal>

Temos nessa tabela uma retomada do referente 'pera' por meio de um sinónimo: PERA2. Pela própria glosa-LSE já podemos perceber que não se trata do sinal de pera que foi utilizado na introdução do referente, ou seja, nesse processo de recuperação o surdo opta por utilizar um sinónimo para o referente em destaque, PERA2, conforme podemos verificar na figura a seguir. Geralmente, a seleção de um sinónimo no processo de recuperação de referente representa a intenção do sinalizante de ampliar o repertório lexical em torno do objeto do discurso em destaque, evidenciando uma opção estilística do enunciador (Koch, 2004). Dando sequência à análise, atrelado ao sinal PERA2, temos o apontamento manual - em configuração de mão em G (☝)- e visual para o espaço de sinalização em que o cesto de pera está marcado, anotado pelo pronome demonstrativo EST@. Todos esses fatores nos permitem, baseado nas teorias estudas, a classificar esse processo referencial como dêitico-anafórico padrão por sinonímia-pronominal. Vejamos a figura abaixo com o sinal de PERA2 usado no processo de retomada:

Figura 4: exemplo da tela do Elan com o processo referencial analisado na tabela 04

Síntese das análises realizadas

A partir das análises realizadas, foi possível observar, no corpus paralelo, como ocorrem os processos referenciais nas línguas em questão. A Introdução sempre ocorreu com o primeiro aparecimento dos referentes PERA e HOMEM, em Libras e em LSE.

A Recuperação foi marcada pela presença do dêitico-anafórico de classe 'padrão', realizado por meio de pontos manuais e visuais, que estabelecem posições marcadas no espaço (os 'loci'); Nas classes padrões tivemos algumas estratégias específicas em cada língua de sinais: por repetição, por reticências, por sinonímia, por hiperônimo, pronominal. O dêitico-anafórico padrão por sinonímia, por exemplo, foi verificado em LSE, quando o surdo utilizava o sinal PERA1 e, a seguir, outro sinal para o mesmo referente, PERA2, que é considerado sinônimo. Em Libras, diferente da LSE, tivemos o caso de recuperação do padrão dêitico-anafórico por hiperonímia.

Além disso, a Recuperação foi marcada, em ambas as línguas, pela presença constante da classe dêitico-anafórica de unidades manuais e não manuais complexas: por meio de padrões de olhar específicos, expressões faciais marcadas e classificador combinado com estrutura de mudança de papel, mostrando-se como uma forma consciente do sinalizante ilustrar o que diz, sendo então carregado de operações discursivas e cognitivas, por meio das quais os sinalizantes transferem sua concepção do mundo real para o mundo tridimensional do discurso sinalizado.

5. Considerais finais

Diante das análises realizadas, foi possível observar como sucede o processo referencial na Libras em contraste com a LSE. Especificamente, foi possível verificar os processos referenciais *Introdução* e *Retomada* nas línguas em questão. Podemos dizer que, apesar de cada língua fazer uso de alguma estratégia específica e pontual, no geral o processo referencial em ambas as línguas analisadas foi marcado por semelhanças. O processo referencial em Libras e em LSE está caracterizado pelo uso constante e simultâneo do dêitico e da anáfora. Os dêiticos-anafóricos podem considerar-se estratégias fundamentais para a condução da cadeia referencial em ambas línguas, por exemplo na construção do referente em pontos específicos no espaço de sinalização.

Quando a pessoa surda utiliza determinado processo referencial, ele não o faz aleatoriamente, ao contrário, há em sua escolha finalidades comunicativas, as quais podem ser reveladas a partir de conhecimentos culturalmente compartilhados pelos usuários das línguas de sinais, em um processo discursivo. Em outras palavras, utilizar um elemento referencial na construção de um texto - nesse caso narrativo -, implica sempre uma escolha lexical em detrimento de tantas outras possibilidades existentes na língua, e essa escolha pode revelar opiniões, intenções e atitudes do produtor do texto.

Nós, enquanto linguistas e professores, devemos incentivar nossos alunos a utilizar essas estratégias linguísticas, a valorizar as relações referenciais estabelecidas entre os sinais e a estabelecer um trabalho constante com recursos visuais que orientam os referentes no espaço de sinalização. Nesse sentindo, acreditamos que os resultados desse trabalho cooperam para fortalecer as investigações desenvolvidas na área dos estudos linguísticos da Libras e, também, da LSE, suscitando novas indagações e reflexões acerca dos processos referenciais nas línguas de sinais, de maneira a se pensar em investigações vindouras. Ademais, esperamos que o trabalho desenvolvido contribua para o ensino-aprendizagem do surdo, para os educadores e para os tradutores e intérpretes de línguas de sinais, bem como outros profissionais envolvidos com essa área.

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Mouth movements in the depiction of size and shape: Comparing two village sign languages in West Africa with different time depths

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Abstract

This study is about mouth movements in the expression of size and shape in two village sign languages. They are both located in West Africa, one in Adamorobe, Ghana, and the other in Bouakako, Côte d'Ivoire. These sign languages have no influence from a school context nor from another sign language. The first exists for several generations and has thirty signers. The second is still emerging and is used by seven deaf people. Participants were asked to produce stories about animal attacks, namely snakes, to motivate the use of size and shape in their own sign languages. We will seek to understand the type of mouth movements in the depiction of size and shape, by comparing both unrelated village sign languages.

Keywords: size and shape depiction, mouth actions, village sign language, sign language phonology.

1. Introduction

This text will focus on the role of mouth movements when in combination with the expression of size and shape of certain entities. The depiction of size and shape (S&S) of particular entities aims to describe its form. To do so, it relies on handshapes and/or body parts to specify its S&S features.This iconic description is often com-

bined with non-manual elements, especially mouth movements, to enhance visual characteristics of the entities. We will analyse the use of mouth movements with the depiction of S&S in two village sign languages. An older and more established one in the village of Adamorobe (AdaSL), Ghana, and a very young emerging sign language in the village of Bouakako (LaSiBo), Côte d'Ivoire, with very few signers.

We have observed that both languages in this study use facial expression with S&S depiction. However, there is little research on non-manuals in combination with such iconic depictions, and none regarding village sign languages. There is, though, an increasing number of studies on village sign languages, on facial expressions and on size and shape specifiers, separately. Because there are so many non-manual elements on the face, we decided to begin by looking at mouth movements.

This particular analysis is based on the task eliciting spontaneous narratives about animal attacks (see the methodology for further details). When describing the attacks, mainly from snakes, signers use the depiction of S&S recurrently in combination with facial expressions, mostly on the mouth.

To analyse such correlation,we are bound to ask 'How are mouth movements like in size and shape depiction?' and 'Are there differences in mouth movements in the two village sign languages?'. To answer these questions, we will analyse the form, meaning, and use of mouth movements. Before doing so, we will introduce the two sign languages, and discuss the relevant literature.

1.1 Background of AdaSL and LaSiBo

Geographically, the distance between the two villages, Adamorobe and Bouakako, is about 700 kilometres. The two villages are comparable in what regards the high incidence of hereditary deafness. Also, on both villages, the main activity of the deaf is farming. However, they are crucially different in terms of time-depth of the sign language and size of the deaf community. AdaSL is estimated to exist for 200 years and is currently used by about 30 deaf people (Nyst, 2007b), while LaSiBo is about 50 years old and is, at the time of this study, used by seven deaf people (Tano, 2016).

The village of Adamorobe is located in Ghana, about forty kilometres from the city capital, Accra (Figure 1a).The village of Bouakako is located in the southwest of Côte d'Ivoire (Figure 1b). It is one of the five villages in the municipality of Hiré, located about 250 kilometres from Abdijan, the economical capital.

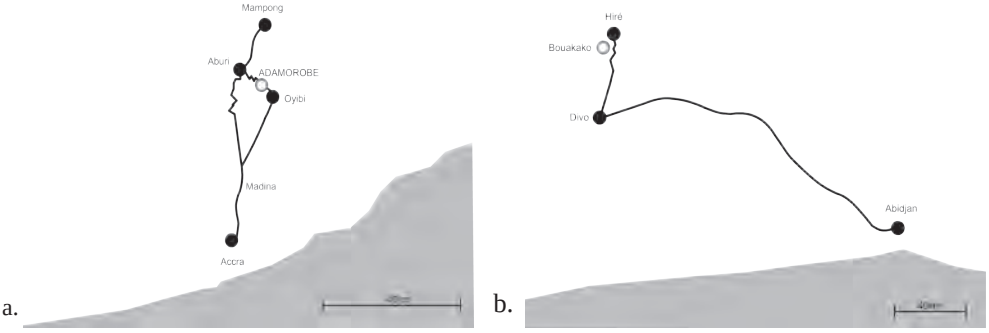

Figure 1. Locations of Adamorobe, in Ghana (a) and of Hiré, in Côte d'Ivoire (b).

The official language of Ghana is English. Akan is the language spoken by more than half of the population, especially in the southern part of the country. Akan has a group of dialects, known as Twi. In Adamorobe the most commonly spoken language is one of those dialects, the Akuapem Twi. In this article we will also talk about Ga, a south-eastern dialect, used in and around the capital Accra.

Deaf people in Ghana use Ghanaian SL (GSL). It is based on American Sign Language (ASL), introduced in 1957 by Andrew Foster, a deaf African-American missionary, who founded the first school for the deaf in the country.

The village of Adamorobe had thirty-three deaf inhabitants at the time of the fieldwork. Twenty-four deaf adults (sixteen women and seven men), aged from 20 to 72 years old, were filmed for this study. The older deaf people are mostly monolingual, using AdaSL, though they attend the weekly mass in GSL. The younger signers, who are schooled, are bilingual in both AdaSL and GSL.

There are several studies on AdaSL, especially by Nyst (e.g. 2007b, 2016a, 2016b, 2018) and Kusters (e.g. 2012, 2015, 2020). AdaSL has its corpus available online at The Language Archive (Nyst, 2012). The village of Adamorobe is used to receiving researchers from all over the world.

In Côte d'Ivoire the official language is French and the most commonly spoken by the population is Dyula, one of the Mande languages, used along the northwest and center of the country. In Bouakako the vernacular language is a dialect called Dida Mamini from the Dida, which belongs to the group of the Kru languages, used in the southwest.

As in Ghana, the national SL is also based in ASL. Andrew Foster founded here, as well, a first school for the deaf, in 1974. This ASL variant in Côte d'Ivoire (ASL-CI) is used by schooled deaf people. Alternatively, deaf people with no formal education use several local sign languages, which are referred to as Ivorian sign languages (*Langues des Signes de Côte d'Ivoire* – LSCI), being LaSiBo one of them (Tano 2016).

The Bouakako village is quite small when compared to Adamorobe and there were only seven deaf inhabitants at the time of the fieldtrip. From these, one had recently moved to Bouakako. Deafness is also believed to be hereditary here and it seems it is still in its first generation of deaf people, which makes LaSiBoto be about 50 years old (Tano, 2016).

Deaf people in Bouakako rarely had contact with other deaf people from outside the village or with the sign language of Côte d'Ivoire (l'ASL-CI). In 2011, the first deaf 'outsiders' visited the village, as research assistants (Tano, 2016). In this first contact there were some small influences such as sign names and the manual alphabet. The manual alphabet didn't make much sense to them, because they were all unschooled.

Having put our languages of study into context, we will next look at the grammatical aspect of analysis, concerning the depiction of S&S.

1.2 Mouth movements in the depiction of size and shape in sign languages

The depiction of size and shape is often expressed by classifiers, or depicting handshapes. Supalla (1986) proposes that, in ASL, nominal classifiers be independently

categorised as (1) size-and-shape specifiers (SaSSs), when the handshape represents the size and shape of an object; (2) semantic classifier, when parts of the hand represent aspects of the object; (3) body classifier, involving a mimetic representation by the whole body; (4) bodypart classifier, when the hand, or other bodypart, itself represents the object; and as (5) instrument classifier, when the hand manipulates an object.

On the first group of classifiers, related to SaSSs, there are two subtypes: (1.1) static SaSSs, when the handshape indicates the size and shape of an object or entity; and (1.2) tracing SaSSs, when the hand movement outlines the size and shape of the object. For the latter, Taub (2001) suggests that a SaSS handshape combined with a SaSS movement is a dynamic SaSS, as opposed to the static one.

Furthermore, signs, including the ones for the depiction of S&S, often involve mouth movements. Its distinction was first based on whether mouth patterns were influenced by speech or not, establishing two types: (1) *mouthings*, from spoken components or entire words; and (2) *mouth gestures*, unrelated to speech (Sutton-Spence & Boyes Braem, 2001).

In what concerns non-speech-like mouth gestures, different types can be identified.The *adverbial* type, which may also function as *adjectival* by indicating, for instance, if an object is very small or very large (Woll, 2008). A good exemple of this is the adverbial mouth gesture known as 'mm', corresponding to relaxed pursed lips, where the bottom lip may protrude. It can mean, for instance, 'relaxed' in BSL (Sutton-Spence & Woll, 1999, cited by Lewin & Schembri, 2011).These may have an independent meaning associated with different signs, thus with some morphological freedom (Crasborn et al., 2008 and Sandler, 2009). The mouth seems to be used iconically with classifier constructions, including SaSS, handling and entity handshapes. In these cases, mouth gestures are defined according to their iconic use, adding meaning to the size and shape of objects (Sandler, 2009, and Lu & Goldin-Meadow, 2018). Such modifications of the mouth provide information about the shape of objects, acting as adjectival morphemes. They can be expressed by iconic mouth movements conveying particular meanings in the depiction of S&S of objects, like [sucked-cheeks] for 'thin' or [puffed-cheeks] for 'wide', 'big', 'large' or 'long' things in American Sign Language (Lu & Goldin-Meadow, 2018).

Besides looking at the origin of mouth movements, it is also possible to classify them according to the combinatorial restrictions established with manual signs (Bickford & Fraychineaud, 2006). As part of combinations with signs, mouth movements function as morphemes that are more or less dependent of specific signs. According to this perspective there are mouth morphemes that are either *inherently part of manual signs*, within fixed combinations, or associated with *independent meanings*, i.e. bound mouth morphemes that are able to recombine with different signs, but do not occur alone. Most mouthings and lexical mouth components fall in the first category, while the majority of mouth gestures correspond to the second. They are not, however, mutually exclusive. In fact, adjectival mouth gestures may be combined with specific lexical items and mouthings may carry independent meanings that may recombine with different signs, as observed by Mohr (2014). Thus, the major distinction resides on whether mouth movements have (or do not have) the ability to be combined with different signs while carrying a particular meaning.

In what mouth movements in the depiction of S&S is concerned, there have been a few studies involving both village SLs of Adamarobe and Bouakako, as described in the following section.

1.3 Mouth movements in the depiction of size and shape in AdaSL and LaSiBo

LaSiBo was first studied by Tano (2016), but not specifically on S&S depiction. It was later on, in the context of crosslinguistic studies, that this subject was first described in LaSiBo (Nyst, 2018, and Tano & Nyst, 2018). The depiction of S&S was, in turn, further explored in AdaSL (Nyst, 2007a, 2007b, 2012, 2016b, 2018, and Tano & Nyst, 2018).

Information about S&S can be conveyed in lexical signs, without necessarily depicting the actual S&S of an entity in the real world. It is rather used to refer to a concept in a more general manner. For instance, in AdaSL, the lexical sign for BOTTLE (S + lower arm handshape) represents the concept of a bottle, regardless of the actualsize and shape of a specific bottle.

Moreover, in face of her AdaSL data, showing a different system for S&S depiction (Nyst, 2007b, 2016a, 2018), she proposes new categories: (1) lexical signs of relative size; (2) simultaneous combinations of a size and shape sign and mouthing; (3) measure signs of absolute size with a growth line; (4) measure stick signs of absolute size; (5) tracing SaSS and depiction types; and (6) internal modification of existing signs. We describe them further below.

Lexical signs of relative size (category 1) can be expressed by lexical signs like BIG (Figure 2a), SMALL (Figure 3b), TALL (Figure 2c) and SHORT (Figure 2d).These lexical signs are combined with specific mouth movements. For instance, BIG (Figure 2a) is combined with the mouthing ‘agbo’ (meaning ‘big’ in Gã) and SMALL (Figure 2b) is articulated together with the mouthing ‘keketeke’ (meaning ‘small’ in Akan).

Figure 2: Lexical signs for BIG (a), SMALL (b), TALL (c) and SHORT (d), in AdaSL (from Nyst, 2007a, [a and b] and Nyst, 2007b, p. 135 [c and d]).

Such mouth movements deriving from speech, or mouthings, are commonly combined with a lexical base sign. In addition, Nyst (2007b) describes that they are morphemic, i.e. they may recombine with other signs, namely with productive S&S manual depictions. For example, in AdaSL, a manual sign showing the size of a big banana may consist of a body-based S&S sign delimiting the hand at the wrist, combined with the mouthing 'agbo'. Another example is a sign referring to the size of a small bottle using the same delimited hand with the mouthing [spread lips, closed teeth+ttt], meaning 'small'. This pair of examples suggests that the mouthings canonically associated with lexical items of size carry an independent meaning that can be simultaneously combined with other manual signs, in order to add information about their size. This size information conveyed by the mouthings is of a different type than that conveyed by the manual sign. Whereas the manual sign represents an actual, objective size (that can be measured), the mouthings convey a subjective or relative size, i.e. a subjective assessment of whether the size depicted by the manual sign is relatively small or big for the referent. A good illustration of this is the sign for 'sugar cube'. Here the lexical sign SWEET (Figure 3a) is followed by a S&S depiction with a delimited thumb tip, combined with the mouthing 'agbo' (Figure 3b), meaning 'big', probably because sugar usually consists of much smaller particles. The same delimited thumb tip sign can also be combined with the mouthing for 'small', for example when referring to a bell pepper of the size of a thumb, which is relatively small. Nyst (2007a; b) describes that mouthings associated with colour signs are able to combine with other manual signs in a similar way.

a.  b. 

Figure 3: Lexical sign for SWEET (a) followed by the S&S depiction of a 'sugar cube' on the tip of the finger combined with the mouthing [abo] meaning 'big' (b), in AdaSL (from Nyst, 2007b, p. 151).

Besides the mouthings for 'big' and 'small', others appear to derive from local spoken languages, like 'tenten' (meaning 'tall' in Akan) and 'tia' (meaning 'short' in Akan). It is likely that they were borrowed from hearing gestures using those mouthings, during the emergence of AdaSL. Table 1, as defined in Nyst (2007a and 2007b) describes these fixed mouthings.

Table 1: Mouthings associated with AdaSL signs of relative size

Sign	**Mouthing**	**Source word**	
BIG	[puffed cheeks+release] ≈ [abo]	*agbo*	'big' in Gã
SMALL	[spread lips, closed teeth+ttt]	*ketekete*	'small' / 'little' in Akan
TALL	[spread lips, closed teeth]	*tenten*	'tall' / 'long' in Akan
SHORT	[spread lips, closed teeth]	*tia*	'short' / 'minor' in Akan

Absolute size can be measured by the use of a growth line (category 3). This line is vertical for height and is used in many SLs, like in the sign for CHILD with a B handshape in a lower position, or the signs for SHORT and TALL, indicating where the height usually stands. In AdaSL, this type of sign is used for animals, not for people. For such a growth line, the lower arm represents a body and the S handshape a head at a relevant position on the vertical line of growth. Absolute size can also be depicted by the use of measuring stick signs. In AdaSL, signers use their body frequently to depict S&S, either by having their arm represent a stick, where the extent of an entity is marked by the other hand from the level of the shoulder (Figure 4a), through the arm (Figure 4b), until the fingers (and sometimes also the width), or by having the thumb indicate small sizes within the length of the index finger.

a.  b. 

Figure 4: Signs measuring absolute size using the body as a stick on the shoulder (a) and on the arm (b), in AdaSL (from Nyst 2007b, p. 138).

In AdaSL, entity depictions are very frequent, while tracing is not. In what concerns entity depictions (category 5), the S handshape (fist), for example, is common to represent small round objects, like TOMATO (Figure 5), EGG and STONE.

Figure 5: Entity depiction of TOMATO, in AdaSL (from Nyst, 2007b, p. 145).

Because in AdaSL there were few tracing signs (also in category 5) at the time of this study (Nyst, 2007b), they were organized in the following subcategories: tracing the outline of a bound volume in neutral space, as in KIOSK (Figure 6a); tracing the outline of a bound volume in relation to the body, as in PREGNANT (Figure 6b); representing an entity while tracing its extent, as in STICK and ELEPHANT (Figure 6c); tracing a one-dimensional line on the body, as in the sign for POLICE, which indicates the stripes on the uniform trousers.

a.  b.  c. 

Figure 6: Tracing in space the outline of a KIOSK (a), tracing in relation to the body the outline of PREGNANT (b) and by representing the extent of a STICK(c), in AdaSL (from Nyst 2007b, p. 82 [a] and 129 [c] and Nyst 2007a [b]).

The internal modification of signs (category 6), can be exemplified by the sign for TURKEY, where the hand 'pulls' the nose to the front, as describing a long beak, or for a sort of wild cat, where both hands 'pull' the ears up. At the time of this research, Nyst had not found any signs of the sort in other SLs.

Although LaSiBo has not been much described in what concerns size and shape, it is known to make little use of space-based distance for size depictions in lexical signs (c.f. Figure 6 for AdaSL). In a comparative study of the use of space-based size depiction in lexical signs in six SLs, Nyst (2018) finds that this is similar to AdaSL and unlike other European SLs (Nyst, 2018). In fact, LaSiBo seems to prefer body-part constructions for size and shape (Tano & Nyst, 2018) in the same way AdaSL does. These body-part constructions involve, for instance, one hand delimiting size on the other arm (e.g. Figure 4 for AdaSL), the use of the delimited tip of the index finger to mean 'narrowly, only just' (also used by hearing Dida speakers as a gesture), or the delimited wrist joint with fist handshape (e.g. TOMATO). In LaSiBo, signers delimit part of the arm at the level of the elbow or the shoulder in the same way as AdaSL. On the forearm, signers can also refer to a bigger kind of BANANA or STONE, or to a BOTTLE (just like in AdaSL). With the whole arm there is the example of the size and shape of a snake, from the shoulder until the fist. In addition, it was observed size and shape using the leg to depict the width of particular entities, which was not seen in AdaSL (Tano & Nyst, 2018).

The current study will focus on the manual depictions of size and shape that are produced together with mouth movements. This points towards the already described mouthings for AdaSL (in Table 1) and possibly to adjectival mouth gestures that may (or may not) have independent meanings when combined with the depicting sign.

After this overview of the studies about mouth movements in general and in combination with the depiction of S&S, in particular, we will go back to our research questions: how do an emerging and an established village sign language compare when it comes to mouth movements? More particularly, in AdaSL and LaSiBo, what are mouth movements like in combination with S&S depictions? Are they systematically associated with particular signs? Or have they developed independent meanings? Having observed the existence of these major types of mouth movements produced together with the depiction of S&S, we will then be able to compare both SLs and see if and how any differences can be attributed to the difference in language age.

2. Methodology

2.1 Data collection

Before the fieldwork, the stimuli set was entirely prepared at Leiden University, in the Netherlands. For the purpose of our research, we decided to do five different tasks and one survey, but for this particular analysis only one of the five tasks was taken into account.This task aimed to elicit a spontaneous narrative about an animal attack, which could have been experienced by the deaf person him/herself, or he/she have seen happening to someone else or he/she were told about.

We decided not to use any stimulus material, to ensure compatibility with different backgrounds and to give the participants more freedom in their discourses, as if it were in the context of a normal conversation. It was explained to the subjects that we wanted them to tell us about an animal attack that they had seen or experienced. We suggested animal attacks involving snakes, as an example, because we were aware of their frequency and for easily inducing the depiction of S&S.

For this study, 24 deaf people from Adamorobe and six deaf people from Bouakako were asked to tell a personal experience concerning animal attacks. Each one of them ended up telling a story. In total there were 34 videos (28 in AdaSL and 6 in LaSiBo). In Adamorobe, four of the deaf participants made two videos each, because they asked to add an extra story on snake attacks and one of them wanted to tell also a story about a lion attack. In both languages, narratives have an average duration of two minutes.

The stories in AdaSL were mostly about snakes, but, other than the one about the lion attack, there was another one about a bee sting. In Bouakako, everyone narrated about snakes. Most participants explained that small snakes are killed with the cutlass that they use for working on the farm. However, when they see big snakes, they usually run away. Coming across snakes often happens when they are working on the farm.

2.2 Annotation

The protocol for glossing is based on Johnston's annotation guidelines for Auslan corpus (2014) and on Crasborn et al.'s manual for the Global Sign bank (2018). The protocol for S&S annotation developed specifically for our research was based on Nyst (2016b).

A central, three-way distinction in the annotation protocol for S&S consists of (1) the role of the hand in the depiction of 'shape'; (2) the two points delimiting 'size' between the hand(s) and/or the space; and (3) the relevance of iconic 'movement'.

Our template for Elan annotations includes different tier groups, from which we will highlight here only the ones concerning the depiction of *size and shape* and *mouth* movements. Besides the animal attack stories, videos from other tasks were annotated as well, so new codes were required and regularly reviewed with the team throughout the project.

2.2.1 Coding size and shape depiction

We develop a fine-grained, multi-layered coding system for size and shape depiction, that builds on the model for S&S depiction proposed in Nyst (2016). Our goal was that each element found to be capable of depicting size and/or shape in sign languages can be coded separately. The coding system is componential in that one sign often has multiple S&S depicting elements. It is hence not a system for categorizing whole signs, but rather for categorizing components. We considered the features to depict S&S, as shown in Tables 2 and 3, respectively. Each code is illustrated with corresponding signs. Also, the categories shaded in grey were not found in the data, thus, will not be mentioned in the results.

In shape depictions, in Table 2, a distinction is made for four different roles of the hand. The hand can represent the object, i.e. the entity, as a whole (a), or it can act as it is holding, or handling, the object (b). The hand movement can also draw in space the shape of an entity, by tracing its outline (c). When it is not none of the previous, as in non-handling, then it can mimic the action itself (d), like running or swimming (this last one was not observed in our data).

Table 2. Annotation guidelines for shape depiction

Shape: Role of the hand	a. entity	b. handling	c. tracing	d. non-handling
				
	e.g.TOOTHBRUSH	e.g.BRUSH-TEETH	e.g.SQUARE	e.g.RUN

The depiction types for size delimit the size of the entity, according to the distance between two endpoints. A two-way distinction is made between space-based and body-based size depiction. A space-based depiction concerns a distance indicated in space, which can be realized in four ways; by two inherent points within the hand (a. hand internal in space); by the hand(s) in relation to the body (b. hand and body or the finger); between both hands in the signing space (c. two hands); or between the hand and the ground (d. hand and ground), as shownin Table 3 (the last one, in grey shade, was not observed in our data).

Table 3. Annotation guidelines for space-based size depiction

Size: Delimited by two points	**Space-based size depiction**			
	a. hand internal	b. hand and body	c. two hands	d. hand and ground
				
	e.g.PIPE-WIDTH	e.g.SWELLING	e.g.BOX-WIDTH	e.g.ANIMAL-HEIGHT

The distance can also be body-based. Body-based size depiction comes in four different types (Table 4), i.e. one finger delimiting size on another finger from the same hand (a. hand internal); one hand marking size on the other arm, hand or finger (b. hand in arm/hand/finger); both hands depicting size in relation to the body (c. two hands in the body); or by referring to the inherent points in the body itself, such as the extreme end of a finger, or a joint (d. inherent points).The last two types were not observed in our data.

Table 4. Annotation guidelines for body-based size depiction

Size: Delimited by two points	**Body-based size depiction**			
	a. hand internal	b. hand on arm/hand/ finger	c. two hands	d. inherent points
				
	e.g.NUT	e.g.TOMATO	e.g.CROWN	e.g.BEAK

As for the contribution of movement to the depiction of S&S, we distinguish between different types of movements, as illustrated in Table 5. Movement to stress the shape delimitation (a); extending movement to trace the shape in space (b); shaking movement to focus on a particular shape (c); movement showing a change in size (d) and real life movements (e). The last two were not observed in our data,

Table 5. Annotation guidelines for movement in size and shape depiction

Iconic **movement**	a. movement for shape	b.extent in shape	c. movement for focus	d. change in size	e. real life movement
					
	e.g.TRUNK-WIDTH	e.g.STICK	e.g.MANGO-SIZE	e.g.REDUCE	e.g.DRINK

In this way, shape depiction was considered according to its representation by the hand. Size was analysed on the basis of being delimited by the hand(s) in relation to the body and/or the space. Last, movement served mainly to illustrate more clearly S&S depiction.

2.2.2 Coding mouth movements

Mouthings identified for AdaSL in Table 1 (Nyst, 2007a and 2007b), for the sake of economy, will be annotated as:

[abo], also glossed as [puffed cheeks+release] by Nyst, usually combined with the lexical sign BIG; and

[spread lips], also glossed as [spread lips, closed teeth+ttt] by Nyst, usually combined with the lexical signs SMALL, TALL and SHORT.

For mouths gestures, we added the following annotations:

[pursed lips] (e.g. Baker-Schenk & Cokely, 1980, cited in Bickford & Fraychineaud, 2006),

[puffed cheeks] (e.g. Lu & Goldin-Meadow, 2018),

[oo] (e.g. Bickford & Fraychineaud, 2006), and

[mm] (e.g. Sutton-Spence & Woll, 1999, cited by Lewin & Schembri, 2011).

To understand the type of combination established with manual signs, mouth movements will be classified as (1) inherent part of sign or as (2) independent of sign (Bickford & Fraychineaud, 2006).

Besides the lexical sign for 'small' identified by Nyst, we have found, in our AdaSL data, what seems to be a new lexical sign also to mean 'small'. Thus, we will gloss them differently: the body-based hand internal one (as documented by Nyst, 2007) will be glossed as SMALL-1 and the new body-based with two hands sign will be glossed as SMALL-2.

With S&S depiction coded in this way, we looked, in the data, to describe it in the two village sign languages, focusing on the interconnections between S&S and mouth activity.

3. Results

All AdaSL signers, except one, included S&S depiction spontaneously in their stories. To the one signer that had not used it in his narrative, it was asked, in the end, what was the size and shape of the snake and he ended up depicting it afterwards.

In AdaSL, a total of 1143 signs were calculated in all narratives and 61 signs for the depiction of S&S were identified. Nevertheless, six of the 24 deaf participants did not produce any depiction in size or shape. Of the 61 AdaSL S&S signs, 47 are related to the snakes' depiction, whether large or small. Furthermore, two S&S signs are found involving a bee attack, three S&S describing a hole and four depicting snakebite swellings. And of the 61 signs, seven produced no mouth movement.

For LaSiBo, all signers had to be asked about the size and shape of the snake because none used a depiction of S&S in their stories. In the end, we were able to collect enough information about the size and shape of the animals, in both languages, as intended. All six deaf LaSiBo signers produced S&S signs. In a total of 462 signs produced in the stories, 32 were categorized as S&S depiction. Of the 32 signs, 25 had no mouth movements.

It is also important to note that AdaSL has one lexical sign for SNAKE (with the index finger forward), regardless of its size. In LaSiBo two signs of the sort were found, one for 'small snake' and one for 'python'. The generic sign for SNAKE consists of the palm of the hand and the arm making the movement of the snake slithering (Figure 7a). In the sign for PYTHON, the arm represents the snake, while the dominant hand indicates spots on what is supposed to be the snakes' skin (Figure 7b).

Figure 7: Lexical signs for SNAKE (a),in AdaSL, and for PYTHON (b), in LaSiBo.

For this study, we considered only S&S depictions original to AdaSL and LaSiBo. Apart from these, we found a few lexical S&S signs borrowed from GSL in the AdaSL data. These were the GSL signs for LARGE (two occurrences), based on the manual letter 'L', and for SHORT (one occurrence).

3.1. Mouth movements in the depiction of size and shape in AdaSL

In the AdaSL data, 61 instances of mouth movements with S&S signs were found. These were categorized into five different mouth patterns: [abo] (combined with BIG), [spread lips] (associated with both SMALL-1 and LONG), [pursed lips] (combined with SMALL-2), [oo] (produced together with the depiction of 'circular shape') and [puffed cheeks] (co-occurring with the depiction of 'swelling').

The most frequent type of mouth movement was the [puffed cheeks+release] or [abo], associated with the sign BIG (Figure 8), found in 21 cases. This mouth pattern was not observed in combination with any other manual sign within this data.

Figure 8: Example of [abo] produced with the lexical sign BIG, in AdaSL.

Twelve instances of a mouth component consisting of [spread lips] were encountered.This mouth component was combined both with the sign for SMALL-1 in six cases, and with the sign for LONG in another six cases.

The mouth movement of [spread lips] was also found in the context of a small size. It is found only twice, once with the lexical sign SMALL-1 (Figure 9a) and once with a body-based size sign delimiting the tip of the index finger (Figure 9b). This confirms the morphological status of the mouth movement to indicate 'small size'. The mouth pattern that is produced together with the sign for SMALL-1 (Figure 9a) seems to have some morphological freedom to combine with other signs with related meaning. This is the case of the mouth movement combined with the body-based depiction of a 'very small size', delimiting the tip of the index finger, in two out of the six of such occurrences (Figure 9b), the remaining four do not produce any mouth movements. The difference between both manual signs is that the lexical sign for SMALL-1 delimits an invisibly small part of the finger nails, whereas the depiction of 'very small size', in this case, marks the size on the index finger.

Figure 9: Examples of [spread lips] with squint eyes and furrowed eyebrows produced with the lexical sign SMALL-1 (a) and the body-based depiction of 'very small size' (b), in AdaSL.

The [spread lips] mouth movement was also found in the context of length in six signs depicting a long snake, as in Figure 10 below.The difference between the mouth movement [spread lips] combined with the signs for SMALL-1 and LONG is that the first one is produced with squint eyes and furrowed eyebrows (Figures 10a and 10b). The mouth movement [spread lips], combined with the sign for LONG, has, in contrast, the teeth more exposed and eyebrows mostly raised (see Figures 10a, 10b and 10c).

Figure 10: Examples of [spread lips] with raised eyebrows produced with the space-based depiction of LONG-SNAKE with two hands (a, b and c), in AdaSL.

Nyst (2007) describes the combination of this mouth movement with the lexical sign for TALL, as well. However, this lexical sign was not observed in our data.

The depiction of LONG-SNAKE always has the index fingers representing the snake. The movement extends the length of the snake by increasing the distance between both hands.

All AdaSL signs for 'long snake', thus, involve an entity handshape with tracing movement. This is done either by moving both fingers apart from each other simultaneously (Figure 10a and10b) or by moving just one of them away from the other (Figure 10c).

The depiction of LONG-SNAKE, in AdaSL, is combined also with TONGUE-OUT, with only one occurrence in the data. We considered this as an iconic mouth gesture because the signer seems to be mirroring with the tongue the great length of the snake, but also embodying the snake. Since this was a unique occurrence and spread along the sentence, we do not know how recurrent this form might be.

In addition to the mouth patterns deriving from mouthings, other mouth movements were found that have not been studied before in AdaSL. These were [pursed lips], [oo] and [puffed cheeks].

All the seven occurrences of the space-based depiction of 'small size', involving two hands with a smaller distance between them, henceforth glossed as SMALL-2, are produced together with [pursed lips] (Figures 11a and 11b). Also, one occurrence of the hand internal delimitation of the tip of the thumb is alternatively combined with the mouth movement [pursedlips] (Figure 11c). This variation of the body-based depiction delimiting the tip of the thumb of 'very small size' receives again a bound-mouth morpheme, but this time from a newly identified lexical sign, SMALL-2.

Figure 11: Examples of [pursed lips] produced with the space-based lexical sign SMALL-2 with different distances between the two hands (a and b) and with the body-based depiction of 'very small size' (c), in AdaSL.

When describing a circular shape, whatever the size, signers of Adamorobe produce the mouth gesture [oo] on six occurrences. Two are body-based depiction signs produced with the hands marking a circumference of a body part (Figures 12a and 12b).The remaining four signs involve tracing depictions of outlined circular shapes. They indicate with the index finger the shape of a snake wrapped up on the ground (Figure 12d) or the hole where the snake was in the ground or the cave (Figure 12c). These depiction signs make use of 'movement for shape' to mark the width of a circumference of a body part or by tracing the circular shape of a static entity in space.

Figure 12: Examples of [oo] produced with the body-based depiction (a and b) and the tracing depiction (c and d) of 'circular shape', in AdaSL.

Finally, five mouth gestures with [puffed cheeks] are produced together with the sign for SWELLING. The signs articulated with the hands in relation to the body refer to the depiction of the volume of a swelling. All signs were produced with both hands, always in roundish '5' or 'B' handshapes, in relation to the leg, except for one articulated on the face. The swelling depicted on the leg (Figure 13a) resulted from snake bites and the one on the face (Figure 13b) from a bee sting.

Figure 13: Examples of [puffed-cheeks] produced with the space-based depiction of SWELLING with the hands in relation to the leg (a) and to the face (b), in AdaSL.

3.2. S&S depiction in LaSiBo with and without mouth movements

In LaSiBo, only two mouth gestures were identified: [puffed cheeks] and [mm]. The five occurrences of [puffed cheeks], instead of associated to a 'swelling', as observed in AdaSL, were rather produced in combination with the depiction of 'big size' (Figure 14a). For both the depiction of 'big size' (Figure 14b) and of 'swelling' (Figure 14c) with two hands, the mouth gesture [mm] was used with one occurrence each.

Figure 14: Examples of [puffed-cheeks] (a) and [mm] produced with the space-based depiction of 'big size' with two hands (b) and with the sign for swelling on the leg (c), in LaSiBo.

In general, the distribution of S&S depiction in AdaSL and LaSiBo is very similar in what concerns space-based depiction of 'big size' with both hands and of the volume of a swelling in relation to the body. However, even if produced with a similar movement and delimited in space also with both hands, the length of a snake mobilizes different handshapes in AdaSL and LaSiBo. In AdaSL, all seven signs depicting a long snake use an entity handshape, while the Bouakako signer uses a handling handshape in all four signs he produces.

Depiction of ‘small size’ in LaSiBo seems to rely exclusively on the tip of the finger and none of them are combined with mouth actions. The four signs in this category are articulated with the tip of the finger. Two of these are hand internal, i.e. within the hand itself, using one finger to mark size on another finger. This delimitation is marked by the thumb on the index finger (Figure 15a) and by using one hand to delimit size on the finger of the other hand (Figure 15b).

Figure 15: Examples of the body-based depiction of ‘very small size’, as hand internal with the tip of the thumb (a)and with one hand on the other index (b), with neutral mouth, in LaSiBo.

All six signs depicting a ‘circular shape’ in LaSiBo are body-based (two with a digit, three on the arm and one on the leg). The width of very slim snakes is depicted using the tip of the pinky finger (Figure 16a). Larger snakes are depicted with the arm (Figure 16b) or the leg (Figure 16c). The S&S of these bigger snakes relies on the inherent delimitation given by a wider body part to represent its real size and shape. Again, there are no mouth gestures combined with the depiction of circular shape in LaSiBo.

Figure 16: Examples of body-based depiction of VERY-SLIM-SNAKE with one hand on the other pinky (a), and of LARGE-SNAKE with one hand on the other arm (b) and on the leg (c), in LaSiBo.

Summarizing the findings regarding mouth movements, we see that they occur with the depiction of ‘big’ and ‘small size’ and ‘circular shape’, in AdaSL, whereas, in LaSiBo, it is hardly used. In fact, we find them only in the depiction of ‘big size’. A major distinction coming out of this analysis is that AdaSL has lexical signs for both BIG and SMALL-1, as well as the newly identified lexical sign for SMALL-2, combined with fixed mouth components. The two lexical signs SMALL-1 and SMALL-2 have their mouth components behaving as bound mouth morphemes when recombined with body-based depictions of ‘very small size’. Also, AdaSL seems to have a mouth

movement inherently associated with the space-based depiction of LONG-SNAKE. Last, independent mouth gestures appear to consistently pattern as adjectival morphemes in AdaSL, as PUFFED-CHEEKS produced together with the depiction of SWELLING and [OO] combined with the depiction of 'circular shape'. In LaSiBo, mouth movements are quite scarce and five out of the six occurrences are produced by the same signer, which does not allow us to draw any reliable conclusions.

To summarise the overall results in relation to the manual depiction of S&S, both SLs use more space-based than body-based size depiction for 'big'. What is more, the depiction of the volume of swelling using the distance between the hand and the leg was produced in the same way. Both SLs use the tip of the finger to depict a 'very small size', i.e. body-based size depiction. Body parts are also mobilized by signers of the two SLs to depict a 'circular shape'. However, AdaSL gives preference to the tip of the fingers to depict small circumferences, whereas LaSiBo expresses wider circumferences on the arm and leg. An interesting difference is found between the languages in the use of space-based depiction for smaller entities and for circular shapes. Thus, for smaller entities, signers of LaSiBo exclusively use body-based size depiction, but signers of AdaSL use both space- and body-based size depiction. For larger, circular circumferences, AdaSL uses space-based depiction combined with either a tracing handshape (an index) or an entity handshape (a fist with a curved arm). Again, LaSiBo only uses body-based size depiction for circular shapes.

4. Discussion

The two languages differ in time depth and community size, being AdaSL much older than LaSiBo, and having also more signers than the latter. In spite of these major differences, the two communities are mainly constituted by farmers who have experienced themselves, or have heard about, attacks by snakes. Keeping in mind that there are more deaf people in Adamorobe than in Bouakako, the frequency of manual S&S depiction in these snake stories is very similar, with 6% in LaSiBo and 5% in AdaSL.

However, there are very different numbers of mouth components. AdaSL was found to have a much higher percentage of S&S depiction combined with mouth movements than LaSiBo. LaSiBo has a strikingly high percentage of S&S signs with a neutral mouth as compared to AdaSL.

In AdaSL, mouth movements are mostly produced together with lexical signs and body-based S&S signs. A third of them are associated with the lexical signs for BIG and SMALL-1. These lexically associated mouth movements may derive from mouthings from the local spoken languages, as suggested by Nyst (2007a and 2007b). Taking the example of the lexical S&S sign for BIG, it is very plausible that the words 'agbo', meaning 'big' in Gã, and 'ketekete', meaning 'small' in Akan, were borrowed at first as mouthings and were progressively incorporated into the sign language as lexical mouth actions (Sutton-Spence & Day, 2001). This can be argued by the loss of [ttt] with [spread lips and closed teeth] in the mouth movement associated with the lexical sign for SMALL-1. In addition, Nyst (2007a and 2007b) has demonstrated the morphological freedom of the lexical mouth components combined with BIG and SMALL-1 in AdaSL,

like in 'big banana' or 'small bottle'. In our study we have also observed lexical mouth components with independent meanings, i.e. able to recombine with productive S&S signs, namely with body-based depictions on the tip of the finger. Besides these two mouth components that have probably derived from former mouthings, we observed in the AdaSL data a new fixed mouth component, [pursed lips], inherently associated with the newly identified lexical sign SMALL-2.The mouth components associated with both lexical signs to mean 'small' are also seemingly able to recombine with the hand internal depicting sign with the tip of the finger of 'very small size', as shown in Table 6. In contrast, there are no lexical signs of S&S, in LaSibo.

In the data, no signs for TALL were found. Instead, the corresponding mouth movement, [spread lips], as described by Nyst, appears associated to a related meaning, the depiction of the length of a snake. It is then possible that we are actually observing a mouthing, or a derivation of such, associated to a semantically related sign, the sign for LONG.

Table 6: Mouth movements as inherent part of S&S signs, in AdaSL

	Mouth as inherent part of sign	S&S signs (AdaSL) (number of mouth movements combined with S&S signs)	
	**[abo]** Nyst (2007a and 2007b) [Puffed cheeks+release][abo] 'big' in Gã	BIG	lexical (N=21) total=21
 a. b.	**[spread lips]** (mouth morpheme able to recombine) Nyst (2007a and 2007b) [spread lips, closed teeth+ttt] *ketekete* 'small' / 'little' in Akan	SMALL-1 'very small size'	lexical (N=3) body-based depiction(N=3) total=6
	**[spread lips]** Nyst (2007a and 2007b) [spread lips, closed teeth] *tenten* 'tall' / 'long' in Akan	LONG	space-based depiction (N=6) total=6
 a. b.	**[pursed-lips]** (new mouth morpheme able to recombine)	SMALL-2 'very small size'	(maybe) lexical (N=7) body-based depiction (N=1) total=8

Besides the new mouth component in the closed set of lexical signs for the depiction of S&S, that is [pursed lips], two new mouth gestures were identified in AdaSL, independently combined with depiction signs of S&S. Signers of Adamarobe produce independent mouth morphemes, like [puffed-cheeks] for SWELLING and [oo] for 'circular shape', to add meaning to the manual S&S depictions, as described for other SLs (e.g. Crasborn et al., 2008, Lu & Goldin-Meadow, 2018).

Table 7: Adjectival mouth gestures combined with S&S depiction of 'big size' and 'circular shape', in AdaSL, and of 'big size', in LaSiBo

	Mouth independent of sign	S&S sign (AdaSL) (number of mouth movements combined with S&S signs)	
	**[puffed-cheeks]** *new fixed mouth component for AdaSL	SWELLING	body-based depiction (N=5) Total=5
 a.  b.	**[oo]**	'circular shape'	body-based depiction (N=2) space-based depiction (tracing) (N=4) Total=6

The summarising results presented here show that AdaSL has consistently developed mouth movements as inherent part of particular signs (Table 6). Independent mouth gestures (Table 7) are also more consistent in providing information about S&S in AdaSL rather than LaSiBo, which rarely produces them. In fact, only one mouth gesture, [puffed cheeks], was found repeatedly with the same manual depiction for 'big size', although produced by the same signer. These differences may reside on the fact that AdaSL is much older than LaSiBo.

4. Conclusion

To conclude, we are now able to answer the question posed initially 'How are mouth movements like in S&S depiction?' Even though the proportion of manual S&S depiction is similar in both SLs, results show that mouth components, in AdaSL, are quite numerous and most seem to have independent meanings.This contrasts with the marginal occurrences in LaSiBo.

Overall, and to answer the second question about the differences between both SLs, we observe that AdaSL signers produce mouth patterns as fixed combinations

with signs for S&S depiction, namely for BIG, SMALL-1and also for LONG, deriving from mouthings. According to the data, a new fixed mouth component was identified combined with the space-based lexical sign SMALL-2. All of these mouth movements, in AdaSL, seem to be able to recombine with other depiction S&S signs with related meanings. In contrast, Ivorian signers from Bouakako do not produce any of the sort.

In what concerns manual depiction of S&S, LaSiBo shows an overwhelming tendency to produce body-based signs, doing exclusively in this manner, in the depiction for 'small size' and 'circular shape', signs that, for the most, do not have mouth movements.

To follow up on this work, it would be interesting to analyse the facial expressions, specifically concerning mouth, in our other tasks that were performed during fieldwork and that were not so emotional as the spontaneous narratives on animal attacks.

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Um olhar diacrónico à variação fonológica e lexical da língua gestual portuguesa no conto *Capuchinho Vermelho*

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Abstract

Phonological and lexical diachronic variation are phenomena common to all natural languages. The present study aims to analyze the phenomena of variation in the Portuguese Sign Language in the story-tell "Capuchinho Vermelho", through an elicitation task to two deaf signers recorded in 1992 and in 2019. Using the phonetic transcription system for sign languages, HamNoSys, 383 tokens of 20 key-items were transcribed. The main results point to a slight increase in the occurrence of the non-dominant hand with a symmetrical role in the sign coarticulation and an increase in the use of phonological facial expressions. It was observed that the handshape variation is present in all phonological variation cases. Of the 20 key-items, only 3 suffered lexical variation.

Keywords: Diachronic variation; Sign Language; Phonology; Lexicology; Portuguese Sign Language.

Resumo

A variação diacrónica fonológica e a lexical são fenómenos comuns a todas as línguas naturais. O presente estudo tem como objetivo analisar os fenómenos de variação na Língua Gestual Portuguesa no conto "Capuchinho Vermelho", através de uma tarefa de elicitação a dois gestuantes Surdos gravados em 1992 e em 2019. Com recurso ao sistema de transcrição fonética para as línguas gestuais, HamNoSys, procedeu-se à transcrição de 383 *tokens* de 20 itens-chave. Os principais resultados apontam para um ligeiro aumento do uso da mão não dominante com papel simétrico na articulação do gesto e um aumento do uso de expressões faciais fonológicas. Observou-se que a configuração é o parâmetro alterado em todas os itens que sofreram variação fonológica. Dos 20 itens-chave, apenas 3 sofreram variação lexical.

Palavras-Chave: Variação Diacrónica; Língua Gestual; Fonologia; Léxico; Língua Gestual Portuguesa.

1. Introdução

As Línguas Gestuais (LG) são sistemas linguísticos de modalidade visuo-espacial, que, tal como as línguas orais, se desenvolvem espontânea e continuamente em comunidade. Este desenvolvimento, com o passar do tempo, resulta em alterações de elementos e estruturas linguísticas.

Tendo em consideração que se trata de uma língua de produção motora e receção visual, a realização de estudos linguísticos sobre as LG está dependente da existência do registo em vídeo. Com o recente desenvolvimento tecnológico, a investigação à variação diacrónica das LG torna-se uma realidade, quer para o registo das LG quer para a transcrição dos dados linguísticos.

A Língua Gestual Portuguesa (LGP), reconhecida na Constituição da República Portuguesa, em 1997, como língua de comunicação da comunidade surda portuguesa e como língua na qual se pode desenvolver a aprendizagem das crianças surdas portuguesas, carece de estudos linguísticos para uma descrição fundamentada. Até à data, existe um estudo sobre a variação diacrónica da LGP ao nível da fonologia, especificamente, na variedade açoriana da LGP (Gonçalves et al., 2017; Gonçalves, 2016; Moita et al., 2018).

Para compreender os fenómenos de variação de uma língua, importa conhecer a história desta. A emergência e o desenvolvimento da LGP acompanham a história da educação de surdos em Portugal, que passou por diversos períodos de mudança ao longo da história. Estes períodos de mudança poder-se-ão caracterizar com base nos três tipos metodológicos de educação adotados, em Portugal, pelos educadores/ professores de surdos (Carvalho, 2007).O primeiro período, com início no ano de 1823, corresponderá à metodologia de um ensino gestual com suporte na escrita, aplicado pelo professor Per Aron Borg, quando constituiu o primeiro instituto de "surdos--mudos" em Portugal. Entre 1906 a 1991, vigorou o segundo período, o chamado período do oralismo, que se baseava exclusivamente numa metodologia oralista, à se-

melhança do que acontecia um pouco por toda a Europa na mesma época, ocorrendo, até a dada altura, a proibição da utilização da LGP em contexto escolar. Por último, o terceiro período, com início em 1992, corresponde a uma metodologia de ensino bilingue, que permanece até aos dias de hoje na educação de surdos em Portugal.

2. Variação diacrónica fonológica das LG

As LG partilham entre si, na formação dos gestos, as mesmas características universais comuns a todas as línguas, unidades mínimas sem significado (Stokoe, 1960). Nas LG, a articulação destas unidades é realizada através de dois articuladores manuais (mão dominante (M1) e mão não dominante (M2)) simultâneos e/ou sequenciais, que por sua vez poderão coocorrer com os articuladores não manuais: face, tronco e pernas. A M2 pode ter um papel simétrico, em que adquire uma configuração e movimento simétrico à da M1, ou um papel de apoio, em que serve de localização à articulação da M1 (Brentari, 1990; 1998). As unidades mínimas sem significado caracterizam-se em cinco parâmetros fonológicos: configuração, localização, movimento, expressão facial e orientação da palma da mão (Battison, 1978; Brentari, 1998; Sandler & Lillo-Martin, 2006; e.o.).

A configuração apresenta-se como a forma que os articuladores manuais assumem na produção do gesto, através de traços distintivos, como a seleção de dedos ou a posição de dedos (Battison, 1978; Brentari, 1998; Sandler & Lillo-Martin, 2006). O traço distintivo seleção de dedos corresponde à identificação dos dedos que se encontram ativos (selecionados) e não ativos (estáticos) na configuração. O traço distintivo posição dos dedos corresponde à disposição e combinação dos dedos na composição da configuração através da sua abertura ou fechamento (Brentari, 2011; Mandel, 1981). Cada LG apresenta um número limitado de configurações, sendo que nem todas são produzidas pela M2 (Battison, 1978; Moita, Carmo & Mineiro, 2013).

A localização apresenta-se como o ponto de articulação onde o gesto pode ser articulado. A localização poderá ocorrer no corpo (na M2 ou em outras partes do corpo) do gestuante ou no espaço em frente a si (espaço gestual). Este parâmetro pode ser, ainda, representado por dois pontos de articulação, ou seja, por duas localizações (L1 e L2) que marcam o início e o fim da articulação do movimento do gesto (Johnson & Liddell, 2011; Liddell & Johnson, 1989).

O movimento destaca-se pela sua diversidade de ocorrência (como circular, retilíneo, de aproximar, etc.). Este parâmetro pode ser dividido em movimento interno (movimento da configuração e movimento da orientação da mão) e em movimento trajetório (de uma L1 para uma L2) (Brentari, 1998; Johnson & Liddell, 2011; Liddell & Johnson, 1989). O parâmetro movimento tem sido considerado, em alguns modelos teóricos, como o núcleo da sílaba (Brentari, 1998; Fenlon *et al*., 2017).

O parâmetro fonológico orientação da palma da mão corresponde à direção da palma da mão durante a produção de um gesto (Battison, 1978).

Por último, o parâmetro fonológico expressão não manual, que se define como um elemento não manual na estrutura das línguas gestuais, corresponde à expressão da face, ao movimento e direção do olhar e ao movimento do corpo enquanto parte da articulação do gesto (Crasborn, 2006).

Além dos parâmetros fonológicos que formam os gestos, existem, nas LG, elementos que representam iconicamente um único referente (nominal) ou uma ação com o seu argumento interno (verbal) (Aikhenvald, 2003; H. Carmo, 2016), ou seja, representam a forma dos seus referentes podendo substituir, descrever, especificar e qualificar pessoas, animais e objetos e/ou incorporar ações e locais (Meir & Sandler, 2008; Quadros & Karnopp, 2004), os denominados classificadores. Estes elementos são estruturas de fácil construção e produção que denotam algum grau de complexidade ao nível da estrutura semântico-sintática da gramática das LG (Carmo, 2016). Dada a complexidade linguística a todos os níveis, os classificadores poderão ser considerados como elementos linguísticos de natureza fonomorfossintática.

Nos estudos de variação diacrónica à fonologia das LG, observam-se padrões de variação transversais a todas elas (Kegl & Coppola, 1999; Moita et al., 2018; Senghas, 1994; e.o.). Por exemplo, na emergência de uma língua gestual, identifica-se o recurso a várias partes do corpo na articulação de gestos, mas, com o decorrer do tempo (Aikhenvald, 2003; H. Carmo, 2016) e do desenvolvimento da LG em comunidade, o número de articuladores e de localizações torna-se limitado e restrito (Moita et al., 2018; Sandler, 2018; Sandler & Lillo-Martin, 2006). Esta variabilidade de articuladores detetada, na emergência de uma LG, espelhará a natureza icónica desta modalidade linguística, permitindo relacionar a forma ao significado (Perniss et al., 2010).

Alguns estudos indicam que a iconicidade será a motivação de processos fonológicos e morfológicos nas línguas gestuais (Crasborn et al., 2000), sendo bastante frequente nas LG emergentes (Meir et al., 2010). Na observação à variação diacrónica, os estudos discutem se a natureza icónica dos gestos diminui à medida que a LG se desenvolve (Frishberg, 1975; Meir *et al.,* 2012; Taub, 2001). Por exemplo, Frishberg (1975), numa comparação entre os gestos da língua gestual francesa do início do século 19, os gestos da língua gestual americana (ASL) da mesma época e ainda os gestos da ASL dos anos 70, identificou padrões de mudança de gestos icónicos para gestos arbitrários e um padrão simétrico no movimento dos articuladores manuais. Também Battison (1974) e Meir & Sandler (2008) encontraram, para a ASL e para a língua gestual israelita, um maior número de gestos simétricos ao longo do tempo do que gestos assimétricos, inclusive nos casos em que a sua natureza icónica desaparecia. Contrariamente a estes, Brentari (1990) e Brentari & Goldsmith (1993), ainda no contexto do uso de articuladores manuais, verificaram que, ao longo do tempo, a M2 assume um papel fraco na articulação do gesto, atuando predominantemente como mão de apoio à M1.

No contexto de processos fonológicos de gestos compostos lexicalizados, observa-se que a redução e a assimilação são os processos mais frequentes na estabilização deste tipo de gestos, nomeadamente na ASL (Mineiro et al., 2017; Sandler, 2018; Sandler & Lillo-Martin, 2006). Num estudo comparativo entre a Al-Sayyid, ISL e ASL (Israel, 2011; Israel & Sandler, 2011) observa-se que as LG emergentes apresentam variação fonológica na seleção de dedos e de local de articulação, além de variação lexical para o mesmo referente. Por sua vez, as LG estabilizadas, como a ASL, apresentam variação ao nível da fonética, como abertura e fechamento dos dedos.

A estabilização fonético-fonológica depende essencialmente da convencionalização dos itens lexicais. Este fenómeno resulta, por sua vez, do uso frequente de um mesmo gesto dentro da comunidade gestuante. Poder-se-á considerar que a estrutura

fonológica emerge e desenvolve-se não somente dependente de fatores culturais e sociais (Mineiro et al., 2017), mas também associada à dimensão da comunidade surda (Meir et al., 2012).

A observação da variação diacrónica fonológica em itens lexicais foi observada num estudo em 3 diferentes gerações de gestuantes de Libras (Schmitt, 2013). Neste estudo, verificou-se que, além de existir variação fonológica na produção de itens lexicais entre as 3 gerações de gestuantes, os gestos que eram articulados no corpo pela 1ª geração são, atualmente, articulados no espaço neutro em frente ao gestuante e que os gestos que eram produzidos apenas com a M1 são, atualmente, articulados com ambos os articuladores manuais em simultâneo. Neste mesmo estudo, verificou-se, ainda, que a 1.ª geração apresentou uma maior variação lexical, demonstrando que alguns itens lexicais da língua gestual ainda não estavam convencionalizados no período de aquisição por esta geração.

3. Fonologia e variação da LGP

A inexistência de estudos sobre a variação diacrónica ao nível da fonologia da LGP está relacionada com o facto de não existir uma descrição dos parâmetros fonológicos desta língua (configuração, movimento, localização, orientação da palma da mão e expressão não manual) resultante da ausência de registos de dados linguísticos que possibilitem a análise às suas características fonológicas de forma consistente.

A primeira listagem de configurações da LGP identifica a existência de 13 configurações para esta língua, que, posteriormente, na 7ª edição, aponta para 18 configurações (Ferreira, 1991). Na obra *Gestuário* de Amaral e colegas (1994), os autores acrescentaram mais 12 configurações à lista de Ferreira (1991). Em 2010, no *Dicionário de Língua Gestual Portuguesa* de Baltazar (2010) foram apresentadas 21 configurações. Ainda no mesmo ano, no âmbito de uma investigação sobre a aquisição da LGP, Carmo, (2010) regista um conjunto de 76 configurações adquiridas por uma criança gestuante de LGP. Posteriormente, no âmbito de uma investigação para a modelização de um avatar para a LGP, foram identificadas 83 configurações (Moita et al., 2011), embora algumas destas possam ser consideradas alofones (Gonçalves, 2016). Quanto aos traços distintivos, neste mesmo estudo, foi encontrada uma acentuada variação relativa à seleção e posição de dedos.

O parâmetro fonológico localização na LGP foi descrito por Amaral e colegas (1994) como estando presente em três áreas primárias na articulação do gesto: partes do corpo; proximidades do corpo e articulação da M1.

O movimento na LGP foi, inicialmente, descrito por Carmo (2010), com base no tipo e no sentido de movimento trajetório, e no modo do movimento trajetório ou de configuração, de forma semelhante ao que acontece noutras LG (Sandler & Lillo-Martin, 2006). Atualmente, encontra-se em curso a descrição do parâmetro do movimento na LGP (Silva, 2021) com base nos seus traços distintivos: *traços de configuração, traços de trajetória, traços de orientação e traços de abertura*; com base no modelo prosódico para as LG (Brentari, 1998; Fenlon et al., 2017).

Em contexto de aquisição da LGP, foram identificadas 23 expressões faciais adquiridas por uma criança gestuante de LGP (P. Carmo, 2010). Contudo, atualmente, no âmbito do projeto Corpus e Avatar para LGP (Refª PTDC/LLT-LIN/29887/2017), estão listadas um total 32 expressões faciais, estando ainda por aprofundar o seu papel fonológico.

No único estudo sobre a variação diacrónica da LGP (Gonçalves et al., 2016; Moita et al., 2018), foram analisados 333 gestos da variedade dos Açores, através da elicitação dos gestos registados em Silva & Funk (1999). Nesta comparação dos itens lexicais produzidos em 1999 e em 2016, observou-se que a configuração foi o parâmetro fonológico que sofreu maior variação bem como os seus traços distintivos associados, seleção de dedos e posição de dedos.

Com a construção de um *corpus* diacrónico da LGP, desenvolveu-se o presente estudo, com o objetivo de se observar a variação fonológica e diacrónica desta língua em dois períodos distintos. Neste contexto, pretende-se identificar padrões de variação na LGP tendo em consideração os articuladores manuais e não manuais, os classificadores, os cinco parâmetros fonológicos e a variação lexical. Para este efeito, foi analisado o conto "O capuchinho vermelho" produzido em 1992 e em 2019 pelos mesmos dois gestuantes.

4. Metodologia

4.1 Amostra

Os dados linguísticos analisados foram produzidos por 2 participantes gestuantes surdos.

O gestuante A é do sexo feminino, filho de pais surdos e com aquisição de LGP desde o nascimento, com pais e irmão surdos. O gestuante B é do sexo masculino, filho de pais ouvintes com um irmão surdo e início de aquisição de LGP aos 6 anos. Ambos os gestuantes são da região de Lisboa.

No ano 1992, os gestuantes A e B tinham 17 e 20 anos respetivamente. Volvidos 27 anos após as primeiras gravações, em 2019, os gestuantes tinham 44 e 45 anos respetivamente (Tabela 1).

Tabela 1: Características dos participantes nas duas épocas de recolha de dados

		Participantes	
		A	B
Origem		Lisboa	Lisboa
Sexo		F	M
Idade de aquisição		Nascimento	6 anos
Familiares Surdos		Pais e Irmão Surdos	Irmão Surdo
Ano de Gravação / Idade	1992	17 anos	28 anos
	2019	44 anos	55 anos

4.2 Recolha e seleção de dados

O registo das produções em LGP do conto "Capuchinho Vermelho" de 1992, analisadas neste estudo, foram realizadas e constituíram parte de um pequeno *corpus* elicitado para a primeira descrição da LGP (Amaral *et al.*, 1994). Os registos do conto "Capuchinho vermelho" gravados em 2019 foram realizados no âmbito da construção do primeiro *corpus* de referência para a LGP (Refª PTDC/LLT-LIN/29887/2017), permitindo a realização do presente estudo fonológico.

Todas as produções elicitadas foram antecipadamente preparadas por cada gestuante, individualmente, tendo como base imagens do conto "O capuchinho vermelho". As gravações das produções que decorreram no ano 1992 foram da responsabilidade de dois investigadores ouvintes sem qualquer tipo de relação com os gestuantes. As gravações que decorreram em 2019 foram da responsabilidade de um investigador ouvinte com quem os gestuantes estabelecem uma relação próxima. Todas as gravações foram realizadas sem limite de tempo e videogravadas numa sala sem distratores visuais.

Para a seleção de dados, foram considerados como critérios de seleção os itens-chave do conto e os itens lexicais com maior número de ocorrências entre todas as produções recolhidas. No total foram analisados 20 itens-chave que corresponderam a 383 *tokens* (Tabela 2).

Tabela 2: Frequência de ocorrência dos itens-chave analisados por participante e por ano de recolha (1992 e 2019)

Gestos	1992		2019		Nº Ocorrências
	A	B	A	B	
LOBO	7	15	14	23	59
AVÓ	6	10	14	18	48
ANDAR	4	5	9	16	34
CASA	3	9	6	12	30
VERMELHO	0	7	5	18	30
CAPUCHINHO	0	7	5	17	29
COMER	2	4	6	11	23
MENINA	6	3	4	5	18
CORRER	3	2	3	8	16
MÃE	1	2	5	7	15
VER	2	4	3	4	13
CESTA	1	5	4	2	12
ABRIR A PORTA	1	4	4	2	11
DIZER	0	2	3	4	9
HOMEM	2	1	1	4	8
BATER À PORTA	3	2	1	1	7
FLOR	2	2	2	2	8
ÁRVORE	1	1	0	4	6
OLHOS	1	1	2	1	5
OUVIR	1	0	1	0	2
Total	46	86	92	159	383

4.3 Tratamento de dados

Para a análise dos dados, todas as ocorrências foram transcritas no *software* EUDICO Linguistic Annotator (ELAN) utilizando o sistema fonético para as LG, HamNoSys (Hanke, 2004), por ser compatível com o *software*. O HamNoSys é um sistema de anotação/ transcrição para as LG baseado no modelo prosódico (Eccarius & Brentari, 2007) e no modelo Movement-Hold (Liddell & Johnson, 1989), permitindo a identificação dos elementos fonéticos do gesto.

Para descrever o uso de articuladores manuais e não manuais, e classificadores, foram identificados em cada ocorrência gestual: M1; M2; Articuladores Não Manuais (ANM) (expressão não manual e outros articuladores); e classificadores.

Para a anotação dos parâmetros fonológicos configuração, orientação da palma da mão, localização e movimento foi utilizado o HamNoSys. Para a anotação de expressões faciais, foi utilizada, como base, uma lista de expressões faciais [6]. Contudo, ao longo do processo de transcrição, foram adicionadas mais 7 expressões faciais. Para codificação destas expressões na trilha de anotação do ELAN, foi criado um código correspondente.

4.4 Análise de Dados

Depois de transcritos todos os gestos, procedeu-se à análise comparativa fonético-fonológica e lexical entre produções realizadas para cada item-chave.

Na análise à ocorrência dos articuladores manuais e não manuais, e classificadores, observou-se:

(a) a ocorrência de gestos articulados só com a M1 e coarticulados com a M1 e a M2;

(b) o papel da M2 em coarticulação com a M1 no gesto (papel simétrico, papel de apoio (Brentari, 1998);

(c) a ocorrência de gestos coarticulados com ANM;

(d) a ocorrência de gestos coarticulados com a Expressão Facial (EF) e com Outros Articuladores Não Manuais (outros ANM);

(e) a ocorrência de gestos classificadores.

Para a análise à variação diacrónica de cada item-chave, considerou-se dois contextos tipológicos associados ao número de parâmetros alterados, distinguindo-se *variação diacrónica fonológica* de *variação diacrónica lexical*:

(a) variação diacrónica fonológica: o gesto sofre alteração fonológica quando um ou dois dos seus parâmetros fonológicos são alterados.

(b) variação diacrónica lexical: quando o gesto sofre alteração em mais do que dois dos seus parâmetros fonológicos, sendo, por isso, considerado um gesto diferente.

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[6] As expressões faciais da lista utilizada foram identificadas através do projeto Corpus e Avatar para LGP (Refª PTDC/LLT-LIN/29887/2017) que totalizaram 32 expressões faciais.

5. Resultados

5.1 Resultados relativos à ocorrência dos articuladores manuais, não manuais e classificadores

Na observação de gestos com articulação isolada da M1 e com coarticulação da M1 com a M2, verifica-se uma redução na percentagem de ocorrência de gestos articulados somente com a M1 (81% em 1992 para 73% em 2019) e um aumento da percentagem de ocorrências de gestos coarticulados com a M1 e a M2 (19% em 1992 para 27% em 2019) (Figura 1).

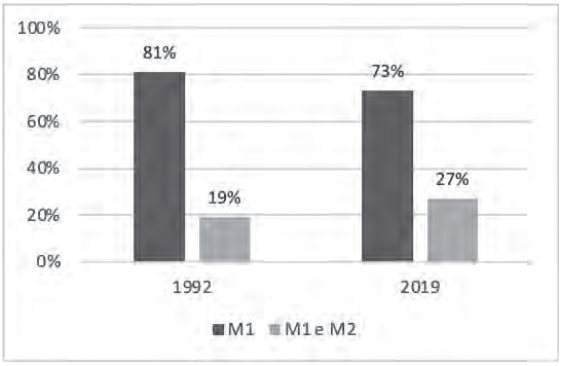


Figura 1: Percentagem de gestos com a articulação isolada da M1 e com coarticulação da M1 com a M2 por ano de recolha (1992 e 2019).

Na observação do papel da M2 em coarticulação com a M1, que pode ter um papel de apoio ou um papel simétrico em relação à M1 (Brentari, 1998), verifica-se uma diminuição na percentagem de ocorrência da M2 como papel de apoio (23% em 1992 e 13% em 2019) e um aumento de percentagem de ocorrência da M2 no papel simétrico (77% em 1992 e 87% em 2019) (Figura 2).

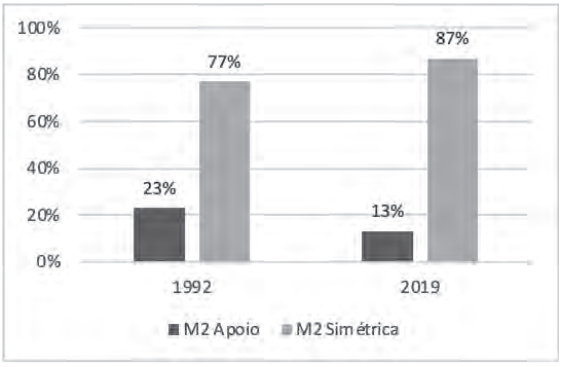


Figura 2: Percentagem de gestos com coarticulação da M1 com a M2 tendo em consideração o papel da M2 por ano de recolha (1992 e 2019).

Na observação da ocorrência de ANM, foi observado um aumento da percentagem de ocorrência destes articuladores na produção de gestos (30% em 1992 para 48% em 2019) (Figura 3).

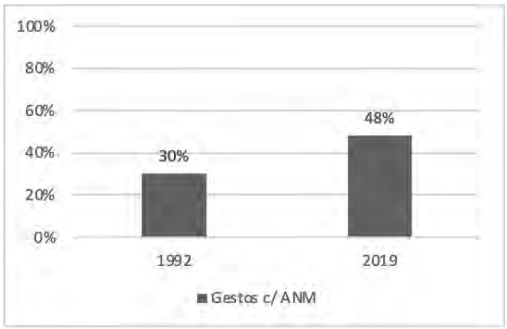


Figura 3: Percentagem de gestos com articuladores não manuais (ANM) por ano de recolha (1992 e 2019).

Na identificação do tipo de ANM a ocorrer na produção de gestos, verificou-se um aumento da percentagem de ocorrência de expressões faciais (7% em 1992 para 16% em 2019) e um aumento da percentagem de ocorrência de outros articuladores não manuais (cabeça, tronco e pernas) (31% em 1992 para 51% em 2019) (Figura 4).

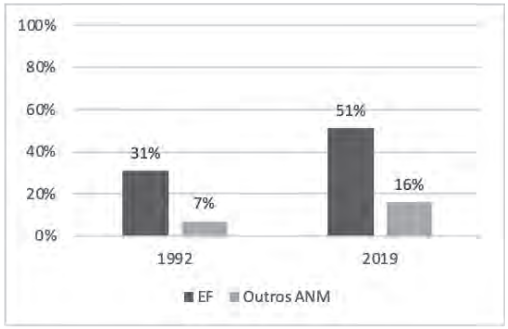


Figura 4: Percentagem de gestos com expressão facial (EF) e com outros articuladores não manuais (outros ANM) por ano de recolha (1992 e 2019).

Na observação de ocorrência de classificadores, verifica-se uma ligeira diminuição na percentagem de ocorrências em relação aos dois períodos analisados (20% em 1992 e 15% em 2019) (Figura 5).

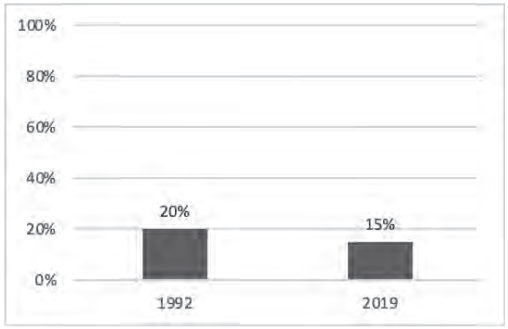


Figura 5: Percentagem de ocorrência de classificadores por ano de recolha (1992 e 2019).

Na observação em que em itens-chave ocorre a produção de classificadores, identifica-se que estes apenas são produzidos em 9 itens-chave. Os itens-chave: CESTA; ABRIR A PORTA e BATER À PORTA ocorreram, nos dois períodos, somente com classificadores. Em 2019, os itens-chave OLHOS e OUVIR foram também produzidos unicamente por classificadores, sendo revelante observar que o item-chave OUVIR, em 1992, tinha sido produzido somente com recurso a gesto. O item-chave FLOR que, em 1922, ocorreu através de gestos ou de classificador, em 2019 verificou-se apenas em gesto. Os restantes 11 itens-chave ocorreram sempre, nos dois períodos, através de gestos (Tabela 3).

Tabela 3 Percentagem de ocorrência dos Itens-chaves produzidos através de gestos e/ ou classificadores por ano de recolha (1992 a 2019)

Gestos	**1992**		**2019**	
	Gestos	CL	Gestos	CL
LOBO	100%	**0%**	100%	**0%**
AVÓ	100%	**0%**	100%	**0%**
ANDAR	56%	44%	44%	56%
CASA	83%	17%	89%	11%
VERMELHO	100%	**0%**	100%	**0%**
CAPUCHINHO	100%	**0%**	100%	**0%**
COMER	100%	**0%**	100%	**0%**
MENINA	100%	**0%**	100%	**0%**
CORRER	80%	20%	27%	73%
MÃE	100%	**0%**	100%	**0%**
VER	100%	**0%**	100%	**0%**
CESTA	**0%**	100%	**0%**	100%
ABRIR A PORTA	**0%**	100%	**0%**	100%
DIZER	100%	**0%**	100%	**0%**
HOMEM	100%	**0%**	100%	**0%**
BATER À PORTA	**0%**	100%	**0%**	100%
FLOR	75%	25%	100%	**0%**
ÁRVORE	100%	**0%**	100%	**0%**
OLHOS	50%	50%	**0%**	100%
OUVIR	100%	**0%**	**0%**	100%

5.2 Resultados relativos à variação diacrónica fonológica e variação diacrónica lexical

Na observação de itens-chave do conto, verificou-se a produção de itens-chave que sofreram variação diacrónica fonológica, de itens-chave que sofreram variação diacrónica lexical e de itens-chave que não apresentaram qualquer variação. Dos 16 itens-chave articulados em gestos, e não em classificadores, identificaram-se 4 itens-chave com variação diacrónica fonológica, 3 itens-chave com variação diacrónica lexical e 9 itens-chave sem variação diacrónica.

Tabela 4 Itens-chave com variação diacrónica fonológica, itens-chave com variação diacrónica lexical e itens-chave sem variação diacrónica

Variação Diacrónica Fonológica	Variação Diacrónica Lexical	Sem Variação Diacrónica
COMER	AVÓ	LOBO
MÃE	MENINA	VERMELHO
VER	FLOR	CAPUCHINHO
DIZER		HOMEM
		CASA
		ÁRVORE
		ANDAR
		OLHOS
		CORRER

Para os itens-chave LOBO; VERMELHO; CAPUCHINHO; HOMEM e ÁRVORE não foram verificadas alterações diacrónicas.

Na verificação de quais os gestos que sofreram variação diacrónica fonológica, foram observadas alterações no parâmetro configuração nos itens-chave COMER; MÃE; VER e DIZER. Ainda para os itens-chave VER e DIZER foram verificadas alterações no parâmetro orientação (Tabela 5).

Tabela 5: Itens-chave que sofreram variação diacrónica fonológica

Itens-chave	Variação Diacrónica Fonológica
COMER	Configuração (Abertura e Fechamento)
MÃE	Configuração Final (Traço distintivo seleção de dedos)
VER	Configuração e Orientação
DIZER	Configuração e Orientação

Na observação de itens-chave que sofreram variação diacrónica lexical (gestos com mais do que dois parâmetros alterados), observámos os itens-chave AVÓ; MENINA e FLOR (Figuras 6, 7 e 8).

1992	2019
43%	0%
	
56%	100%
	

Figura 6: Item lexical AVÓ com produção em 1992 e 2019.

1992	2019
100%	25%
	
	75%
	

Figura 7: Item lexical FLOR com produção em 1992 e 2019

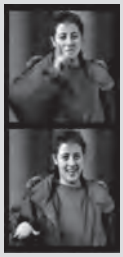
1992	2019
11%	0%
	
89%	100%
	

Figura 8: Item lexical MENINA com produção em 1992 e 2019.

6. Discussão

O presente estudo tem como objetivo contribuir para a descrição da variação diacrónica fonológica e lexical da LGP. Através dos resultados encontrados, é possível observar o desenvolvimento desta língua ao longo do tempo. Os resultados obtidos serão discutidos em conformidade com a estrutura em que foram apresentados.

Na observação da articulação manual dos gestos, verifica-se que ocorre um aumento de gestos com coarticulação da M1 e com a M2, tal como verificado no estudo entre gerações de gestuantes de Libras (Schmitt, 2013). Importa, contudo, referir que este aumento de produção de gestos com ambos os articuladores manuais difere do que é encontrado em outras LG (Battison, 1978; Brentari, 1998; Frishberg, 1975), onde há a predominância da eliminação da M2 na articulação dos gestos.

Na análise do papel da M2 na coarticulação do gesto, verifica-se, atualmente, uma maior percentagem da produção de M2 com papel simétrico relativamente às produções de 1992. O aumento e a predominância da M2 com papel simétrico é, também, identificado em outras LG (Meir & Sandler, 2008; Schmitt, 2013). Este papel simétrico poderá revelar uma homogeneização fonológica dos articuladores manuais, atribuindo à M2 um papel mais fraco. Neste contexto, o possível caráter fraco associado ao papel simétrico da M2 terá em consideração o facto de, quando a

M2 simétrica é eliminada, o gesto continuar a ser semanticamente interpretável, ao contrário de quando a M2 tem papel de apoio.

Quanto à articulação de ANM, observou-se um aumento de gestos com recurso a ANM em 2019, relativamente a 1992. Para uma discriminação de quais os ANM presentes na coarticulação dos gestos, identificou-se que tanto as expressões faciais como os outros ANM (cabeça, tronco e pernas) são mais frequentes atualmente. O aumento de uso de expressões faciais fonológicas na articulação do gesto revela a importância deste parâmetro fonológico nas LG e poderá ser um fenómeno resultante de estabilização de uma LG, em específico, da LGP.

O aumento de ocorrência de outros ANM, que não a expressão facial, na LGP contraria os padrões de variação fonológica das LG (Mineiro *et al.*, 2017; e.o.), em que se verifica a restrição no uso diversificado de ANM no desenvolvimento da língua. Contudo, importa ter em consideração que os gestos analisados no presente estudo são produzidos em contexto de discurso infantil, que é caracterizado por ser prosódica e iconicamente mais enfático. Para esta análise linguística, não foram analisados os contextos em que ocorreu a produção de ANM. Tratando-se da produção de um conto infantil, os ANM exercem uma forte influência neste tipo de discurso, cuja entoação é produzida através de ANM com a função de expressar emoções como a alegria, emotividade, surpresa, interrogação, entre outros. Neste sentido, poder-se-á assumir que o uso recorrente de ANM poderá estar relacionado ao contexto discursivo dos dados linguísticos.

Na observação ao uso de classificadores, identifica-se uma diminuição no uso destes relativamente a 1992. O uso de classificadores em contexto de um conto infantil é expectável, uma vez que os classificadores são elementos icónicos que representam a forma ou o tamanho do seu referente, facilitando a compreensão por parte das crianças. Contudo, é possível observar que os dados linguísticos analisados em 2019 revelam uma uniformização no uso destes elementos, verificando-se que alguns itens-chave apenas ocorreram por via de classificadores (CESTA, ABRIR A PORTA, BATER À PORTA, OLHOS e OUVIR). Importa observar o item-chave OUVIR, que em 1992 somente é articulado em gesto e que em 2019 é somente articulado em classificador.

Na identificação dos itens-chave com variação diacrónica fonológica ou lexical, verificou-se que, dos 16 itens-chave, 9 não sofreram variação tanto na sua articulação (fonológica) como no seu item lexical (LOBO, VERMELHO, CAPUCHINHO, HOMEM, OLHOS, CASA, ANDAR, CORRER e ÁRVORE).

Na identificação dos itens-chave com variação diacrónica fonológica, observou-se que quatro itens-chave sofreram alterações em um ou dois parâmetros fonológicos (COMER, MÃE, VER e DIZER), em específico, na configuração de mão e na orientação da palma da mão. Observou-se que a configuração da mão foi o parâmetro que alterou em todos estes quatro itens-chave, tal como verificado no estudo diacrónico da LGP variedade dos Açores (Gonçalves, 2016; Gonçalves et al., 2016; Moita et al., 2018).

Na identificação dos itens-chave com variação diacrónica lexical, observou-se que três itens-chave sofreram alteração lexical (AVÓ, FLOR e MENINA). Observou-se que houve uma redução na variação lexical nos gestos AVÓ e MENINA, apresentando-se, atualmente, com apenas um item-lexical correspondente. No caso do gesto FLOR, este apresenta-se com variação de dois itens-lexicais correspondentes, sendo que um

parece ser predominante. A variação do gesto FLOR poderá espelhar o período de transição que este atravessa, uma vez que o item-lexical novo é o mais predominante e o item-lexical menos frequente corresponde ao item-lexical registado em 1992 com incorporação lexical do gesto recente.

7. Considerações Finais

O presente estudo teve como objetivo analisar a variação diacrónica fonológica e lexical de 20 itens-chave do conto infantil "O capuchinho Vermelho", registados em 1992 e em 2019 pelos mesmos gestuantes. Esta recolha foi realizada com base numa tarefa de elicitação através da visualização de imagens.

Na observação ao uso de articuladores manuais, verificou-se que a M1 é o articulador predominante na articulação dos gestos da LGP, tal como observado em outras LG. Identificou-se, ainda, que a M2 surge com maior frequência nos dados contemporâneos (de 2019) como coarticulador apresentando com predominância um papel simétrico. Este aumento de coarticulação da M2 com papel simétrico poderá espelhar a homogeneização articulatória de ambos os articuladores manuais e revelar o papel passivo da M2 na articulação de gestos.

Na observação ao uso de articuladores não manuais, verificou-se um aumento tanto na produção de expressões faciais como de outros articuladores não manuais. O aumento das expressões faciais fonológicas poderá ser resultado da estabilização deste parâmetro fonológico na LGP. No entanto, o uso de outros articuladores não manuais poderá ser derivado de um efeito do contexto discursivo infantil resultante, uma vez que a literatura nos indica que o uso destes articuladores (cabeça, tronco e pernas) é eliminado na articulação dos gestos ao longo do desenvolvimento da língua (Mineiro *et al*., 2017; e.o.).

Na observação ao uso de classificadores, observou-se uma diminuição destes em geral. Contudo, identificou-se que alguns dos itens-chave analisados foram somente produzidos através destes elementos fonomorfossintáticos.

No contexto de variação diacrónica, verificou-se que a maioria dos gestos não sofreu variações diacrónicas fonológicas ou lexicais. Na variação diacrónica fonológica, observou-se que a configuração foi o parâmetro fonológico que sofreu sempre alteração na articulação. Na variação diacrónica lexical, observou-se uma estabilização para um único item lexical (AVÓ e MENINA) e uma possível transição item-lexical (FLOR).

É importante não esquecer que esta análise diacrónica à LGP tem como base um discurso de contexto infantil e que, por sua vez, tem como característica a existência de fenómenos linguísticos distintos do discurso corrente. Importa observar a variação diacrónica da LGP no contexto discursivo formal e informal, que só um *corpus* como o de Referência para a LGP (Refª PTDC/LLT-LIN/29887/2017) possibilita.

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