Reference switching in sign and speech: grammatical and discourse features across modalities within signed-to-spoken language interpretation

Alternância de referência nas línguas de sinais e línguas faladas: características gramaticais e discursivas entre modalidades em interpretações de Libras para Língua Portuguesa

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ABSTRACT

Human languages contain a variety of tools for referencing agents, locations, arguments of predicates, and other entities that are introduced, described, and attributed actions within sentences. While there are similarities across modalities, there also exist notable differences. For example, signed languages are articulated with two hands, and sometimes one of them serves referencing functions while the other produces complementary signs. Additionally, signers use role shift and constructed action extensively, whereas there is comparatively less use of reported speech and co-speech enactment in spoken language discourse. Differences across modalities such as these provide areas of focus for studies of interpretation, since a common theoretical premise is that interpreters should disengage from the form of a source-language message in order to provide the meaning in the target language (with its own form). It is open to debate whether an interpretation can achieve complete semantic equivalence, given differences in the grammars, lexical items, and discourse features of the source- and target-languages. We use Libras texts interpreted into Brazilian Portuguese to examine various types of referencing in language and how it occurs in such texts. Our analysis is intended to raise questions about referencing and interpretation that merit in-depth study.

KEYWORDS: reference, pronouns, role shift, constructed action, handedness, interpretation.

RESUMO

As línguas humanas contêm uma variedade de ferramentas para referenciar agentes, locais, argumentos de predicados e outras entidades que são introduzidas, descritas e atribuídas com ações nas sentenças. Embora existam semelhanças entre as modalidades, também existem diferenças notáveis. Por exemplo, as línguas de sinais são articuladas com duas mãos, e às vezes uma delas tem funções de referência enquanto a outra produz sinais complementares. Além disso, o sinalizador usa a alternância de referência e a ação construída extensivamente, enquanto há comparativamente menos uso de cotação e ação construída que co-ocorre com discurso da língua falada. Diferenças entre modalidades como essas fornecem áreas de foco para estudos da interpretação, uma vez que uma premissa teórica comum é que os intérpretes devem se desvincular da forma de uma mensagem na língua de origem a fim de fornecer o significado na língua de destino (com sua própria forma). É possível debater se uma interpretação pode alcançar equivalência semântica completal, dadas as diferenças nas gramáticas, itens lexicais e características do discurso das línguas-fonte e as línguas-alvo. Usamos textos de Libras interpretados para o português brasileiro para examinar vários tipos de referência nessas línguas e como ela ocorre nesses textos. Nossa análise pretende levantar questões sobre referenciação e interpretação que merecem um estudo aprofundado.

PALAVRAS-CHAVE: referência, pronomes, deslocamento de papéis, ação construída, lateralidade, interpretação.

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1. Introduction

Human languages contain a variety of tools for referencing agents, locations, arguments of predicates, and other entities that are introduced, described, and attributed actions within sentences. Among those tools are the use of nouns, pronouns, and demonstratives, or marking verbs and nouns with morphemes that perform referential functions. Some languages also allow for an absence of overt reference of an agent/location/argument in a sentence (e.g. a syntactic subject or object), and actions and attributes could be linked with those references through other means such as by modifying verbs and adjectives, by demonstrating some action or reporting language use of another person, or by relying on context for reference interpretation. The richness of linguistic systems of referencing can be evidenced by the fact that any particular reference could contain information about a diversity of features of the referent (e.g. gender, person, number, status, etc.).

Indeed, referencing strategies are diverse among the world's languages, even though there are commonalities across typologically-distinct languages and languages produced in different modalities (e.g. speech versus sign). There are also aspects of signed languages that appear somewhat different from common referencing strategies that exist across spoken languages. One notable example is the use of the signer's non-dominant hand for referencing one object or entity, while the dominant hand may be producing distinct signs. This feature of signed languages follows from the fact that such languages have two primary—but motorically distinct—articulators, notably different from the single tongue that moves within the oral cavity of spoken language. Another example of differences across modalities might be the degree to which signers engage in so-called *role shift*—a grammatical tool a signer uses to refer to and represent one or more characters other than herself. As part of a role shift, a signer could also engage in *constructed action,* which allows a signer to portray the actions, attributes, emotion, and/or language use of another individual. Whereas reported speech and co-speech enactment have been compared to signed language role shifts and constructed action, detailed comparisons of when signers and speakers use those tools has received minimal attention.

What makes this linguistic diversity with respect to referencing tools particularly notable is that interpreters are often faced with the challenge of communicating rapidly-changing references made by users of signed and spoken languages—especially within simultaneous interpretation. Our own experience working with interpreters and working as interpreters has informed our intuition that interpreting referent changes can be challenging, indeed, and the research literature has begun to take note of that within the last few years. An important question, therefore, is whether there might be any effect of grammatical differences across languages on interpreter ability to represent meaningful

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aspects of the source language within the target language. In other words, do differences in grammar necessarily influence the success of interpretations?

By investigating referencing, which is a rich and diverse aspect of cross-linguistic variation, along with the ways that interpreters manage the communication of reference, we will likely identify strategies that do manage to maintain the integrity of each language within an interpreted setting. However, we may also identify common challenges that interpreters face with respect to referencing. In short, there may also be systematic ways in which differences in grammar affect interpreter success, simply due to the difficulty of producing a target message with approximately the same semantic message as the source language, considering the grammatical and discourse tools that a competent speaker has at her disposal.

In order to begin to examine these positions, this work presents data from Brazilian Sign Language (Libras) and Brazilian Portuguese (BP). The two languages are used frequently in interpreted settings throughout Brazil, across a range of contexts. Our focus is on two conference presentations that were delivered in Libras by Deaf, fluent users of the language, along with the BP interpretations that were produced by highly-skilled and professionally-licensed hearing interpreters. The presentations will serve as the source texts for the discussion of various referencing strategies, which will necessitate an elaboration of aspects of the grammar and lexicon of Libras, in line with decades of research that was initiated by a few particularly-influential linguists (such as FERREIRA-BRITO, 1984, 1995; KARNOPP, 1994, 1999; QUADROS, 1995, 1999). For example, Ferreira-Brito included a chapter on pronouns in her 1984 book, a topic we highlight in this work. Additionally, the interpreters' BP will be characterized in order to compare referencing strategies across Libras and BP. The analysis contained herein is not intended to be exhaustive, but rather to highlight some of the richness of referencing across signed and spoken languages, and how referencing appears in this type of cross-modal interpretation. Our main research question is the following: How is referencing in a signed language represented in a spoken language, and do interpretations successfully capture important aspects of source-language meaning? Our intent is to lay out some of the ways that referencing is performed across modalities, and examine examples of such referencing in Libras-to-Brazilian Portuguese interpretations.

2. Background

This review of relevant literature includes sections on spoken language, signed language, and interpretation. For each of these sections we provide examples of referential features that we discuss, which were taken from the academic conference presentations delivered in Libras and their

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interpretations into BP (i.e. the data used for examination of interpretation). The presentations were delivered by two Deaf fluent signers of Libras, each of whom holds a doctoral degree in a topic related to linguistics and translation/interpretation. One presentation focused on translation task of tests originally written in Portuguese to Libras for Deaf individuals, whereas the other described an attested method for augmenting academic terminology in Libras. Each presentation lasted for approximately 17 minutes, and each was simultaneously interpreted into Brazilian Portuguese by a well-respected, professionally licensed, and highly skilled interpreter (two distinct interpreters). The examples that we discuss can be viewed online (see QR codes or links included in this manuscript), in video format (which includes Libras presentations and Brazilian Portuguese interpretations).

2.1 Spoken language

2.1.1 Null subjects and/or objects

We begin by reviewing referencing strategies in BP that comprise aspects of the examples and analyses that we provide. In particular, we highlight the use of explicit pronouns in sentences, as well as examples where a sentence might not have an overt pronoun in subject position. In addition, we briefly review writings of reported speech in BP, in preparation for discussing a similar, albeit somewhat richer, phenomenon in Libras.

The grammars of various languages allow for sentences without overtly expressed subjects or objects (these are often referred to as pro-drop languages, following Government and Binding and subsequent approaches to syntactic theory). This linguistic feature occurs across languages that are typologically similar to each other (e.g. some Romance languages like Italian and Spanish), but also languages that are quite distinct in their structures and in their histories (e.g. Mandarin Chinese and Korean). Signed languages have also been described as pro-drop or null-subject languages, which will be described in detail in the next section. In some null-subject languages (e.g. Spanish and Italian) information about the subject is typically recoverable from verb morphology (referred to as *pro* within a generative approach), whereas in others (e.g. Mandarin Chinese and Korean) discourse information is the key determinant for determining subject and object values and features, since verb morphology does not contain that information (WESTPHAL, 1982; HUANG, 1984; RIZZI, 1986; LILLO-MARTIN, 1986).

Patterns of null-subject use in Brazilian Portuguese (BP) have received much attention in the literature, since BP has been suggested to differ from European Portuguese (EP) in this feature,

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with evidence from oral-language usage and written texts (BARBOSA; DUARTE; KATO, 2005). A common account is that users of BP are overtly expressing subjects and objects to a greater extent than EP users are, suggesting that BP has undergone a shift in this grammatical feature (DUARTE, 1995). According to Barbosa and colleagues, evidence suggests that BP has seen an increase in the use of overt pronominal subjects, especially when compared to data from EP. What is particularly notable is that the use of overt pronominal subjects is true for both animate and inanimate antecedents. This trend varies by grammatical person, and it is stronger for first- and second-person referents than for third-person ones. See example 1 for overt subject pronouns in BP, and (2) for null subject pronouns.

(1) *Marianne [2:05 – 2:12]*

https://utexas.box.com/v/Libras-PortBras-Interpret1

Nós esperamos que esse trabalho se amplie e que ele possa atender a área acadêmica.
1-PL hope-1-PL   that   that   work   REFL-3 amplify and that DET-MASC-SG can-SUBJ meet DET-FEM-SG area academic

(2) *Marianne [4:36-4:43]*

https://utexas.box.com/v/Libras-PortBras-Interpret2

Ø *foi um dos primeiros glossários quis possibilitou que*
Ø BE-3-PAST one of-DET-MASC-PL glossary-PL that allow-PAST that

influenciou a criação de outros glossários
influence-PAST DET-FEM-SG creation of other-PL glossary-PL

In (1), the overt pronoun *nós* is used in subject position for the main clause, and *ele* is used for the subordinate clause. Whereas, in (2), the subject is deleted (represented with the "Ø" in a typical syntactic position for subject) but the verb is conjugated for non-first and for past tense.

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Another aspect of the BP pronominal system that has been discussed in the literature is the ambiguous nature of some forms in the paradigm, especially in use. Ambiguity is not uncommon among pronominal systems of the world (e.g. second-person-singular and second-person-plural in English), which means that context plays a key role in interpreting such pronouns. Lopes (2014), for example, argues for a tendency in BP use that is trending toward the loss of number marking on pronoun forms, but that change may not be part of the current grammatical structure of the language. Instead, she suggests that prescriptive practices (e.g. schooling) are keeping [number] from being lost on pronouns in BP.

In addition to allowing for null subjects, BP can exhibit null objects (FARRELL, 1990, CYRINO; LOPES, 2016). However, there are no examples of BP null objects in our data.

2.1.2 Reported speech and reported action

Across multiple spoken languages, the ability of a speaker to report the speech or actions of others has been described (e.g. TANNEN, 1989; CLARK; GERRIG, 1990; MCNEILL, 1992; ROTH-GORDON, 2007). This form of reference switching, in which the speaker (as narrator) references another character can be notably common in casual speech, especially in some registers of language use. At times, reference to another person's speech is made by using a lexical term to introduce the quoted speech such as *said* (English), or *falou* (Portuguese), but it can also be the case that a speaker can simply switch reference using features of their voice (e.g. a change in pitch, intensity, etc.).

A speaker can also demonstrate the actions of another character, which can also be considered a form of reference switching. For example, Clark and Gerrig (1990) propose that quotations in spoken language could actually be considered to be a type of *demonstration*. In demonstrations, a speaker would use their body and voice to portray aspects of that to which she is referring. This view also aligns with that of other researchers who have studied the co-speech gestures of spoken language users, especially those gestures that iconically represent some form of enactment (e.g., MCNEILL, 1992). This communicative device, which is leveraged by spoken language users, is often used in conversational or narrative contexts, as a complement or supplement to the spoken word. While some actions of others (i.e. switches in reference) might be easier to demonstrate (i.e., with reported action or reported speech) than to describe in spoken language (CLARK; GERRIG, 1990), it is questionable whether co-speech gestures are necessary components of language use for spoken language.

An example of reported speech in BP, both with the lexical word *falar* ('to say') and without lexical material to introduce the quoted speech, can be found in (3) below, taken from Roth-Gordon (2007:330); there were no examples of reported speech in the sign-to-voice interpretations in our data, thus we provide the following example from the literature.

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(3)

Feijão: *Aí esculachei ele mesmo. Falei, 'Ó rapá, não*
So then I really told him off. I said, 'Hey rapá ('buddy'), I don't

dependo pra tu-' Aí 'Cara, quando eu for bandido-'
need you for-' Then 'Cara ('man'), when I become a bandit-'

Falei, 'Ih rapá, náo rendia nem pros moleque da Z.'
I said, 'Hey rapá ('buddy'), I didn't suck up even to the kids of Z.'

[a criminal gang]

In this section we have described two aspects of spoken language grammar that align with similar constructions in signed languages for performing reference, null subjects and objects and the use of reported speech and reported action for conveying information about characters. Like signed languages, spoken languages also engage in reference using lexical nouns, proper nouns, and demonstratives (among other devices). In the next section, we will highlight aspects of signed language that also provide reference, which will allow us to consider the referencing strategies in interpreted settings.

2.2 Signed language

In this section we provide information about some referencing strategies used in signed languages—only a subset of which parallel similar strategies in spoken languages. In some cases, communicating reference might be challenging for interpreters performing sign-to-voice interpreting simultaneously with the signed message. The referencing strategies we discuss include null pronouns, role shift and constructed action, use of the non-dominant hand in some two-handed signs, and aspects of the use of space. These and other referencing strategies in signed language are discussed in Hodge et al., (2019), using data from Australian Sign Language (Auslan). In particular, within the genre of narrative, the authors show that conventionalized lexical items appear early in discourse, but they are often replaced by other, more context-dependent, strategies that are less specific (from a lexical point of view), but potentially informationally richer (from an enactment perspective).

2.2.1 Null subjects and/or objects

A very noticeable feature of many signed languages is that subject or object pronouns can be

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omitted in various circumstances, much like the same feature in some spoken languages. One early account for such omissions was offered by Lillo-Martin (1986, 1990), working within a framework of Government and Binding. In particular, she discussed two kinds of null arguments in American Sign Language (ASL), what she identified as (1) *pro* co-occurring with verbs that indicate subject and/or object by movement in space (in some accounts, this is morphological agreement, comparable to Italian), and (2) *pro* identified by co-indexation to a topicalized nominal phrase (as in Chinese, a discourse-oriented language). Lillo-Martin's analysis takes into account verbs that could be inflected for features such as person, number, and aspect (i.e. what have been referred to as agreement verbs, PADDEN; 1983) and verbs that are typically not inflected for such features (i.e., so-called plain verbs, according to Padden). Quadros (1995) furthered this line of research by examining Libras, and she found that Libras also exhibits a binary distribution between two the categories of null pronouns proposed by Lillo-Martin (1986) for ASL. In her analysis of null arguments in Libras, Quadros (1995) proposed that there are two kinds of null pronouns: *pro* when agreement is marked overtly on the verb via inflection (she argued that such agreement is associated to phi-features person, gender, number and Case) and *PRO* when context provides the information for the identification of the pronoun reference. The following examples from Libras illustrate instances of *pro* and *PRO*.

(4) *André [01:02 to 01:05]*

https://utexas.box.com/v/Libras-PortBras-Interpret4

Ø FOCAR O-QUE GERAL PROCESSO TRADUÇÃO[4]...
(pro) focus what general process   translation
I (will) focus on the general translation process.

---

4   Glosses for Libras signs are provided in capital letters. Fingerspelled words are indicated with dashes between fingerspelled letters. Modifications of signs to indicate additional information (e.g. subject, object, location, person, number, etc.) are indicated with dashes, along with the relevant information. Person marking is indicated with (1, 2, 3), and number marking is indicated with (SG, PL). Non-dominant-hand articulation is indicated by (NDH), and specific locations in the signing space are indicated by lower-case letters (a, b, etc.). Role shift and non-manual negation duration is indicated with a line above the glosses with which it co-occurs (rs, neg). Finally, when relevant to our discussion, two-handed productions are represented with the dominant hand articulations above the non-dominant hand articulation.

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(5) *André [02:05 to 02:08]*

https://utexas.box.com/v/Libras-PortBras-Interpret5

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                                    negation___
IX-1-SG VER-neutral-space   Ø   RESOLVER
1-sg     look                   (PRO)
```
I look over (the situation). (This does not) solve (the problem).

(6) *Marianne: [01:09 a 01:11]*

https://utexas.box.com/v/Libras-PortBras-Interpret6

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IX-1-SG ENTÃO CONCENTRAR-neutral-space Ø  Ø       1-ESCOLHER TEMA.
1-sg     then     focus (on that)                 (PRO)   (1-sg) choose topic
```
Then, I focused on choosing the topic.

```
Ø 1-SG-MOSTRAR-2-SG Ø.
 pro (1-sg) show (2-sg) (pro)
```
I show you.

In (4), our analysis is that the signer does not include an overt subject, but the intended meaning is first-person-singular, which is similar to the signer in (6) for the verbs ESCOLHER and MOSTRAR. We should note, however, that a different analysis might consider the sign FOCAR/FOCO to be a noun, rather than a verb, as we do here. Such an analysis would not require the null subject interpretation, since it treats FOCO as the syntactic subject. Beyond consideration of null subjects, the signer of (5) and (6) also uses null objects (for the verbs VER and MOSTRAR). These verbs are marked with spatial modifications that encode subject and object. However, the verb RESOLVER in (6) is a so-called plain verb; no spatial inflections are used, yet it is understood, in context, to mean that the inclusion of an interpreter may or may not solve the problem that the signer is describing.

Another common syntactic structure in signed languages also allows for the existence of null arguments: serial verbs and coordinated constructions. The following examples illustrate the

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serial verbs constructions with the subject marked overtly (in bold). The serial verbs are intended to refer back to the same subject introduced in association with the first verb in the sentence. These constructions express a kind of coordination. This can be seen in (7), with a single subject (OUTRO ALUNO SURDO, 'other deaf student') that serves as an argument for subsequent verbs in that clause. These coordinated structures are not marked prosodically (e.g. with pauses between sentential segments), and the intended meaning is that the single subject (as produced early in the sequence) serves as the reference for the syntactic subject in all of the subsequent sentences (until the subject is explicitly changed).

(7) *Marianne [9:02-9:10]*
https://utexas.box.com/v/Libras-PortBras-Interpret7

IMPORTANTE IX-1-SG AJUDAR COMO OUTRO+ ALUNO SURDO
important   1-sg   help   how   other   student   deaf

PARTICIPAR ESTUDAR ARQUITETURA. VER CLARO
participate   study   architecture   see   clear

APRENDER DESENVOLVER E(então)
learn   develop
This is important, I help other deaf students to participate, to study architecture.
They see (it) clearly, they learn and they develop, then.

In (8), the use of sentential coordination is also illustrated. In this example, some subjects are marked overtly (e.g., IX-1-SG, SINAL[Germano]), but others are not explicit (the subject of SIGNIFICAR, ACEITAR, and PROPAGAR). In addition, no objects are explicit in this sequence of sentences, but context provides the information that the referent of ACEITAR and PROPAGAR is a hypothetical sign that is being used as an example during the presentation. What's more, the subject of ACEITAR and PROPAGAR (in the final sentence) is intended by the signer to mean the general public (i.e., deaf people from the Libras-signing community), but that nuanced information is not included within this segment of sentences. It is common knowledge that people (i.e., language communities) are the ones who accept and propagate new signs/words, not single individuals.

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(8) *Marianne [08:56 to 09:02]*
https://utexas.box.com/v/Libras-PortBras-Interpret8

IX-1-SG ACEITAR-1 Ø.   SINAL(Germano) CERTEZA ACEITARa Ø.
1-sg   accept   Germano   certainly   accept

Ø SIGNIFICAR Ø ACEITAR Ø   PROPAGAR Ø Ø
  mean   accept   propagate

I accept (the sign), then Germano accepts (it), (he) gives-meaning, (people) accept (it) and (they) propagate (it) (to everybody).

These types of serial verb constructions and sentential coordination associated to the same subject or the same object are not uncommon in signed languages and, as can be seen in the examples above, they can co-occur with null arguments. Additionally, the null arguments can appear in sentences with verbs that inflect for person and number (i.e. agreement verbs) and those that typically do not (i.e. plain verbs). All of these constructions are rich in referencing, with a mix of references that span from overt to null, with various examples of ambiguity throughout.

2.2.2 Role shift and constructed action

Role shift and constructed action in signed languages have inspired many analyses in the literature, both formal and functional in nature, and their place in signed language grammars continue to be debated. The treatment in the current work is not intended to address debates about how best to analyze role shift and constructed action, but rather to highlight the semantic qualities and functions of these devices, in order to examine whether interpreters incorporate aspects of the meaning of the role shift and constructed action in their sign-to-voice work.

Put simply, role shift is used by signers to identify a change from one perspective to another (e.g. from narrator/signer perspective to that of another character, which could include a portrayal of the narrator/signer at a different time and/or space). Identifying markers of the shift and accounting for referent (including pronoun) interpretation have been the focus of various analyses (e.g. QUER, 2005; LILLO-MARTIN, 1995, also see LILLO-MARTIN, 2012 and CORMIER et al., 2015 for reviews of theoretical accounts of role shift and constructed action). Sometimes the signer marks

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a shift with lexical signs (e.g., by signing a noun that corresponds to another character's role or by pointing to a location in the signing space), whereas the signer might choose to only use non-manual means to identify the shift, such as change in eyegaze, facial expressions, head movement, and/or body/torso orientation. The shift is intended to indicate the perspective of the other referent. Within any particular role that is being referenced after a role shift, a signer could also engage in constructed action, which reflects a signer representing the actions, thoughts, attitudes and feelings, and/or the utterances of a character (CORMIER et al., 2015). Some authors have suggested that constructed action could be described in terms of degrees, from subtle to overt in nature (e.g. QUINTO-POZOS; MEHTA, 2010; CORMIER et al., 2015).

In the data from the present study, there are multiple examples of the signer engaging in a role shift to depict a different referent (e.g. a character rather than the narrator/presenter). In some cases, the referent shift serves as the syntactic subject of one or more sentences, including sentences with plain and agreement verbs. As noted above, the semantic interpretation of the shift is the focus of this analysis. We leave discussions of theoretical treatments of such shifts to other works.

(9) *André [08:56 to 09:03]*
https://utexas.box.com/v/Libras-PortBras-Interpret9

rs_____
IX-1-SG E (não) PROVA TRADUZIR EXPLICAR R-O-C-O-C-Ó PERCEBER
1-sg   not   test   translate   explain   rococo   detect/notice

SUBENTENDIDO DIFERENTE EXPLICAR E (não)
implication   different   explain   not
I do not detect that the test translated and explained R-O-C-O-C-Ó as implying a different explanation.

In (9), the signer uses an overt subject (IX-1-SG) in the sentence, but he also performs a role shift and changes posture (the shift is most clearly marked by the time he fingerspells *rococó*), which is intended to portray a deaf student examining texts within an exam. The shift and subsequent action (i.e., bending over, as if viewing a text) is marked by a change in eyegaze and head/posture orientation, and the signer shifts back into narrator perspective (i.e., presenter discourse) when he signs E(não)

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at the end of the segment. That final negation reflects the presenter's belief about the success of the situation he just portrayed.

(10) *Marianne [9:02-9:10]*

https://utexas.box.com/v/Libras-PortBras-Interpret10

IMPORTANTE IX-1-SG AJUDAR COMO OUTRO+ ALUNO SURDO
important   1-sg   help   how   other   student   deaf

rs_____
PARTICIPAR ESTUDAR ARQUITETURA VER CLARO APRENDER
participate   study   architecture   see   clear   learn

DESENVOLVER E(então)
develop

This is important, I help other deaf students to participate, to study architecture. They see clearly, they learn and they develop, then.

In (10), which is identical to (7) as presented earlier, the signer uses an overt subject (entire noun/determiner phrase, including a demonstrative pronoun, a noun, and an adjective) at the start of clause that begins with OUTRO ALUNO SURDO. However, she then performs a role shift into that character, and the shifted reference is most obvious during the verbs VER, CLARO, and APRENDER. In this case, the signer is shifting, even though the subject had been signed overtly. In some cases, the subject is not explicit, and the role shift is intended to reflect the subject(agent) of the sentence.

2.2.3 Use of both hands for potentially distinct expressions

In signed language, the fact that a signer has two primary articulators (a dominant and a non-dominant hand) allows for the provision of multiple types of information at the same time. In addition, the two hands allow the signer to keep one stationary in the signing space, while articulating something different with the other hand. Liddell (1990), for example, working within the framework of cognitive linguistics, described listing techniques that ASL signers often use (what he referred to as 'buoys'), with the non-dominant being held relatively stationary while the dominant hand referred to different characters, concepts, or objects by pointing to the different fingers (of the non-dominant hand).

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Within our own data, we see examples of referencing using the non-dominant hand, such as by holding it stationary and referring back to that hand throughout a stretch of discourse. One could interpret the non-dominant hand in these cases as being associated with the object of the sentence, held in the signing space while the other hand continues to produce other signs, phrases, and sentences.

(11) *André [10:10 to 10:20]*
https://utexas.box.com/v/Libras-PortBras-Interpret11

As noted in an earlier footnote, in this and all subsequent examples, two closely-aligned lines of text refer separately to the dominant hand articulation (above) and the non-dominant hand articulation (below).

PROBLEMA MAIS O-QUE CONCURSO PORTUGUÊS TEXTO OBJETIVO
                  CONCURSO---------------------------- OBJETIVO
problem   more   what   test   Portuguese   text   objective

O-QUE OBJETIVO IX-NDH O-QUE IX-NDH OUVINTE IX-3-POSS
CONCURSO   OBJETIVO CONCURSO--
what   objective   that   what   that   hearing-person 3-poss
test   test

TEXTO IX-3-POSS OUVINTE   E(não) OBJETIVO IX-3-POSS SURDO E(não)
CONCURSO----- OBJETIVO----------------------------
text   3-poss   hearing-person no   objective 3-poss deaf   no
test   objective
The biggest problem is that the test is created in written Portuguese with the target audience being hearing people, not deaf people.

In (11), the signer holds the non-dominant (left hand, in this case) portion of the signs CONCURSO and OBJETIVO. The signs serve as reminders of the subject of the sentences, but they also play a key role in maintaining a discursive focus on the importance of those references for the presenter. The presenter is intending to make a key point that involves the signs for CONCURSO and OBJETIVO, and the ability to maintain a portion of those signs in the signing space allows for such a point to be made.

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(12) *Marianne [07:33 to 07:37]*

https://utexas.box.com/v/Libras-PortBras-Interpret12

FILMAGEM PRONTO COMO PRÓXIMO IMPORTANTE CONCENTRAR
film   ready   how   next   important   concentrate

V-A-L-I-D-A-Ç-Ã-O ACEITAR ACEITAR IX-NDH ACEITAR COMO ACEITAR
                         PALAVRA--------------------------   PALAVRA
validation   accept   accept   that(word) accept   how   accept
                       word----------------------------   word

When the video is ready, the next step is to concentrate on the validation process to certify/ confirm acceptance of the word.

In (12), the signer is using the co-articulation of the sign PALAVRA on her non-dominant with other signs on her dominant hand. PALAVRA, which is not actually signed in this segment on the dominant hand, functions as a syntactic subject (i.e., 'How the word is accepted') and as an object ('... validation and acceptance of the word').

2.2.4 Use of neutral space

From the early analyses of signed languages, researchers have highlighted the complex and systematic use of space in signed languages (FERREIRA-BRITO, 1984, 1995; KLIMA; BELLUGI, 1979). Signs are modified to indicate grammatical categories such as person and number, and this use of space co-exists with leveraging the space around the signer for identifying locative information (e.g., 'here, there', etc.). Space is also used for comparative purposes, such as when a signer articulates a sign in one area of the signing space and then refers back to that location, which is distinct from other locations/referents in the signing space that the signer has referenced. In line with the rich use of the signing space in signed languages, Lourenço and Wilbur (2018) proposed that most verbs in Libras (and possibly other sign languages) could be described as so-called agreement verbs that share location features between controller (the nominal) and target (the verb); they refer to this as co-localization. Further, the authors argued that the so-called plain verbs (following PADDEN, 1983), which generally do not inflect for person and number, behave as they do (i.e., do not inflect for subject and object within the signing space) because of phonological restrictions. Following this proposal, articulating the so-called plain verbs in different areas of the signing space would be sanctioned in

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Libras, comparable to the articulation of verbs that inflect for person and number. That is, even plain verbs (such as Libras EXPLICAR) could be articulated in different locations of the signing space in order to identify different arguments/referents, as we noted earlier.

(13) *André [10:48 to 10:51]*
https://utexas.box.com/v/Libras-PortBras-Interpret13

PAPELa ESCRITOa IX-NDHa COMOa ADAPTARa aAPROXIMARb
PAPELa----------------------------
paper   written   that(text) how   adapt   approximate
paper
The text needs to be written, and to be adapted into a more similar form to the original.

For example, in (13) a classifier sign/depictive verb is used to reference a paper *(papel)*. That sign is produced by one of the signers in the location 'a' and the following signs use the same location to refer to DV(papel)a: ESCRITOa IX-NDH-a COMOa ADAPTARa. However, aAPROXIMARb ends in another location of the space, with the intent of referring to something else (in this case, the result of the translation). This strategy of using multiple locations in the signing space for sign modification is also seen in (14) below.

(14) *André [5:49-6:01]*
https://utexas.box.com/v/Libras-PortBras-Interpret14

DEPOIS PROVA+ IX-downward(prova) TER IDEOLOGIA
       PROVA----------------------------
after   test   point to non-dominant hand have ideology
  test

(body shift viewing from left)
TER DENTRO HISTÓRIA ACUMULAR DENTRO FORA
IDEOLOGIA(back of hand)----------------------
have inside   history   accumulated inside   outside
test

(body shift viewing from right)
rs_____

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VER IX-NDH('prova') PERCEBER PEGAR+ (from behind) ENTENDER
PROVA(front of hand)--
   look-at-hand   detect   get(from behind hand)   understand
   test

  _____
   VER-to-behind PEGAR
   PROVA(front of hand)----
   look-to-behind(hand) get
   test

After the test is translated it does have an implied information not clearly detectable, it has a history accumulated inside and outside it that is noticed, the implied information is understood, it is seen by hearing people that can read it (even if it is not clearly presented).

Lastly, in (14), the signer uses the signing space (and his non-dominant) in a different way than in (13). His non-dominant maintains the non-dominant hand portion of the sign PROVA while the signer makes reference to two sides of the hand—corresponding metaphorically to what can be seen of the exam (portrayed by his palm side of the hand, which is the orientation of the non-dominant that faces the dominant hand in the sign's citation form) and what cannot be seen (i.e., what lies in the background or experience of the test-taker), which is portrayed by the space that is behind the top of the hand. The signer shifts his torso/head/eyegaze accordingly, corresponding to the side of the hand that he wishes to reference with other signs.

2.3 Summary

As can be noted, there exist various types of referencing strategies in Libras grammar and multiple discourse strategies that signers use. As with BP, Libras allows for null arguments, both syntactic subject and object, and it takes advantage of the types of strategies that report the speech and/or actions of other characters (akin to reported speech/action or demonstrations in spoken language, but likely different in various ways). In addition, signed language allows for some referencing strategies that are nonexistent in spoken language, such as using a non-dominant articulator for referencing an object while the dominant hand is simultaneously producing signs (in this way, the non-dominant hand can serve as an argument of a verb, but it can also be used for discursive focus). Additionally, the signing space can be used to elaborate upon signs metaphorically, which can also serve a referencing function. A brief review of some relevant studies of interpretation appear in the next section, before we introduce the final section with data that highlight sign-to-voice interpreting from our Libras-BP texts.

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2.4 Interpretation

Among studies of interpretation that examine linguistic aspects of the source language and the target language, pronouns have received some attention, even though this area of inquiry is comparatively sparse. This is true for spoken-spoken language interpretation (e.g., GERNSBACHER; SHLESINGER, 1997; SHLESINGER, 1995; TAKIMOTO; KOSHIBA, 2009; WANG, 2014; ZHAN, 2012) and signed-spoken language interpretation (PEREIRA, 2014; NICODEMUS; DICUS, 2015; QUINTO-POZOS et al., 2015; QUINTO-POZOS; MUROSKI; SAUNDERS, 2019). In these studies, authors have examined the influence of pronoun forms on interpretation accuracy and character reporting, among other things.

For spoken-spoken language interpretation, Takimoto & Koshiba (2009) examined pronominal forms used in footing shifts in Japanese-English interpretation. Despite notable grammatical differences across the two languages, the interpreter generally interpreted pronominal information accurately. However, the interpreter also failed to engage in footing shifts in some instances, which could have prevented listeners from determining the intended addressee.

With regard to signed-spoken language interpreting, some researchers have also wondered about the extent to which grammatical forms in the source language align with the target language, since differences across languages and/or modalities could, hypothetically speaking, have an effect on the forms that are used by interpreters (NICODEMUS; DICUS, 2015; QUINTO-POZOS et al., 2015; QUINTO; MUROSKI, SAUNDERS, 2019). An example of such an analysis can be found in a 2010 publication that focuses on gendered language in Spanish (QUINTO-POZOS et al., 2010). In that work, ASL-to-Spanish interpretations from approximately 20 interpreters were examined for strategies that the interpreters used when having to decide on a Spanish gendered form (e.g. male or female friend, *amigo/amiga,* respectively) for a sign in ASL that is not specified for gender (FRIEND). In ASL, as in other signed languages, gender is generally not captured on general nouns (other than WOMAN, GIRL, etc.), and any gender reference must occur separately. The results revealed that the interpreters were often—though not always—in agreement about which form to use, which is could be influenced by perceived gender roles in society.

Another example of grammatical differences between signed and spoken language concern the fact that signers can point to referents or locations in the immediate environment, and they can also point to locations in the signing space that serve as abstract loci for grammatical referents (e.g. pronominal forms functioning as subjects and objects). A question is whether these different types of

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pointing in signed language could influence interpretations that are produced. As one way to address this question, Quinto-Pozos and colleagues (2019) provided an analysis of a TEDx talk given in ASL along with the English interpretation of the talk. They found that, generally speaking, the interpreter most accurately interpreted first-person pronouns in ASL, however, there were comparatively fewer faithful interpretations of third-person pronouns and singular demonstratives. The authors speculated that the potential for ambiguity between third person pronouns and demonstratives in signed language makes them more vulnerable to misinterpretation (including by being omitted). However, in that work the authors did not consider ASL null pronouns and the extent to which different ASL verbs also communicate information about reference (i.e. subject and object).

While Quinto-Pozos and colleagues considered interpretation of pronouns when the source language is a signed language and the target language is a spoken language, Nicodemus and Dicus (2015) explored the question of influence of grammatical structure from English on ASL interpretations by focusing on ASL SELF and English -self. In both languages, SELF/-self function as reflexive pronouns and they can also serve emphatic functions. However, ASL SELF can also serve a pointing (i.e., pronominal) function. Some authors suggest that the emphatic version of ASL SELF is more common than the reflexive variant (WILKINSON, 2013, KOULIDOBROVA, 2012). Nicodemus & Dicus analyzed English lectures interpreted into ASL and found that the English -self and ASL SELF (as used by the English-ASL interpreters) functioned most often as a reflexive, which did not align with earlier accounts of ASL SELF outside of interpreted settings. The authors suggest that differences in distribution of SELF/-self across English SL texts and interpreted ASL support the conclusion that the interpreters did not simply transcode (i.e., literally translating, by mapping English syntactic structure to ASL) the SELF forms, but they also indicate that interference from English may have also played a role in the interpretations.

Of particular relevance to the current study, Pereira (2014) analyzed forms of address that Brazilian Sign Language (Libras)-Brazilian Portuguese (BP) interpreters used when Deaf university students interacted with hearing people in classrooms, meetings,interviews, and during a presentation. The author, working within a framework that considers stance-taking, focused on discursive features of language use of the interpreters' Libras-BP interpretations. Pereira found that interpreters aligned their pronoun use with the perspective of the Deaf participants, by overwhelmingly using first-person forms in favor of third-person forms. However, the first-person forms were diverse in nature, including first person singular *eu*, first person plural *a gente* and *nós*, verb inflections, and no person marking. This study highlights the diversity of ways in which a seemingly straightforward pronoun (i.e. a first-person singular) can be interpreted into a spoken language that contains null subject marking as an option.

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Another published work that is particularly relevant for the current work is Lourenço (2018), which highlights aspects of interpreting between signed and spoken languages. The author outlines aspects in which languages in the two modalities are grammatically different, with specific examples of interpreters interpreting from Libras into Portuguese. Lourenço echoes writings from researchers of different signed-spoken language pairs, noting that some grammatical aspects of signed and spoken languages can be challenging for accurate interpretations. For example, Lourenço provided data from the challenges that interpreters face with differences in grammatical gender across languages (e.g. masculine and feminine gender in Portuguese, versus no grammatical gender in Libras) and in syntactic constructions in Libras that utilize space and the signer's body for reporting the language and actions of other characters. The author shows how various interpreters produce different Portuguese interpretations of the same Libras text. This writing provides relevant background for the data that we highlight later in this work.

3. Research question, materials, and data coding

For this analysis, our guiding research question is the following: How do interpreters represent grammatical and discourse features of a signed language (as the source language) that are similar to or differ from the spoken language functioning as the target language? In order to do this, we examine grammatical structures found in the Libras texts and compare them to the Brazilian Portuguese produced by the interpreters. We also relate these productions to what has been reported in the literature concerning both Libras and BP, in order to contextualize the influence of grammatical differences, if any, on simultaneous interpretations.

The data used for analysis consist of two academic conference presentations delivered by two Deaf fluent signers of Libras at a federal university in Brazil; each signer holds a doctoral degree in a topic related to language and translation/interpretation. One presentation focused on translation task of tests originally written in Portuguese to Libras for Deaf individuals, whereas the other described an attested method for augmenting academic terminology in Libras. Each presentation lasted for approximately 15-20 minutes, and each was simultaneously interpreted into Brazilian Portuguese by a well-respected and highly skilled interpreter (by two distinct interpreters). The Libras and BP texts were transcribed using Elan (CRASBORN; SLOEJES, 2008; ELAN, 2020) and pronominal and verbal signs were coded and analyzed for each language. All authors were involved in the coding and analysis of the language features.

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4. Characterization of referencing strategies in the Libras and BP texts

For the purposes of characterizing the distribution of referencing strategies used across the two presentations in Libras and the interpretations provided in BP, we provide a brief section that reports referencing features across the languages. The reports are not intended to be exhaustive, but rather to provide the reader with useful information that helps to envision how referencing typically occurs across the two languages.

4.1 Referencing in the Libras texts: quantitative generalizations

The Libras texts aligned with reports of pronoun and verb use in the language, as outlined earlier in this manuscript. In particular, each of the presenters produced both overt and non-overt pronouns, almost in equal numbers. Non-overt information about subject and/or object (i.e., realized as pronouns, when overt) can be shown on many verbs (through some form of modification of the verb) or via role shifting and constructed action. Additionally, the majority of verbs produced by the presenters were modified to include some type of additional information (e.g. about subject, object, location, etc.), with only approximately one-third not providing such information. In the category of modified verbs are also so-called plain verbs that were inflected in some way (including for person or location, according to how locations had been used by the signer previously). See Table 1.

Table 1: Distribution of Libras pronouns and verbs in the two texts

Presentation			
	Total tokens pronouns	% overt pronouns	% non-overt pronouns (null arguments)
André presentation	262	55%	45%
Marianne presentation	349	51%	49%
	Total tokens verbs	% inflected/modified verbs	% uninflected verbs
André presentation	231	63%	37%
Marianne presentation	348	70%	30%

Source: Authors' own creation.

The distributions of Libras pronouns and verbs represented in Table 1 highlight key features of signed language. As noted in our background section, signed languages have a myriad of ways to indicate reference. Of particular importance for the present work is that some of the referencing strategies used by signers could be misunderstood if the viewer misses or simply misinterprets a switch in pronoun reference.

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4.2 Referencing in the Brazilian Portuguese (BP) texts: quantitative generalizations

The Brazilian Portuguese produced by the interpreters also agreed with descriptions in the literature, particularly with respect to extent to which null subjects appeared in the language production. Additionally, the two BP texts are surprisingly similar in multiple respects, even though the content of each interpretation is unique.

Specifically, each of the interpreters produced both overt pronouns (such as *eu, vocês,* and ela) and examples of null pronouns, although the majority of pronouns were overt. This agrees with studies that suggest that BP has changed over the years, and more subjects are overtly pronounced (with fewer null pronouns) than before. Likewise, the vast majority of verbs are inflected, which provides information about person and number (among other things).

Table 2: Distribution of Brazilian Portuguese pronouns and verbs in the two texts

Presentation			
	Total tokens pronouns	% overt pronouns	% non-overt pronouns (null arguments)
André presentation	174	81%	19%
Marianne presentation	171	82%	18%
	Total tokens verbs	% inflected/conjugated verbs	% uninflected/infinitive verbs
André presentation	243	82%	18%
Marianne presentation	197	77%	23%

Source: Authors' own creation.

4.3 Examples of Libras to BP interpretations

In this final section of the manuscript we present examples of extended Libras text, along with the Brazilian Portuguese interpretations that were produced simultaneously during the conference presentation. These examples highlight referencing strategies that we summarized in previous sections, and they allow us to examine how highly qualified interpreters manage referencing strategies between sign and speech.

We begin by describing a Libras segment that contains examples of overt and null subjects and objects, role shift, constructed action, use of the non-dominant hand for discursive focus, and use of the signing space contrastively. See (15). In these examples, the English translations of the Libras glosses is included immediately below the glosses, for ease of reading.

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(15) *André [4:27-4:55]*

https://utexas.box.com/v/Libras-PortBras-Interpret15

EXEMPLO SEMPRE FACULDADE-SC GERAL DOCUMENTO CONTRATO
example   always   Santa-Catarina-college   general   document   contract

<div align="right">ALOCAR
allocate</div>

rs (interpreter)_____
OK BEIJO TCHAU IR-EMBORA   TEXTO TRADUÇÃO
ok kiss   goodbye   leave   text   translate
ALOCAR-----------
allocate

rs (interpreter)_____
BEIJO TCHAU IR-EMBORA
kiss   goodbye   leave

rs (presenter)   rs (interpreter)_____
INTERPRETE IX-1SG PENSAR ACABAR TEXTO TRADUÇÃO
interpreter   1sg   think   finish   text   translation

_____
BEIJO IR-EMBORA
kiss   leave

rs (presenter)   rs (deaf student)_____
V-A-I SURDO IX-1PL DV(abrir tela) CA: squint eyes while looking at text
go   deaf   1st-pl   open-screen   (character looking at the text)

rs (presenter)_____ rs (deaf student)_____
TEXTO PORTUGUÊS VER IGUAL-TEXTO-IGUAL-TRADUÇÃO-TELA
text   Portuguese   see   same-text-same-translation-screen
TEXTO---
text--

SINALIZAÇÃO IX-NDH COMPREENDER TRADUÇÃO-EQUIVALENTE
----
  signing(bad)   this(test)   understand   translation-equivalent

rs (presenter)_____
E(então) ADIANTAR-NÃO+
then   not use

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Target Language Interpretation:

Nós falamos então, na universidade, contratamos alguém, e aí a pessoa então termina de trabalhar, realiza seu serviço e está encerrado. Porém não é tão simples quanto parece. Nós surdos, quando assistimos algo feito dessa forma, muito provavelmente não vamos entender, porque vai ficar algo muito similar a prova escrita, a prova escrita em português e isso não resolve, não resolve...

We (can) say then, at the university, we hire someone, and then that person finishes the work. She/he does her/his work and it is done. However, it is not so simple as it looks. We, deaf people, when we look at what was done in that way, it is probably the case that we will not understand because it will be too similar to the written form of the test, the Portuguese written test and this does not solve (the access issue), it does not solve (it) ...

The segment in (15) is rich in multiple types of referencing strategies. We focus on use of the non-dominant hand, role shift and constructed action. To begin, the signer uses his non-dominant to articulate the sign ALOCAR, with reference to the fact that the university (or college department) contracts with an interpreter for services for a typical testing situation. The signer does not explicitly mention the syntactic object until later (which would be INTÉRPRETE), but that is understood from context, as part of his larger presentation. The interpretation references the university as part of the syntactic subject, which is linked with the conjugated verb *contratamos* ('[we] contract [with]...'). In doing so, the interpretation indicates that the presenter plays an active role in the act of contracting with an interpreter to provide services, and this is likely done because the working sign-to-voice interpreter is aware that the presenter actually works at the University that is being referenced. This interpretation may also serve to highlight a discursive point: that there is some type of collective responsibility for the decision to follow the process as it is described here by the signer.

Throughout the segment in (15), the presenter engages role shift and constructed action multiple times, which provide rich depictions of the types of experiences that deaf students are familiar with. The role shift and constructed action include shifts into the roles of the interpreter and the deaf student in the presenter's examples. The first shift occurs when the presenter shifts into the interpreter's role and portrays the interpreter saying goodbye and leaving after her/his work is completed. In this way, the syntactic subject is not mentioned lexically (nor is a pronoun used), but rather takes the form of the role shift and subsequent constructed action. The depiction of the interpreter saying goodbye is not represented in the interpretation, but it is reported that the interpreter's work is completed. We would suggest that meaning contained in constructed action of this nature (short segments that

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reference another character and provide snapshots of that individual) can be challenging for working interpreters since they could require inserting appropriate references into the target-language text. If the signer reported what someone said/signed, the interpreter might produce a semantically similar construction in the target spoken language—if appropriate to the intended register. It has been shown that role shift and constructed action occur in informal and formal registers of signed language (QUINTO-POZOS; MEHTA, 2010), but reported speech might not be as common in formal registers of spoken language. If, however, the signer used constructed action to depict what someone did, the interpreter producing a target spoken language interpretation could find it very challenging to determine what of the construction action to encode in aspects of the spoken language text, and also how best to encode it.

Subsequent to representing the interpreter via shifting, the signer uses role shift and constructed action to portray the deaf student's perspective. The presenter signs IX-PL to refer to more than one deaf person (likely to represent the commonality of this experience for deaf students), and then engages in role shift and constructed action to portray a typical test-taking experience. For example, the presenter depicts the deaf student looking at a screen and seemingly not understanding the connection between the interpreted text and the written text (as portrayed with the signer squinting her/his eyes as if looking intently and trying to comprehend what she/he is seeing). The presenter's facial expressions, via constructed action, during the role of deaf student reveal that there is a lack of understanding, that the translation and the signing do not make sense, and that the situation is less than successful. The interpretation does not include reported speech in Brazilian Portuguese, but it does provide explanations of what the signer is conveying, using descriptions of the situation.

In terms of person reference, the interpretation contains an overt reference to a first-person-plural subject (*nós surdos*) and then subsequent verb conjugations for first-person-plural forms. In this way, the interpretation is then including the presenter in the group that is being depicted by the presenter. The working interpreter is familiar with the signer, she knows he is Deaf, and she knows that he works at the University that he is referencing in this segment[5]. In this case, the interpretation mirrors others reported in Pereira (2014), where a diversity of first-person forms are used in target language interpretations when deaf signers make references that include others.

Another example of the signer using both hands for communicating different information can be found in (16) below. In this example, the non-dominant hand is used to articulate the sign PROVA

5   We thank an anonymous reviewer who also pointed out that *nós* could be used as a generic first person plural pronoun in Brazilian Portuguese that does not necessarily refer to specific persons, but rather a collective first person plural. We acknowledge that the interpreter might also be using *nós* in this way in (15).

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('exam'), which serves as both a subject or object referent for the other signs that are articulated with the dominant hand. Additionally, the signer uses the hand orientation (palm-side or back of the hand) to reflect two different types of information: that which is visibly seen by the test-taker (palm-side up of the hand, also corresponding to the right side of the signing space) and that which serves as background for the exam (back side of hand, corresponding to the left side of the signing space). In this way, the signer has used signs and space metaphorically, to reflect the experience of a test-taker and how they must access background (lived) experience when they are taking an exam. The set-up of this metaphor is what occurs in (16), in which the signer is generally referring to the experience of hearing test-takers.

(16) *André [5:49-6:01]*
https://utexas.box.com/v/Libras-PortBras-Interpret16

DEPOIS PROVA+ IX-downward(prova) TER IDEOLOGIA (tap back of hand)
after   test   it   have ideology
   PROVA---------------------------   PROVA(back of hand)-----
   test--------------------------------   test----------------------------

(body shift viewing from left)
TER DENTRO HISTÓRIA ACUMULAR DENTRO FORA
have inside   history   accumulate inside   outside
PROVA(back of hand)----------------------
test---

(body shift viewing from right)
VER IX-hand('prova') PERCEBER2 PEGAR+ (from behind) ENTENDER
see   it   perceive   get   understand
PROVA(front of hand)--
test---

VER-to-behind PEGAR
see   get
PROVA(front of hand)----
test----------------------------

Target Language Interpretation:

E a prova então por de traz ela traz toda toda essa história toda essa carga histórica do aluno ouvinte e ele compreende porque por detrás desta prova existe todo seu cotidiano e seu histórico.

And the test, then, behind it there is all this history, the entire history experienced by the hearing

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student, and he understands (the test) because behind the test there exists his everyday life and his history.

The interpretation of (16) also contains information about the metaphor that the signer has created using signs and the signing space. In particular, the interpretation refers to what is behind or on the back of what is seen (*...a prova, então, por de traz..* 'behind the test...'). And, the interpreter relays that this historical experience is something that comes from living it daily. However, one could ask whether the interpretation has managed to capture the vividness of the visual scene that the presenter has laid out, using space and signs metaphorically.

Approximately 30 seconds later, after characterizing the lived experience of the hypothetical deaf student who may or may not be exposed to a signed language during their school-age years, the presenter returns to this same metaphorical use of signs and the signing space. However, as opposed to (16), in this instance, (17), the signer is referring to the experience of the deaf test-taker. There are additional key differences here. First, the signer provides the viewer with examples of constructed action that allow the viewer to get a glimpse of what a deaf test-takers' experience might be like, when actually taking such an exam. Additionally, in (17) the signer indicates that the deaf-test taker has an additional layer of information to process, and that layer is the interpretation that is provided via the service of interpretation for these types of high-stakes tests for university attendance in Brazil. In this case, the signer communicates that the process of taking an exam and having two types of information (that which is visible and that which is accessed via background/experiential knowledge) would presumably be similar for the hearing and deaf test-taker, but unfortunately, it is not.

(17) *André [6:35-6:47]*

DEPOIS CONCURSO PROVA TODA_PROVA SABER PROVA SABER IX-NDH
after   contest   test   all-test   know   test   know   it
                               PROVA---
                               test

INTERPRETAÇÃO TRADUÇÃO SABER CA:thinking IX-behind-hand
interpretation   translation   know   constructed action: thinking   point-behind-hand
PROVA--
test--

GERAL PERCEBER2 (while enacting looking behind the non-dominant hand)
general perceive
PROVA-----------------
test

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IX-1SG PERCEBER NÃO
I   perceive   not
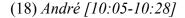
Target Language Interpretation:

Isso acaba sendo uma das problematizações. Quando então pegamos a prova em português lemos compreendemos é feita então a tradução. Mas, se precisa do da essência do da oralidades em lingua de sinais que não se tem nestas provas atualmente.

This ends up being one of the problems. When then we get the test in Portuguese, we read it and we understand it through as a translation product. But, we need the essence of signed language oral tradition that these tests do not have nowadays.

Once again, the interpretation captures aspects of the metaphor that the signer has established earlier in this sequence, and it also provides a contextualization of what might be different for the deaf-test taker, when compared with the hearing test-taker. With regard to the metaphor, reference to the background experience is made with the phrase *...da essência do da oralidades em lingua de sinais* (' the essence of these types of oral language traditions in signed language...'). In this way, the interpretation continues to refer back to the metaphor, not with the physical words of back/ behind what is seen, but rather with referring to the essence of what a lived experience of signed language might provide for a student. The interpretation contextualizes this lack of signed language oral language traditions for all deaf students with the final sentence, which suggests that the exams do not reference these types of lived signed language oral traditions, as they do for hearing test-takers with lived spoken language oral traditions and knowledge.

Finally, (18) reveals that a few minutes later, the presenter makes another reference to the same metaphor, as first described here in (16). Here, the reference goes a step further; it provides a suggested objective of the type of testing that is currently used for all students, which provides benefit to hearing test-takers but not deaf ones. In this example, the presenter is more explicitly comparing the objective of the test across the two groups of test-takers, including which group obtains success with this approach (i.e., hearing test-takers) and which group does not (i.e., deaf test-takers). Once again, in this example, the signer uses the dominant and non-dominant hands and space for representing different aspects of meaning.

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(18) *André [10:05-10:28]*

IX-1SG PERCEBER O-QUE PROVA AGORA IX-1SG VER++ PROBLEMA MAIS
I   perceive   that   test   now   I   see   problem   more

O-QUE CONCURSO PORTUGUES TEXTO OBJECTIVO IX-NDH O-QUE
what   contest   Portuguese   text   goal   it   that
IX-'prova'   PROVA--------------------   PROVA----
It   test   test----------

OUVINTE IX-3SG-POSS TEXTO IX-3SG-POSS OUVINTE NÃO
hearing-person his/her   text   his/her   hearing-pers. not
PROVA---
test--

OBJETIVO IX-3SG-POSS SURDO NÃO OBJETIVO TER ACESSIBILIDADE
goal   his/her   deaf   not   goal   have   accessibility
OBJETIVO--
goal--

PRONTO OUVINTE IX-NDH TEXTO IX-behind hand ACESSO IX-NDH
ready   hearing-pers.   it   text   it   access
PROVA--
test--

Target Language Interpretation:

Então, analisar essa prova, essa tradução da prova escrita em português que tem como objetivo, né, atender os alunos ouvintes, né, e não os alunos surdos, os ouvintes. Os ouvintes tem uma acessibilidade, sim.

Then, to analyze the test, this translation of the Portuguese written test has as its target the hearing students, right? Not the deaf students, but the hearing. The hearing people have the access, yes.

The target language (BP) interpretation of (18) captures various aspects of the segment given in Libras. It contains multiple references to the exam (*a prova*), including referencing a previous discussion provided by the presenter about the additional layer of complexity for deaf test-takers because of the exam interpretation/translation. The interpretation of this segment also clearly

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compares the situation of deaf versus hearing test-takers, which is what the presenter is doing while highlighting the exam experience as a way to consider both groups of test-taker, including common outcomes of the test for each group. The interpretation also includes the key point about translation/interpretation of aspects of the exam by interpreters, and how that also does not provide the same type of experience for the two groups of test takers. Finally, the interpretation contains the discursive *né* ('right?'/'isn't it?'), which is common in BP discourse and used as a tag question of sorts. By doing so, the interpretation manages to capture the meta-commentary provided by the presenter with regard to the actual function of current process of the exams. As such, the Libras and BP contained in (18) provides an example of taking complex (i.e. two-handed) material provided in a signed language and finding ways to communicate that information using the grammar, vocabulary, and discourse features of a spoken language.

4.4 Consideration of BP interpretation for assorted examples from earlier in the paper

In this section, we provide brief analyses of some of the examples provided in the section on referencing in Libras. Here, we focus on aspects of the interpretations, in order to draw attention to the richness of the information contained in the referencing.

In (5), which is repeated here for ease of reading, the signer uses a null subject within the intention of referring to the interpretations provided by interpreters contracted to provide translations for exams. The BP interpretation is below (5).

(5) *André [02;05 to 02:08]*


```
                                        negation___
IX-1-SG VER-neutral-space   Ø  RESOLVER
1-sg      look                  (PRO)
```
I look over (the situation). (This does not) solve (the problem).

Target Language Interpretation:

Pensamos então em averiguar se isso seria satisfatório.

We think, then, to determine if this would be satisfactory.

As can be noted, the interpretation contains the first-person-plural conjugation of the verb PENSAR ('to think') to communicate the presenter's less-than-optimistic view that provision of interpreters may not be the best solution to the problem at hand. In this way, the interpreter is

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giving agency to the question about the success of the current approach and assigning plural agency (PEREIRA; 2014). This interpretation might be deemed as an acceptable and appropriate way to communicate the issue presented by the signer, but it should also be noted that agency is provided in one language (BP), whereas the same agency (as reference) was not provided in the other (Libras).[6]

In (10), which is repeated below, the presenter uses various constructions with null subjects and/or objects, and the interpretation indicates some of that information via overt nominals and demonstratives.

(10) *Marianne [9:02-9:10]*

IMPORTANTE IX-1-SG AJUDAR COMO OUTRO+ ALUNO SURDO
important   1-sg   help   how   other   student   deaf
rs_____
PARTICIPAR ESTUDAR ARQUITETURA VER CLARO APRENDER
participate   study   architecture   see   clear   learn

DESENVOLVER E(então)
develop
This is important, I help other deaf students to participate, to study architecture. They see clearly, they learn and they develop, then.

Target Language Interpretation:

Isso contribui para o conhecimento de outros alunos que vão ingressar no curso de Arquitetura.

This contributes to the knowledge of the other students who will enter the architecture course.

The interpretation of (10) includes reference to the larger concept *conhecimento* ('knowledge'), which seems to be used to refer to the presenter's inclusion of the phrase ….Ø VER CLARO Ø/ [E] APRENDER Ø/[E] DESENVOLVER E(então). As such, multiple Libras verbs are reduced to a single nominal concept in Brazilian Portuguese, with the reference to the deaf students being made explicit, just as the presenter had done so. However, it seems less clear whether the BP interpretation captures important information obtained from the signer's role shift, such as affective meaning (i.e. the excitement of seeing something clearly) that the facial expression (during the shifted role) contributes to the sentence.

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6   In this example, the verb pensamos could theoretically reflect a past-tense reading. We thank one of the reviewers for pointing this out. However, we believe that the interpreter was not intending the past tense reading since the signer was seemingly not referring to an event in the past, but rather a typical type of situation that occurs regularly.

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5. Conclusion/Summary

In this manuscript we examine common referencing strategies used in Libras and Brazilian Portuguese (BP), and we examine how they appear in select segments of interpreted conference presentations (Libras to BP). As predicted by various authors, referencing in signed language is multi-faceted and often context-dependent (CORMIER; SMITH; SEVCIKOVA SEHR; 2015; HODGE; FERRARA; ANIBLE; 2019, LILLO-MARTIN; 1986, 1990, QUADROS; 1995, etc.). The challenge for interpretation from Libras to BP (or any signed to spoken language), is that referencing strategies may not completely align across languages, and some strategies of signed languages are not easily mapped to single lexical items that can be interpreted easily.

There are clearly aspects of grammar that are similar across Libras and BP, especially the use of null subjects and/or objects. Both languages are considered null-subject languages (i.e., *pro*-drop languages), even though overt subjects do appear across both languages to a certain degree. Examining interpretation strategies for referencing when languages align in their features is interesting, since presumably there would be many opportunities for interpreters to provide grammatical constructions in the TL that are similar, in structure, to the SL. However, examining strategies that interpreters employ when languages are unique across modalities (e.g. the use of the non-dominant hand in signed language and the extent to which role shift and constructed action are used in sign) is useful because it allows us to investigate whether interpreters are able to disengage from the form of a language while faithfully rendering a semantically-equivalent message in the other language.

This detailed analysis of several segments of Libras (source language) and Brazilian Portuguese (target language) interpreted texts highlights ways in which referencing is interpreted and a high level of semantic equivalence is achieved. This echoes work of earlier work on interpretation and referencing strategies (e.g., QUINTO-POZOS; MUROSKI; SAUNDERS, 2019). However, the analysis also points out challenges that interpreters face, due, in part, to grammatical differences across languages. In particular, the use role shift and constructed action by a signer can pose challenges for sign-to-voice interpretations, since interpreters must decide how much of the role shift and constructed action to depict in the target language. While reported dialogue after a shift to a new character role could be communicated via reported speech, there are register considerations that the interpreter must take into account. Additionally, constructed action could be challenging to communicate, since the interpreter is faced with what level of detail to provide in the target language in order to faithfully render what could be iconically and metaphorically depicted in sign. The ability to use two hands in sign also allows for the creation of visual-spatial depictions that could be challenging for interpreters. These

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are just some of the linguistic devices that would be fruitful to study in more detail and with other language pairs in the future.

We hope that this analysis of Libras texts interpreted in real time into BP presents the field with questions that can continue to be asked about language structure and language processing. After decades since the first publications of work on Libras by Lucinda Ferreira and colleagues we hope that work of this nature will allow us to continue to push the boundaries of what can be learned by investigating the signed languages that are used by deaf communities, especially how they compare with what we know about spoken languages.

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