

CAUSAL ADVERBIAL HYPOTAXIS IN LIBRAS

HIPOTAXE ADVERBIAL CAUSAL NA LIBRAS

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RESUMO

Esta pesquisa analisa como as orações hipotáticas causais são combinadas na Libras. As premissas teóricas baseiam-se nas teorias de Lehmann (1988) e Hopper e Traugott (1993), juntamente com a linguística moderna da língua de sinais. Ao analisar mais de duas horas de gravações do Corpus de Referência Surda de Libras utilizando o software ELAN, o estudo constatou que a hipotaxe adverbial causal é expressa por sinais manuais ou marcadores não manuais. Especificamente, as orações podem utilizar conectivos manuais como PORQUE, POR-CAUSA, ENTÃO e É, enquanto outras podem ser articuladas pela justaposição de sentenças e pelos marcadores não manuais (MNMs), como o movimento das sobrancelhas e o franzir dos olhos, que indicam a relação causal.

Palavras-chave: Hipotaxe Adverbial Causal. Sentenças Complexas. Marcações Não-Manuais. Surdos de Referência. Libras.

ABSTRACT

This research analyzes the causal hypotactic clauses and how they are combined in Brazilian Sign Language (Libras). The theoretical assumptions are based on theories by Lehmann (1988) and Hopper and Traugott (1993), as well as modern sign language linguistics. By analyzing over two hours of footage from the Libras Deaf Reference Corpus using ELAN software, the study found out that causal adverbial hypotaxis is expressed by manual signs or non-manual markers. Specifically, some clauses may use manual connectors like PORQUE (because), POR-CAUSA (because of), ENTÃO (then) and É (is), while others may be combined by clause juxtaposition and non-manual markers (NMMs), such as eyebrow movement and squinted eyes, that indicate the causal relationship.

Keywords: Causal Adverbial Hypotaxis. Complex Clauses. Non-Manual Markers. Reference Deaf. Libras.

1. INTRODUCTION

This research investigates the combining of hypotactic adverbial causal clauses in Brazilian Sign Language (Libras). Similarly to oral languages, Libras utilizes distinct methods to construct complex sentences, specifically through the integration of manual signs, such as PORQUE (because), POR-CAUSA (due-to), ENTÃO (then) and É (is), alongside non-manual markers and grammatical juxtaposition. This analysis builds upon emerging scholarship in the field, drawing on key frameworks established by Carneiro and Ludwig (2020), Quadros et al. (2021; 2022), and Ludwig, Quadros, and Santos (2022).

This study examines the causal adverbial hypotaxis in Libras, framing the complexity of sign language within the established linguistic continuum between parataxis, hypotaxis, and embedding. Drawing on the work of Carneiro and Ludwig (2020a, 2020b), the research explores how manual signs intersect with non-manual components. A central finding is that Libras achieves causal hypotaxis not just through connectives, but through a sophisticated reliance on grammaticalized non-manual markers, such as squinted eyes, eye blink and, raised eyebrow.

The data for this study on causal hypotaxis in Libras was gathered from a group of four Reference Deaf informants, being two men and two women. This specific corpus was chosen to analyze how causal clauses appear within natural, discursive sign language contexts. The primary objective of the analysis is to provide a detailed description of the linguistic mechanisms used by these signers to express causal relationships.

2. COMBINING ADVERBIAL CAUSAL CLAUSES

The study of combining complex clauses in Libras is grounded in the theoretical frameworks established by Lehmann (1988) and Hopper and Traugott (1993). These scholars propose that complex sentences exist along a gradient continuum, moving from parataxis (independence) to hypotaxis (interdependency) and finally to embedding (integration). This scalar approach provides the necessary foundation for analyzing how Libras combines its own causal relationships.

According to Lehmann's (1988) framework, parataxis is identified as a coordinative mechanism in which sentences are linked without a hierarchical level. It involves a symmetric association of clauses, meaning that each unit remains at the same syntactic level and maintains independence from the others.

Following Lehmann's (1988) approach, hypotaxis is defined by a dependency relationship where one clause functions as a satellite to a central, nuclear clause. This structure provides a contextual background that orients or situates the primary events described in the main sentence. Unlike parataxis, which links equal elements, hypotaxis connects events that exist on different hierarchical levels within a complex clause.

Conversely, Lehmann (1988) characterizes embedding as the dependency of a subordinate phrase that is integrated directly into a main clause. In this arrangement, an embedded clause acts as a modifier for a specific noun phrase, providing detail or clarification for the head noun, or, in certain instances, serves to modify the entire sentence.

Despite being an emerging area of inquiry, studies on complex sentences in Libras have already identified sophisticated construction mechanisms. Recent scholarship on parataxis, notably by Aleixo et al. (2023) and Barbosa et al. (2021), demonstrates that Libras utilizes a systematic blend of manual and non-manual markers. These findings suggest that paratactic organization in the language is governed by a consistent and deliberate syntactic framework.

The organization of adverbial hypotaxis in Libras draws upon a multifaceted range of linguistic tools. While manual connectives serve as overt links between sentences, current scholarship highlights that these lexical items are only part of the system. Instead, the language relies heavily on non-manual markers and syntactic juxtaposition as core grammatical strategies for articulating complex sentence relationships.²

Regarding embedded clauses in Libras, research by Aleixo et al. (2023), Ludwig (2021; 2022; 2023), and Ludwig, Quadros, and Rocha (2024) indicates that manual markers are only used sporadically. Instead, the language favors a combination of non-manual markers, role shift, and recursion as the primary grammatical tools. These resources are considered the foundational mechanisms for managing embedding within this specific linguistic context.

Positioned within the gradient continuum of parataxis, hypotaxis, and embedding, causal adverbial hypotaxis represents a specialized form of clause linkage. Building on the preliminary work of Ludwig, Quadros, and Silva (2022), as well as Quadros et al. (2023), this research views causal hypotaxis as a system where clauses are logically bound through cause and effect relationships. In this

framework, a satellite clause plays the role as a dependent unit, providing the causal background necessary to frame the nuclear event. Crucially, as Lima (2002) notes, this connection is a discursive strategy; it is designed to guide the interlocutor's perception of how two events are interdependent, rather than simply stating an objective fact.

According to Ludwig, Quadros, and Silva (2022), the construction of causal adverbial hypotaxis in Libras involves a dual system of manual and non-manual markers. The authors identify specific lexical items, namely the signs PORQUE (because), POR-CAUSA (due to), and MOTIVO (reason), that function as formal connectives. These manual signs are rarely used in isolation; instead, they are typically integrated with distinct non-manual markers to clearly articulate the causal relationship between clauses.

Beyond manual connectives, these researchers identify juxtaposition and non-manual markers (NMMs) as the primary grammatical drivers of causal hypotaxis in Libras. Supporting this view, Lima (2019) and Quadros et al. (2021; 2023) suggest that when manual signs are absent, the language relies on an iconic structure, ordering the cause before the consequence, as well as prosodic cues. Specifically, non-manual behaviors such as eyebrow movement, forehead furrowing, and mouthing serve as important syntactic markers that define clause boundaries and signal the introduction of new information.

Research by Ludwig, Quadros, and Silva, as well as Quadros et al. (2023), suggests that non-manual markers in Libras often function through simultaneous layering. For instance, a signer might elevate their shoulders while simultaneously producing the sign POR-

CAUSA (due to), while gaze direction and eye blinks act as prosodic delimiters for sentence boundaries. These overlapping resources are vital for interpreting complex structures, particularly when a formal connective is absent and the causal relationship relies entirely on non-manual cues. Additionally, the study notes that causal hypotaxis can be achieved through juxtaposition, where the logical link between propositions is derived from the broader discursive context.

The study by Ludwig, Quadros, and Silva (2022) addresses existing gaps regarding sentence articulation and the diverse array of non-manual markers in sign languages. By analyzing interviews with Reference Deaf participants from the Libras Corpus, the researchers provide a detailed identification of specific non-manual markers, such as eyeblink and head nodding. This analysis explores how these mechanisms function across various discursive contexts, ultimately deepening our understanding of the syntactic complexity inherent in Libras.

Research conducted by Rodrigues and Souza (2019) suggests that the canonical organization of causal structures in Libras often favors postposition, where the causal clause follows the main event. While this arrangement mirrors the typical word order of Portuguese, the authors note that anteposition (placing the causal clause first) is also present in Libras, particularly when formal manual connectives are employed.

3. METHODOLOGY

This paper utilizes data from Reference Deaf participants, from Corpus de Libras.³ The research utilizes data from the National Inventory of Libras, strictly adhering to its established

methodological framework. This standardized protocol governs every phase of the research process, including data collection, archival, transcription, translation, and final validation. By implementing this uniform methodology across all participating Brazilian states, as outlined by Ludwig et al. (2020), the study ensures that the linguistic data remains consistent and highly comparable for analysis.

This study acknowledges the bilingual profile of the deaf participants, for whom Libras functions as the primary language (L1) and Portuguese as the secondary language (L2). Given this linguistic duality, the analysis of complex sentences accounts for potential interlanguage phenomena. As suggested by Ludwig and Oliveira (2024), this perspective allows for an investigation into how prolonged contact between these two distinct languages might influence the syntactic organization of Libras.

The data collection process is conducted within a specialized studio utilizing a four-camera array. These cameras are strategically positioned to capture the multi-dimensional nature of sign language from various perspectives, ensuring high-fidelity visual data. Adhering to the Libras Corpus protocol, this controlled environment facilitates the application of several standardized instruments, including biographical interviews, narrative, and vocabulary elicitation, and both structured and spontaneous conversation (Ludwig et al., 2020).

Following the collection phase, data is archived with detailed metadata to future retrieval. The linguistic analysis is conducted using ELAN (Eudico Linguistic Annotator), a multimodal software standard in both sign and spoken language research. In accordance

with the National Inventory of Libras guidelines, the processing includes the creation of specialized glossing tiers for each participant. These glosses are formatted in uppercase letters to maintain technical consistency across both discursive contexts.

The analysis of Complex Sentence Units (CSUs) is organized through a rigorous classification system based on controlled vocabulary on ELAN. This framework categorizes sentence types into three main branches: Parataxis (including conjunctive, disjunctive, and adversative), Hypotaxis (covering conditional, causal, comparative, temporal, and non-restrictive clauses), and Embedding (encompassing subjective, objective, and restrictive relative clauses). For every category, the study employs distinct analytical tiers to differentiate between manual clauses, which utilize explicit connectives, as well as non-manual ones, which rely on the strategy of juxtaposition.

The research corpus for this investigation into causal adverbial hypotaxis in Libras is composed of interviews with four Reference Deaf informants, two men and two women. This data allows for a detailed analysis of the linguistic mechanisms and the potential variations present in the articulation of causal hypotactic clauses.

This research utilizes a transcription method that moves beyond the isolated examination of causal adverbial clauses. By providing a comprehensive view of the entire signaling environment, the study may incorporate broader discursive data. This approach allows the reader to achieve a holistic understanding of how interactions are structured and how meaning is collaboratively constructed within the discourse.

To ensure transparency and precision, the data presentation includes direct links to video recordings of each Complex Clause Unit (CCU). Each linguistic example is presented through different glosses: Portuguese glosses appear in capital letters, followed by English glosses in lowercase, and a final translation. Furthermore, to maintain syntactic fidelity, any terms omitted during signing but recoverable through the discursive context may be provided in square brackets, clarifying the underlying grammatical structure for the reader.

4. ANÁLISE DOS DADOS

The study of causal adverbial hypotaxis in Libras was conducted through the analysis of four Reference Deaf informants. This group consists of deaf leaders whose signing is regarded as a linguistic benchmark within the Brazilian deaf community. Beyond their high level of fluency, these participants are recognized for their leadership at local, regional, and national levels, ensuring the data reflects a prestigious and representative model of the language.

The linguistic data derived from the processed transcriptions are detailed below:

Table 1 – Data found in the analysis of the interviews

Interviewee	Interview duration	Utterances	CCU	Parataxis	Hypotaxis
F01 – Vilhalva	37 min 22 segs.	27	179	114	140
F05 – Souza	23 min 38 segs.	29	186	108	142

MOS – Albuquerque	35 min 59 segs.	31	282	180	228
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△ Esta tabela possui muitas colunas e foi cortada para impressão. Para visualizá-la completa, acesse o artigo original em: <https://revistatopicos.com.br/artigos/causal-adverbial-hypotaxis-in-libras?noblockage>

Source: Research Data

The research corpus consists of 2 hours, 10 minutes, and 15 seconds of Libras recordings. Within this data, hypotactic clauses emerged as the primary form of sentence combination, appearing in 701 distinct Complex Clause Units (CCUs). The analysis reveals that these units are often multi-layered, with a single CCU frequently containing overlapping instances of parataxis, hypotaxis, or embedding. The following table provides detailed data of the findings specifically related to adverbial hypotaxis:

Table 2 – Quantitative data on hypotaxis found in the analysis of the interviews.

Types of Hypotaxis	Machado	Vilhaiva	Souza	Albuquerque	Total
Causal	51	46	43	48	192
Temporal	53	39	41	75	208
Conclusive	38	33	47	75	193
Conditiona l	12	13	7	23	55
Purpose	11	10	8	12	41

⚠ Esta tabela possui muitas colunas e foi cortada para impressão. Para visualizá-la completa, acesse o artigo original em: <https://revistatopicos.com.br/artigos/causal-adverbial-hypotaxis-in-libras?noblockage>

Source: Research Data

Within the broader scope of hypotaxis, the study identified 188 instances of causal adverbial clauses. A key finding was that many complex sentence units involve multiple, simultaneous hypotactic relations. To address this, the researchers developed a specific analytical tier named Hypotactic Combination. This approach prevents the loss of semantic meaning that would occur if the discourse were fragmented too early. Instead, sentences were first analyzed as a whole within this combination tier and subsequently broken down into smaller constituents while maintaining the integrity of the original context.

The investigation revealed the subdivision of causal adverbial hypotaxis into two modalities: syndetic and asyndetic. The distinction lies in the use of connectives to articulate the clauses: while syndetic sentences are marked by the presence of a manual lexical item, which plays the role of a connective, asyndetic clauses do not require manual signs for their articulation. In the latter, the hypotactic relationship is established by the clausal juxtaposition, combined with non-manual markings. In this way, the logical causal relationship is inferred from the discursive context, in accordance with the propositions of Quadros et al. (2021; 2023). The quantitative data relating to these categories are detailed in Table 3:

Table 3 – Quantitative Data on Syndetic and Asyndetic Causal Hypotaxis

Informante	Syndetic causal hypotaxis	Assyndetic causal hypotaxis	Total
F01 – Vilhalva	28	18	47
F05 – Souza	27	16	43
M05 – Albuquerque	40	10	50
M06 – Machado	42	11	53
Total	137	55	193
Percentile	71,35%	28,65%	100%

Source: Research Data

The research data indicates a clear preference for syndetic structures in causal hypotaxis, which account for 71.35% (137 occurrences) of the total. In contrast, asyndetic constructions represent 28.65% (55 occurrences). A gender-based variation is also observable: female informants, such as Vilhalva (18) and Souza (16), utilize asyndetic structures more frequently. Conversely, male informants, specifically Albuquerque (40) and Machado (42), demonstrate a higher reliance on syndetic sentences marked by manual connectives.

The following section provides a descriptive analysis of both syndetic and asyndetic causal adverbial hypotaxis. We begin by examining syndetic constructions, where the sign PORQUE (because) serves as the primary manual connective. Examples 01 through 04 illustrate how this specific lexical item is utilized to link causal clauses within the discourse.

Sentence 01

MAS LÍNGUA-DE-SINAIS SUPERAR MAIS IMPORTANTE PORQUE EU
PRÓPRIO SURDO EU CULTURA SURDA EU VISUAL VIVER
EXPERIÊNCIA ENTÃO

but sign language overcome more important because I myself deaf,
I deaf culture, I visual live experience then.

*But sign language surpasses (Portuguese), it's more important,
because I myself am deaf, I have deaf culture and I live a visual
experience.*

Sentence 02

PROCESSO ANO-ANO ENTÃO PRECISAR FACULDADE PORQUE
GOVERNO MANDAR OBRIGAR FACULDADE TERCEIRO-ANO NÃO

Process year-year then need faculty because govern demand oblige
faculty third-year no

*As the years went by, I needed to go to college because the
government started requiring a college degree; a high school
diploma was no longer accepted.*

Sentence 03

ENTÃO AJUDAR FALAR REALIDADE PORQUE ANTES ORALIZAR EU
ENTENDER CONCEITO SIGNIFICAR NÃO

Then help say truth because before oralize I understand concept
meaning no

So, (sign language) helps me a lot, really, because before, when I spoke, I didn't understand the concepts and meanings.

Sentence 04

EU USAR TODO-DIA PROGREDIR ENTÃO TODO-DIA PORQUE
TRABALHAR GRUPO SURDO ENTÃO

I use every-day progress then every-day because work group deaf
then

*I use (sign language) every day, because I work with the deaf
community.*

In Example 1, the informant provides a justification for the primacy of Libras over Portuguese, citing its status as their primary language, its cultural significance, and its role in effective communication. Example 2 illustrates a causal link where the signer explains that a university degree was a mandatory requirement imposed by the state government for their continued employment as a teacher. In Example 3, the informant contrasts the sign language and the oral languagem, arguing that sign language facilitates conceptual understanding in a way that oral communication failed to do. Finally, Example 4 provides a direct causal relationship between the informant's daily use of sign language and their professional routine as a Libras professor.

Examples 1 through 4 illustrate syndetic causal adverbial hypotaxis through the use of the sign PORQUE (because). As noted by Quadros et al. (2023), this is considered the prototypical connective for causal relations in Libras due to its high frequency. However, the presence of such a lexical connective is not a requirement for

complex sentence formation. In this framework, the connective does not create the cause-and-effect relationship; rather, it serves to emphasize a link that is already inherently present and inferable from the discursive context.

The analysis of the corpus demonstrates that non-manual markers (NMMs) are fundamental to the prosodic and syntactic structure of causal hypotaxis. In sentences 01, 03, and 04, eyeblinks occur specifically over the connective PORQUE (because), functioning as a boundary marker for the clauses. Raised eyebrows are layered over the causal hypotaxis in sentences 01 and 02, whereas sentence 04 employs squinted eyes across the entire hypotactic segment. Sentence 03 is particularly noteworthy for its productive use of NMMs to create contrast: squinted eyes are used over the clause ANTES ORALIZAR (before oralize), emphasizing the hypotactic temporal clause, while raised eyebrows appear over the segment EU ENTENDER CONCEITO SIGNIFICADO NÃO (I understand concept meaning not). This shift in NMMs produces a prosodic contrast previously documented by Quadros et al. (2023) and Ludwig, Quadros, and Silva (2022).

Examples 05, 06, and 07 further illustrate syndetic adverbial hypotaxis, this time utilizing the manual connective POR-CAUSA (due to):

Sentence 05

EU PERCEBER ALGUM ALUNO RIR POR-CAUSA EU DEFEITO
ORALIZAR

I perceive some student laugh due-to I defect oralize

I noticed that some students laughed because I oralized imperfectly.

Sentence 06

TUDO-DIA CASA COMUNICAR POR-CAUSA LÁ PRECISAR LÍNGUA-
DE-SINAIS

Ever-day home communicate due-to there need sign-language

*Every day (my mother) communicated (with me in sign language),
because she needed sign language.*

Sentence 07

DEPOIS DESCOBRIR SURDO POR-CAUSA TREINAR TERCEIRO-ANO
MAGISTÉRIO

After discover deaf due-to train third-year teaching

*Later I discovered that I was deaf, because I was doing an internship
in my third year of teacher training.*

In sentence 05, the informant describes an experience of social stigma, explaining that his schoolmates mocked him because of his imperfect oral communication, which highlights the peer group's negative perceptions. In sentence 06, the signer relates a habitual action, stating that his mother used sign language daily due to her fundamental need to communicate with her son. Finally, in example 07, the informant recounts the discovery of her own deafness, which occurred because of her participation in a supervised teaching internship at a school with a deaf student.

Sentences 05, 06, and 07 utilize the manual connective POR-CAUSA (due-to) to reinforce the cause-and-effect relationship between clauses. This sign is a recurrent feature in causal constructions in Libras. Its usage aligns with the findings of Rodrigues and Souza (2019), who analyzed this sign under the gloss MOTIVO (reason). Their research highlights a process of grammaticalization, wherein the sign transitioned from a lexical noun into a functional connective, effectively facilitating the articulation of causal sentences.

In sentences 05, 06, and 07, eyeblinks are specifically observed together with the sign POR-CAUSA (due-to). These non-manual markers serve a dual purpose: they actively contribute to the linguistic articulation of causal hypotaxis and act as a prosodic tool to clearly delineate the boundaries between clauses.

In sentences 08 and 09, the establishment of causal hypotaxis is clearly achieved through the use of the manual signs ENTÃO (then) and É (is):

Sentence 08

ESCOLA PRÓPRIO SURDO TER-NÃO LUTAR ESTUDAR COMUNICAR
ENTÃO COMUNICAR-FALTAR QUALQUER APRENDER ENTÃO

School belong deaf have-not fight study communicate then
communicate-barrier any learn then

There were no schools specifically for deaf people, (so) I struggled and studied, because there was a communication barrier to learning any subject.

Sentence 09

EU VIVER APARECER É BATALHAR AÇÃO

I live appear is battle action

I appear in public frequently because I fight and I fight (for the deaf).

In sentence 08, the informant describes a challenging educational environment, explaining that the lack of a specialized school for the deaf forced her to study with intense effort in order to overcome the communication barriers she faced. In sentence 09, the signer clarifies her public visibility, asserting that she appears frequently in public, because she is consistently engaged in advocacy and the development of initiatives for the deaf community.

Sentences 08 and 09 utilize two distinct linguistic strategies characteristic of sign languages: the employment of manual connectives ENTÃO (then) and É (is), alongside the juxtaposition of clauses where the causal link is derived from the discursive context. While these signs are infrequent markers for causal hypotaxis, their use is supported by the findings of Quadros et al. (2023) and Ludwig, Quadros, and Santos (2022), who also report their occasional appearance. In sentence 09, the sign É (is) functions to introduce the causal clause, carrying a semantic weight equivalent to 'that is why' or 'because'.

Sentence 08 contains a dual-layered causal hypotactic structure. The first instance is an asyndetic causal hypotaxis formed by the juxtaposition of the nuclear clause, ESCOLA PRÓPRIO SURDO TER-NÃO (school own deaf have-not), with the clause LUTAR ESTUDAR COMUNICAR (fight study communicate). In this case, the cause-and-

effect relationship is not manually marked but emerges directly from the discursive context. The second instance within the same unit is a syndetic structure, ENTÃO COMUNICAR-FALTAR (then communicate-barrier), where the sign ENTÃO (then) functions as the formal connective to link the communication barrier to the preceding context.

Regarding non-manual markers, the following behavior is observed: in clause 08, in the sentence LUTAR ESTUDAR COMUNICAR (fight study communicate), it is slightly noticeable that the eyes are half-closed; in the segment ENTÃO COMUNICAR-FALTAR (then communicate-barrier), immediately after the connective ENTÃO (then) there is a blink and a raising of eyebrows above this connective. In the rest of the sentence, the eyes return to the previous expression, that is, slightly squinted. Similarly, in sentence 09, in the adverbial hypotaxis, after the sign É (is), the presence of squinted eyes above the sentence segment is noted. There is a change in prosody during the signing that establishes a distinction between sentences within the same complex sentence unit.

Sentences 10 and 11 illustrate asyndetic causal adverbial hypotaxis, a type of clause defined by the absence of manual connectives.

Sentence 10

EU USAR PORTUGUÊS SIM CRESCER ORALIZAR PORTUGUÊS

I use Portuguese yes grow-up oralize Portuguese

I use Portuguese because I grew up speaking it orally.

Sentence 11

EXEMPLO HOJE VIVER AQUI UFSC APRENDER PRECISAR FALTAR
VÁRIOS

Example today live here UFSC learn need miss many-things

For example, today, while I'm here at UFSC, I realize that I'm learning because I need to, and that I feel there are many things missing.

In sentence 10, the informant provides a historical justification for their current linguistic practice, stating that they utilize Portuguese because it was their primary mode of oral communication during childhood. Similarly, in sentence 11, the signer establishes a causal link between their ongoing educational pursuits and a perceived deficit in their knowledge base across various fields.

Both sentences rely on juxtaposition to establish meaning, with non-manual markers (NMMs) serving to emphasize the cause-and-effect relationship. In sentence 10, the nuclear clause EU USAR PORTUGUÊS SIM (I use Portuguese yes) is articulated with raised eyebrows. A distinct prosodic shift occurs in the hypotactic clause CRESCER ORALIZAR PORTUGUÊS (grow-up oralize Portuguese), where the signer changes the prosodic pattern to squinted eyes. Additionally, the eye blink is observed between the two segments, effectively functioning as a boundary marker to delimit the clauses.

Sentence 11 exhibits a prosodic structure very similar to the one identified in the previous example. The initial segment is characterized by raised eyebrows. However, upon transitioning to the causal segment PRECISAR FALTAR VÁRIOS (need miss many-things), the signer shifts to squinted eyes and eyebrows pressed downward. These two cases confirm that a distinct change in

prosodic flow serves to differentiate the core clauses from the causal adverbial hypotaxis.

Consistent with the research of Quadros et al. (2023), as well as Ludwig, Quadros, and Silva (2022), this study confirms that a prosodic shift invariably occurs between the nuclear clauses and the causal hypotaxis. While the specific non-manual markers employed may vary, the most recurrent features include eye blink, raised eyebrows, and squinted eyes. The present findings reinforce the observation that this systematic prosodic behavior is a defining characteristic of causal constructions in Libras.

5. FINAL REMARKS

This article examined the structure of causal adverbial hypotaxis in Libras. Through the analysis of interviews with Deaf Reference Individuals from the Libras Corpus, it is possible to clarify how complex sentences are articulated and the discursive mechanisms at play. The findings demonstrate that cause-and-effect relationships in this context are multifaceted constructions, requiring the integration of both manual signs and prosodic resources.

The quantitative analysis indicates a clear preference for syndetic causal hypotaxis, which accounts for 71.35% of the data. In these instances, the signs PORQUE (because) and POR-CAUSA (due-to) emerge as the primary manual connectives. Conversely, the substantial occurrence of asyndetic structures (28.65%) confirms that juxtaposition is a robust grammatical strategy in Libras. In these cases, the logical causal link is not manually signed but is instead retrieved through the broader signing context.

A primary contribution of this research is the elucidation of Non-Manual Markers (NMMs) as fundamental syntactic components of causal adverbial hypotaxis. Observations indicate that eye blinks, raised eyebrow, and variations in eye aperture function as grammatical delimiters between nuclear and satellite clauses. These prosodic resources serve a critical dual function: they compensate for the absence of manual connectives in asyndetic structures and reinforce the syntactic framework of syndetic sentences.

REFERENCES

ALEIXO, F.; CARNEIRO, B. G.; KHOURI, J. I. B. E.; LUDWIG, C. R.; MACHADO, R. N.; PAULUS, L.; QUADROS, R. M.; ROCHA, A.; RODRIGUES, A.; ROYER, M.; SANTOS, T. C.; SILVA, J. B. SILVA, V. R. Sintaxe da Libras – Articulação de Orações. In: QUADROS et. al. **Gramática da Libras**. Rio de Janeiro: Instituto Nacional de Educação de Surdos, 2023

BARBOSA, J.; CARNEIRO, B. G.; LUDWIG, C. R.; QUADROS, R. M. *Et. Al.* Sentenças. In: BARBOSA, J.; QUADROS, R. M. (orgs.). **Gramática Virtual de Libras**. Florianópolis, 2020.

CARNEIRO, B. G. ; LEÃO, R. J. B.; LUDWIG, C. R.; *et. al.* Inventário da Língua Brasileira de Sinais da Região de Palmas – Tocantins: Metodologia de Coleta e Transcrição de Dados. **Porto das Letras**, ISSN 2448-0819, Vol. 05, N° 01. Jan.-jun., 2019.

CARNEIRO, B. G.; KHOURI, J. I. B. E.; LUDWIG, C. R.; ROCHA, B. S. P.; SANTOS, T. C. Hipotaxe Adverbial de Finalidade na Libras. **Porto das Letras**, v. 9, p. 509-526, 2023.

CARNEIRO, B. G.; LUDWIG, C. R. Sentence Articulation in Brazilian Sign Language – Libras. **DESAFIOS - Revista Interdisciplinar da Universidade Federal do Tocantins**, v. 7, n. 1, p. 64-77, 24 mar., 2020a.

CARNEIRO; B. G.; LUDWIG, C. R. Articulação de Orações em Libras: Um Breve Panorama. *Humanidades e Inovação*. Vol. 7. N. 10., 2020b.

GIVÓN. **Syntax: a functional-typological introduction**. v. 1. Amsterdam/Philadelphia: John Benjamins, 2001.

LEHMANN, C. On the Typology of Relative Clauses. In: **Linguistics**, N. 24, p. 663-680, 1988.

LIMA, A. **Relações hipotáticas adverbiais na interação verbal**. 190f. Tese (Doutorado em Lingüística e Língua Portuguesa) – Faculdade de Ciências e Letras, Universidade Estadual Paulista Júlio de Mesquita Filho, Araraquara, 2002.

LUDWIG, C. R. Sentenças Encaixadas Objetivas na Libras. **Porto das Letras**, v. 8, n. 4, p. 119–143, 2022. DOI: 10.20873-202284-06.

_____. Relative Clauses in Brazilian Sign Language: Non-Manual Markers as a Combining Strategy. **Humanidades & Inovação**, v. 10, p. 130-140, 2023.

_____. Sentenças encaixadas relativas na Libras: as marcações não-manuais como estratégia de articulação. **Porto das Letras**, v. 6, n. 6, p. 205–222, 2021.

LUDWIG, C. R.; CARNEIRO, B. G. ; KHOURI, J. I. B. E. ; SANTOS, T. C. Parataxis, hypotaxis, and subordination in Brazilian Sign Language: a brief introduction. **Linguística** (Porto), v. 18, p. 32-64, 2023.

LUDWIG, C. R.; KHOURI, J. I. B. E. ; CARNEIRO, B. G. 2020. Articulação de Orações em Libras: Um Breve Panorama. **Humanidades & Inovação**, v. 7, p. 153-170, 2020.

LUDWIG, C. R.; LEAO, R. J. B. ; MIRANDA, R. ; CARNEIRO, B. G. ; MAIA, M. I. ; KHOURI, J. I. B. E. ; CRUZ, C. P. ; COURA, F. A. ; FERREIRA, R. A. ; ARAUJO, A. A. ; COSTA, G. S. S. ; BARBOSA, G. O. ; PIRES, C. W. F. ; FAGUNDES, L. Inventário da Libras no Tocantins: Constituição e Coleta de Dados. **Desafios: Revista Interdisciplinar da Universidade Federal do Tocantins**, v. 7, p. 10-26, 2020.

LUDWIG, C. R.; QUADROS, R. M. ; ROCHA, A. Sentenças encaixadas na Libras. **Fórum Linguístico**, v. 21, p. 10455-10473, 2024.

LUDWIG, C. R.; QUADROS, R. M. ; SANTOS, T. C. Hipotaxe Adverbial Temporal na Libras. **Revista Virtual de Estudos da Linguagem**, v. 20, p. 81-104, 2022.

LUDWIG, C. R.; QUADROS, R. M. ; SILVA, J. B. ; NOGUEIRA, R. Inventário Nacional de Libras. **Fórum Linguístico**, v. 17, p. 5457-5474, 2020.

LUDWIG, C. R.; QUADROS, R. M. ; SILVA, V. R. As Marcações Não-Manuais na Hipotaxe Adverbial Causal da Libras. **Quintú Quimün**, v. 61, p. 1-23, 2022.

LUDWIG, C.; QUADROS, R. M. DE; SANTOS, T. C. Hipotaxe Adverbial Temporal na Libras. **ReVEL**, v. 20, n. 39, 2022.

QUADROS, R. M.; SILVA, J. B.; ROYER, M.; LUDWIG, C. R.; CARNEIRO, B. G.; KHOURI, J. I. B.; PAULUS, L.; RODRIGUES, A.; SEGALA, R.; ALEIXO, F. Sentenças. In: QUADROS, R. M. (org.). **Gramática da**

Libras. Editora Arara Azul, 2021.
<https://libras.ufsc.br/arquivos/vbooks/gramatica/> (acesso em 19/06/2025)

RODRIGUES, A.; SOUZA, J. C. Gramaticalização do sinal “motivo” na língua brasileira de sinais: uma análise baseada no uso. **Revista do GEL**, v. 16, n. 1, p. 53-82, 2021. Disponível em: <https://revistadogel.gel.org.br/>

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² For example, for more detailed analysis, see the works by Aleixo et al., 2023; Barbosa et al., 2021; Carneiro et al., 2023; Carneiro and Ludwig, 2020a; 2020b; Ludwig et al., 2023; Ludwig, Carneiro and Khouri, 2020; Ludwig, Quadros and Santos, 2022; Ludwig, Quadros and Silva, 2022).

³ This research has been approved by the ethics committee CAAE No. 17028413.0.3002.5519 and has authorization to publicize the names and images of the informants.