PROSODY IN BRAZILIAN SIGN LANGUAGE – A CORPUS STUDY OF ENEM-2017

PROSÓDIA NA LIBRAS – UM ESTUDO DO CORPUS DO ENEM-2017

PROSODIA EM LA LENGUA BRASILEÑA DE SEÑAS – UM ESTUDIO DEL CORPUS DEL ENEM-2017

Rúbia Carla da SILVA[1]
Ana Paula de Oliveira SANTANA[2]

ABSTRACT: Facial joints reflect on prosodic subcomponents of oral and sign languages. Therefore, it is a research of an applied, documentary, of a descriptive-exploratory character, through the observational method. The objective is to understand which are the facial movements of intonational prosodic manifestation in Brazilian Sign Language and what it means in a narrative context. As a methodological procedure, we opted for a bibliographic review about American Sign Language (ASL) and Sign Language Israeli and the analysis of a question of the High School National Exam (ENEM) of 2017 – the first edition of the test in Brazilian Sign Language. As results, were created a table about elements of superior facial movements and their means, furthermore verify a relevant contribution to research for the linguistic legitimization of Brazilian Sign Language, for the analyses about teaching and learning sing languages, for the signification, comprehension, and production parlance. Consequently, emphasize a new look and research about the linguistic of Brazilian Sign Languages, due to the scarceness of this publication studies.

KEYWORDS: Prosody. Intonation. Sign Language.

RESUMO: As articulações faciais refletem subcomponentes prosódicos das línguas orais e sinalizadas. Trata-se de uma pesquisa de natureza aplicada, documental, de caráter descritivo-exploratório, através do método observacional. Objetiva-se compreender quais movimentos faciais de manifestação prosódica de entonação na Libras e suas significações em contexto narrativo. Como procedimento metodológico, optou-se por uma revisão bibliográfica sobre a American Sign Language (ASL) e a Língua de Sinais israelense, e pela análise de uma questão da prova do Exame Nacional do Ensino Médio (ENEM) de 2017 – primeira edição em Libras. Como resultados, foram criadas tabelas sobre os movimentos dos elementos faciais superiores e suas significações, verificando-se a relevante contribuição da pesquisa para a legitimação linguística da Libras, para estudos sobre ensino e aprendizagem das línguas de sinais para a significação, compreensão e produção da linguagem. Evidencia-se, portanto, a necessidade de novos olhares e pesquisas acerca da linguística da Libras, devido à escassez de estudos publicados.

[1] Federal University of Santa Catarina (UFSC), Florianópolis – SC – Brazil. Doctoral student in the Postgraduate Program in Linguistics. ORCID: https://orcid.org/0000-0003-0285-909X. E-mail: silvablum@gmail.com
[2] Federal University of Santa Catarina (UFSC), Florianópolis – SC – Brazil. Associate Professor in the Speech Therapy Course and in the Postgraduate Program in Linguistics. PhD in Linguistics (UNICAMP). ORCID: https://orcid.org/0000-0002-9508-9866. E-mail: anaposantana@hotmail.com

PALAVRAS-CHAVE: *Prosódia. Entonação. Língua de sinais.*

RESUMEN: *Las articulaciones faciales reflejan subcomponentes prosódicos del lenguaje oral y de señas. Se trata de una investigación de naturaleza aplicada, documental, de carácter descriptivo-exploratorio, a través del método observacional. Se objetiva comprender cuales son los movimientos faciales de manifestación prosódica de entonación en Lengua Brasileña de Señas y sus significaciones en el contexto narrativo. Como procedimiento metodológico, se optó por una revisión bibliográfica sobre la Lengua Americana de Señas y la Lengua de Señas Israelí, y por el análisis de una pregunta del test del Examen Nacional de la Enseñanza Media (ENEM) de 2017 - primera edición en Lengua Brasileña de Señas. Como resultados, fueron creadas tablas a cerca de los movimientos de los elementos faciales superiores y sus significaciones, verificándose la relevante contribución de la pesquisa para la legitimación lingüística de la Lengua Brasileña de Señas, para estudios sobre la enseñanza y el aprendizaje de las lenguas de señas, para la significación, comprensión y producción del lenguaje. Es evidente, por lo tanto, la necesidad de nuevas miradas e investigaciones acerca de la lingüística de la Lengua Brasileña de Señas, debido a la escasez de estudios publicados.*

PALABRAS CLAVE: *Prosodia. Entonación. Lengua de señas.*

Introduction

Despite the intensification of research in Brazil directed to the Brazilian Sign Language (Libras), important gaps remain regarding aspects related to the modality, linguistic structure, stylistic and literary aspects. Most publications are directed to the bilingual and/or inclusive educational aspects of deaf subjects in basic education, to the literacy of the deaf, and another portion directed to the studies of translation and bimodal interpretation. However, in recent decades there has been an important interest from different areas around the Brazilian Sign Language. The field of linguistics has contributed to the characterization of the nature of sign language, related to language acquisition and processing (DUARTE; MESQUITA, 2016).

In the educational field, these discussions reverberate significantly for and in each of the actors involved in the bilingual perspective, such as in inclusive education. Deaf teachers, interpreters, bilingual teachers, Specialized Educational Assistance (SEA) professionals, among other education agents, need to understand in greater depth the issues related to Libras, to understand and consider that the intonation of sign language directly contributes to its meaning. In this way, what is already guaranteed in the legislation, such as Law 10,436/2002 (BRASIL, 2002), Decree 5626/2005 (BRASIL, 2005), Law 13,146/2015 (BRASIL, 2015), is now understood not to only as legal compliance, but as the legitimization and implementation

of the actions of social subjects, thus having its impact on the teaching and learning processes of deaf students.

Given the above, it is from the studies carried out on Phonology that explanations about prosodic structures can be found based on the identification of syntactic and/or morphological aspects, which characterize a phonological regularity as an object of study. The Prosody of and in Sign Languages has increasingly interested different researchers such as Coulter (1979) and Padden (1988) for American Sign Language (ASL); Johnston (1989) for Australian Sign Language (Auslan); Deuchar (1984) for British Sign Language (BSL); and Sandler (1999; 2012) for Israeli Sign Language (FENLON; BRENTARI, 2018; SANDLER, 2012).

In Brazil, we find recent studies about the Prosody of Libras in authors such as Santos (2018), Goes (2019), Souza (2020), among others, approaching the most varied aspects and constituent elements of non-manual expressions. In this sense, understanding the importance of facial articulations as part of language requires understanding that they are part of prosody and are related to other linguistic levels.

To contribute to the deepening of these studies in sign languages, specifically related to Libras, this article presents discussions on one of its subcomponents – intonation. Therefore, this research aims to understand what the facial movements of prosodic manifestation of intonation in Libras and their meanings in a narrative context are. The methodology used was a literature review and analysis of a question from the National High School Exam - ENEM-2017, first edition in Libras.

The Prosodic Phonology

Prosodic Phonology is defined as a formal theory that aims to understand prosodic structures from the identification of syntactic and/or morphological aspects that characterize a phonological regularity as a study application. It describes how the portions of utterances in different languages are manifested, considering the similarities and differences, to define part of the grammar of each language, as to the regularity of the oral expression, determining how the phrasal accent is performed (HORA; MATZENAUER, 2017). In sign languages, these similarities and differences define semantic aspects according to the isolated or combined movement of physical facial parts such as eyes, mouth, cheeks, tongue, forehead, eyebrows and nose.

As Sandler (2012) states, prosody makes it possible for some parts of an utterance to be emphasized, highlighting them in affirmatives, negatives, interrogatives and exclamations. Including assessing the dependence or not on a necessary shared knowledge, as on other pragmatic data. In this way, Prosody investigates not only what is said, but how it is said, breaking down the time, the prominence, the intonation and the relationship between them.

Prosodic Elements

In the case of oral language, when separating the speech, segments can be explored – vowels and consonants; and the prosodic ones – syllables, syllable moras[3], foot[4], tonal group[5], intonation[6], tessitura[7], and tense. However, there are some phonetic properties - suprasegments - that represent segmental duration, rhythm, height, nasalization and secondary articulations, among others, also of interest to prosodic phonology (FENLON; BRENTARI, 2018; MASSINI-CAGLIARI; CAGLIARI, 2001).

However, when it comes to signed language, there is still little interest in observing how the rhythmic passages, the significant modulations of the signs, the emphasis and intonation occur. However, Liddell, Baker and Padden, each with their research on the American Sign Language (ASL), observed that there were differences between the utterances and that these were manifested by configurations of the face, head and body - constituents of the intonational phrase - concomitant with the realization of the signs. From the 1980s onwards, descriptive studies of non-manual facial markers as syntactic and/or prosodic elements began (SANDLER, 2012).

In the meantime, non-manual facial articulations, as markers of prosodic elements, can be understood as a manifestation of rhythm (timekeeping); intonation (face); and prominence (body), correlated to the temporal rhythmic structure, manifested by manual signs. Such prosodic elements mentioned are perceived by the movements of the eyebrows, eyes and head, in addition to pauses and transitions (FENLON; BRENTARI, 2018; SANDLER, 2012).

---

[3] Syllable moras - unit of duration of the metric phonology to analyze part of the syllable called rhyme.
[4] Metric foot – stress group of varied extension depending on the utterance rate. Rhythmic structural unit of accentual rhythm languages.
[5] Tonal group – sound unit to classify a distinctive sequence of tones in an utterance, which may correspond to a phrase, sentence or word, characterized from an intonational point of view.
[6] Tone – lexical feature that concerns the voice pitch patterns of lexical units.
[7] Tessitura – space between the lowest and highest sound. Terms available on *Dicionário de Termos Linguísticos, do ILTEC – Instituto de Linguística Teórica e Computaciona*l. Available at: http://www.portaldalinguaportuguesa.org/

Intonation

The intonation allows for a "rich and subtle mixture of meanings [...] such as additive, selective, routine, vocative, blunt", in the same utterance, but produced with different intonation patterns (SANDLER, 2012, p. 61-62, our translation). Likewise, intonation can be analyzed in sign languages through facial expression, which fulfills the pragmatic functions of vocal intonation, and can be dissociated from the syntactic elements of speech. The difference between oral and sign languages in terms of intonation is that oral intonation markers are sequential, while non-manual facial intonation markers occur simultaneously.

Sandler's example (2012, p. 63) – *YOU INSULT JANE, GEORGE ANGRY* – has two unambiguous meanings that are perceived according to the facial expressions presented. If the utterance is flagged with neutral facial non-manuals, the meaning is of a statement "You insulted Jane and George got angry". However, if the same utterance is signed accompanied by non-manual facial markers such as raised eyebrows and tilted head throughout the sign, and blinking at the junction of prayers, the meaning becomes one condition: "If you insult Jane, George will be angry". Even if there is a specific sign for the conditional "If", its use is not always necessary, being possible to have the same understanding of the condition by the non-manual facial markers presented.

In similar studies with Israeli Sign Language, intonation is perceived in the change of facial articulations between intonation phrases, with a change in the position of the head and body as well. This shows that in sign languages, facial intonation occurs simultaneously with the entire prosodic component, unlike oral languages, when the occurrence is sequential (SANDLER, 2012).

Considering the movements of the head, eyes, eyebrows and forehead, and the displacement of the upper body forwards or backwards, each contributes with its significance to the understanding of a complex componential system of signed languages. These constituents can be characterized with a certain meaning, as proposed by Coulter (1979). As an example, raised eyebrows usually signify dependence and/or continuation (similar to high pitch in spoken languages), or a condition; half-closed eyes mean retrieving information already shared, or a counterfactual conditional; the furrowed forehead, common in questions like "-qu", means assumptions and/or an emotional attitude of the signaler, depending on the context (COUTLER, 1979 *apud* SANDLER, 2012).
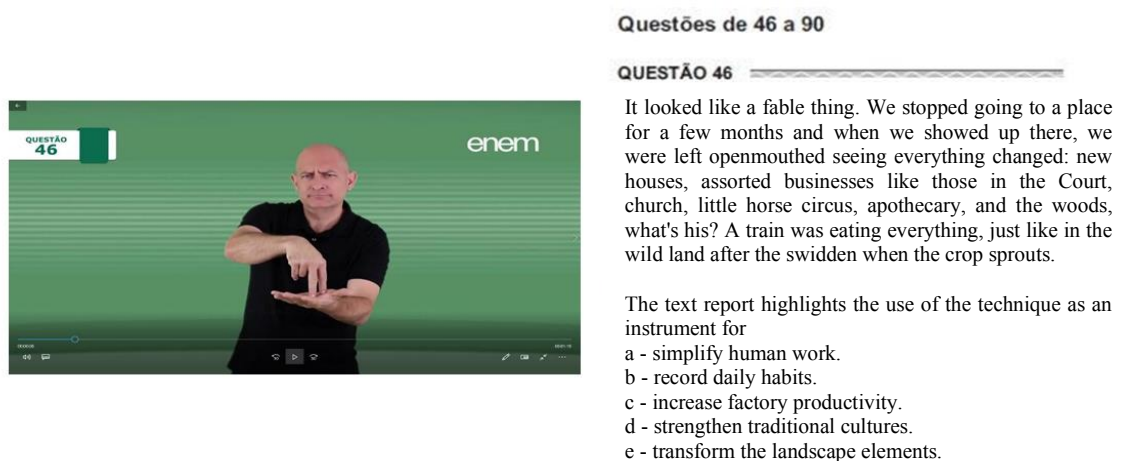
Therefore, considering prosodic studies of great complexity, the intonation manifested in Libras was chosen as the object of study, and consequently, its influence and contribution to the possible meanings produced in the narrative context analyzed.

Methodological assumptions

This is an applied, documentary, descriptive-exploratory study using the observational method. Data generation was performed at two different times: (a) literature review of studies carried out on the prosody of ASL and Israeli Sign Language, presented by Fenlon and Brentari (2018) and Sandler (2012); (b) transcription and analysis of the selection of an ENEM-2017 test question, in Libras, recorded on video, corresponding to the written version in Portuguese.

The first question in the area of Human Sciences and its technologies was selected, named "Questão 46", lasting 1 min 27 sec (Image 1), applied on the first day of the test, belonging to Book 10 Green. Only the statement of the question was considered for analysis, as it is a narrative discourse. The excerpt corresponds to the interval between 6 sec 09 hundredths and 51 sec 36 hundredths, totaling 45 sec 27 hundredths of video for analysis. The excerpts from the alternatives were discarded, as they presented expressive neutrality (without intonation), necessary for the suitability of the evaluation purpose of the exam, but not adequate for the proposed study.

Image 1 – Question 46 – Video and Text

Questões de 46 a 90

QUESTÃO 46

It looked like a fable thing. We stopped going to a place for a few months and when we showed up there, we were left openmouthed seeing everything changed: new houses, assorted businesses like those in the Court, church, little horse circus, apothecary, and the woods, what's his? A train was eating everything, just like in the wild land after the swidden when the crop sprouts.

The text report highlights the use of the technique as an instrument for
a - simplify human work.
b - record daily habits.
c - increase factory productivity.
d - strengthen traditional cultures.
e - transform the landscape elements.

Source: INEP – ENEM (2017); PDF of the test ENEM (2017)[8]

---

[8] Available: http://enemvideolibras.inep.gov.br/2017/videoprova.html?prova=p2. Access: 21 Nov. 2018.

Data were transcribed using the ELAN 5.3 software (EUDICO Linguistic Annotator), developed by the Max Planck Institute for Psycholinguistics. In the case of sign language, it allows the recording of comments, description of the interaction situation, sounds associated with the production of signs, non-manual markings, lines for notes of glosses, translation into another language, among others (CHRISTMANN *et al.,* 2010).

For this study, the tracks (lines) were named with the combination of letters and terms. Five criteria were listed to be transcribed and analyzed: (1) eye movement (MOV-O); (2) eyebrow movement (MOV-S); (3) forehead movement (MOV-T); (4) head movement (MOV-C); and (5) prosodic meaning (SP), divided into four tracks, referring to each facial element, named SP-O, SP-C, SP-S and SP-T.

In all, 224 notes were made on the four non-manual facial elements that make up the prosody, both about their movements and their possible meanings. For the analysis of the video fragment, 326 sec 16 hundredths in annotations were determined, with an average duration of 1 sec 45 hundredths, between intervals of 18 hundredths of a second to 18 sec 72 hundredths.

Results and data analysis

As for the literature review, the upper facial movements presented as prosodic constituents in Israeli and American sign languages were analyzed, researched by Sandler (2012) and Fenlon and Brentari (2018), respectively. Four facial elements and the types of movements performed by them were analyzed, as well as the determination of their prosodic meanings.

In relation to the head, four distinct movements were observed: neutral, longitudinal (rotation), latitudinal (flexion/extension) and lateralization (inclination). As for the eyes, six movements were determined: neutral, longitudinal (lateralization), latitudinal (up and down), closed or semi-closed, widened, blinking (one or two eyes). Over the eyebrows, five movements were listed: neutral, raised (up), frowned (down), alternated, and arched. And as for the forehead, two movements were determined: arched and frowned. This review enabled the creation of Table 1, shown in the results.

To verify whether the facial elements of ASL and Israeli Sign Language are equally manifested in Libras and have the same meanings, the video was transcribed, in tracks of the movements of each non-manual constituent: head, eyes, eyebrows and forehead, considering Table 1 as indicative of possible movements. Then, it was verified whether the possible

meanings presented in the same table were consistent with the context of the question under analysis. The video for question 46 refers to an excerpt from the work "Banzo" (1912, p. 16), by Coelho Neto, a Brazilian realist novelist.

Following the ordering of the tracks, 37 annotations were obtained in the MOV-C track, corresponding in SP-C to the same number of annotations. The average duration of head movements was 1 sec 21 hundredths. As for the MOV-O trail, 46 cases were noticed, also corresponding to the notes of the SP-O trail, with an average duration of 97 hundredths. In the MOV-S and SP-S notes, 20 annotations were also obtained. The average duration of these movements corresponds to 2 sec 25 hundredths but having a maximum duration of 10sec 01 hundredth. And finally, on the forehead analysis, in the MOV-T trail, 12 cases were verified, with an average duration of 3 sec 7 hundredths, but with a maximum duration of 18 sec 72 hundredths. However, on the trail of prosodic meanings corresponding to SP-T, only 6 cases were registered. This is because it has no meaning when the forehead is in the neutral position (no movement).

Head: As for head movements and possible prosodic meanings, 37 occurrences could be verified, divided into: (a) NEUTRAL: 16 occurrences understood as "affirmative", although one of them has a "finishing" characteristic; (b) FLEXION (downward): nine manifestations were perceived, of which seven were verified as "emphasis", and two as "locative function"; (c) RIGHT ROTATION: there were four cases, two as "focus" and the others as "locative function"; (d) RIGHT INCLINATION: four cases were also obtained that meant the "confirmation" of focus or locative function, presented by rotation to the right; (e) EXTENSION (upwards): three situations presented themselves, only one as "interrogative" and the other two as "additive"; (f) LEFT SLOPE: only one case was observed, which corresponds to an assumption.

Eyes: In the transcription and analysis performed of eye movements, in the 46 cases of the MOV-O and SP-O trails, the following data were observed: (a) NEUTRAL: 21 cases were found in which the direction of the gaze is in the center, having as understanding "affirmation"; (b) LATITUDINAL DOWN: 14 cases were obtained, sometimes meaning "emphasis" (six), sometimes "focus" (eight). These meanings were differentiated by the average duration, with the emphasis being longer and the focus shorter; (c) LONGITUDINAL TO THE RIGHT: only one case was found, meaning the occurrence of a "relative prayer"; (d) CLOSE: five events were verified, one at the beginning of the analyzed passage, meaning "acceptance", and the other four indicated "transition" between statements; (e) SEMI-CLOSE: the three occasions perceived indicated the resumption of "shared information"; (f)
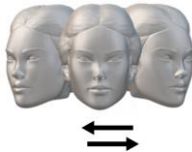
WIDE OPEN: only one occurrence of this movement, evidencing "intensity"; (g) BLINK (consecutively): an occurrence was observed, presenting an understanding of "contradiction".

Eyebrows: About the movements of the eyebrows, transcribed in the MOV-S track, 20 events were found, with the same corresponding amount in the SP-S track, about the meanings. Therefore, four different aspects were verified: (a) NEUTRAL: when there is no movement, eight cases were found, all indicating "affirmation"; (b) RAISED: of the five verifications, two indicated "admiration", another two, "continuation", and one "condition"; (c) FROWNING: a total of six cases were visualized, five understood as "emphasis" and another as a "-qu" type question, possible to be differentiated from other concomitant non-manual constituent elements; (d) ARCHED: when only one of the eyebrows shows movement, an event was obtained, understood as "alternation".

Forehead: For the transcription and analysis of forehead movements, 12 cases were determined, divided into only two circumstances: (a) NEUTRAL: appearing in six moments; and (b) ARCHED: when it is erected, in six more cases. Regarding meanings, only those referring to arching were indicated, understanding that the forehead, in the neutral position, does not determine any understanding. Therefore, two occurrences understood as "admiration", two others as "continuation", one as "dependence" and another as a question of the "-qu" type were verified. A graph was not drawn up referring to the analyzed data about the forehead, as a single movement was found in the passage in question.

From the bibliographical review, Table 1 was elaborated, with the results of the research that presented the characterization of the upper facial movements as prosodic constituents and the possible meanings assumed in American and Israeli sign languages.

Table 1 – Characterization of Upper Facial Movements

ELEMENT	MOVIMENT	MEANING	IMAGE
HEAD[9]	NEUTRAL Without movement Normal axis	Affirmation Finishing	
	LONGITUDINAL **Rotation** To the right To the left	Focus Locative Function Transition Contradiction	

[9] The representative images of the head were created in Paint 3D software, from Microsoft Corporation (2016).

	LATITUDINAL **Flexion/extension** Down Up	**Down** Emphasis Break Locative Function	**Up** Interrogative Negative Additive	
	LATERALIZATION **Inclination** To the right To the left	**To the right** Confirmation	**To the left** Assumption Doubt	
ELEMENT	**MOVIMENT**	**MEANING**		**IMAGE**
EYES	NEUTRAL **Normal focus**	Affirmation		10
	LONGITUDINAL **Lateralization** To right and left	Focus Relative Prayer Transition Condition Locative Function		11 12
	LATITUDINAL **Down** **Up**	**Down** Focus Emphasis **Up** Doubt Reflection Projection		13 14
	CLOSED OR SEMI-CLOSED	Counterfactual condition Shared information		15
	WIDE OPEN	Surprise Intensity		16
	BLINKING **One eye** **Two eyes**	**One eye** Confirmation Acceptance	**Two eyes** Break Contradiction Transition	17
ELEMENT	**MOVIMENT**	**MEANING**		**IMAGE**

---

[10] Available: https://zadbajosiebie.pl/jak-wykonac-prosty-makijaz-oka/. Access: 10 Sep. 2020.

[11] Available: https://www.gettyimages.pt/detail/foto/woman-looking-to-side-close-up-imagem-royalty-free/200478827-001. Access: 10 Sep. 2020.

[12] Available: https://pt.freeimages.com/premium/suspicious-young-woman-looking-to-the-side-1626989. Access: 10 Sep. 2020.

[13] Available: https://br.freepik.com/fotos-premium/macro-close-up-de-olhos-de-mulher-olhando-para-baixo_2350450.htm. Access: 10 Sep. 2020.

[14] Available: https://br.freepik.com/fotos-premium/macro-close-up-de-olhos-de-mulher-olhando-para-cima_2350449.htm. Access: 10 Sep. 2020.

[15] Available: https://revistaglamour.globo.com/Lifestyle/noticia/2015/08/tatica-do-momento-pra-selfie-perfeita-gente-ensina.html. Access: 10 Sep. 2020.

[16] Available: https://www.gettyimages.com/detail/photo/terrified-young-woman-customer-royalty-free-image/173233567. Access: 10 Sep. 2020.

[17] Available: https://www.recantodasletras.com.br/cronicas/4438183. Access: 10 Sep. 2020.

ELEMENT	MOVIMENT	MEANING	IMAGE
EYBROW	NEUTRAL	Affirmation	18
	RAISED **Up**	Admiration Continuation Condition informational dependency Questions-y/n	19
	FROWNING **Down**	Denial Assumption Questions that Emphasis	20
	ALTERNATED **Up** and **down**, concomitant.	Doubt Presumption Reflection	21
	ARCHED Center area up, ends down	Frustration Sadness Alternation	22
ELEMENT	**MOVIMENT**	**MEANING**	**IMAGE**
FOREHEAD	ARCHED	Admiration Continuation Questions-y/n Dependency Surprise	23
	FROWNING	Questions-qu Assumptions Denial Emotion Emphasis	24

Source: Research data

From the analysis of the video, a second table was created, considering the prosodic manifestations in Libras, proving the existence of these manifestations with equal meanings, in a narrative context.

---

[18] Available: https://zadbajosiebie.pl/jak-wykonac-prosty-makijaz-oka/. Access: 10 Sep. 2020.

[19] Available: https://www.pinterest.ch/pin/761952830675913861/. Access: 10 Sep. 2020.

[20] Available: https://ru.depositphotos.com/156528832/stock-photo-man-holding-tweezer-and-frowning.html. Access: 10 Sep. 2020.
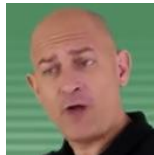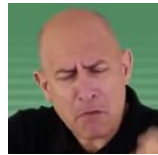
[21] Available: https://pt.srathbun.com/beauty/6098-srosshiesya-brovi-u-muzhchin-zhenschin-i-podrostkov-chto-oni-oznachayut-i-kak-ih-ubrat-navsegda-kak-udalit-srosshiesya-brovi-doma.html. Access: 10 Sep. 2020.

[22] Available: https://www.thecoli.com/threads/faces-of-africa.212015/page-29. Access: 10 Sep. 2020.

[23] Available: https://pt.depositphotos.com/44539155/stock-photo-males-face-showing-surprise.html. Access: 10 Sep. 2020.

[24] Available: https://www.prestigeoralsurgery.com/2014/08/15/what-complications-are-possible-after-the-removal-of-wisdom-teeth/. Access: 10 Sep. 2020.

Table 2 – Libras Facial Movements in Narrative Context

HEAD			
NEUTRAL	LONGITUDINAL (R)	LATITUDINAL	LATERALIZATION (I)
(16)	→ (4) ← (0)	↑(3) ↓(9)	→ (4) ← (1)

EYES					
NEUTRAL	LONGITUD.	LATITUD.	CLOSED/SEMI	WIDE OPEN	BLINKING
(21)	→ (1) ←(0)	↑(N) ↓(14)	(8)	(1)	I (0) II (1)

EYEBROW				
NEUTRAL	RAISED	FROWNING	ALTERNED	ARCHED
(8)	(5)	(6)	(0)	(1)
			–	

FOREHEAD	
ARCHED	FROWNING
(6)	(0)
	–

Source: Research data

From the data generated and the results obtained, one can consider the equality of occurrence of prosodic manifestations in Libras, in relation to those presented in ASL and in Israeli Sign Language. Although each constituent has been transcribed and analyzed individually, it is known that it is in the set of their manifestations that there is an understanding of the contextual meaning, as a prosodic manifesto. Therefore, it was observed which non-manual movements are more evident, when analyzed from this set of constituents, correlated to signaling. Therefore, these sets, from the beginning of an utterance (beginning of signaling) to a pause or transition, manifested by different occurrences (blinking of the eyes,

movement in the opposite direction of the head, or movement to a neutral central position of the head), resulted in 12 intervals named by the letter 'F', followed by corresponding numbering from 1 to 12.

F-1 (6"08-8"12)[25] corresponding to the beginning of the excerpt of the analysis, it presents an affirmative manifestation, initiated by a focused admiration, emphatically permeated in a subtle way (quickly). It can be understood as an initial strategy to attract the attention of the interlocutor(s), as it is a narrative discourse. **F-2** (8"12-14"08) it makes evident two transitions, one related to a past tense and the other to a more current tense. The interval between these transitions promotes in the interlocutor(s) the feeling of being part of the context, by stating that this is known to all.

In **F-3** (14"08-17"72), there is evidence of contradiction, which is intensely and emphatically asserted. Next, in the **F-4** (17"72-18"58) break a reference is made to a question, to clarify the context of the F-3. The answer is understood in **F-5** (18"58-25"55) when one answer the previous question, in an emphatic statement.

About **F-6** (25"55-30"91), a new additive statement with shared information starts. This information sometimes appears as a focus, sometimes it is emphasized and confirmed. The difference between focus and emphasis was perceived by the duration of each occurrence, with the emphasis on a longer time of realization. **F-7** (30"91-35"13) emphasizes the continuity of the affirmative statement, with admiration. This admiration is considered as shared information, again involving the interlocutor(s) in the context.

F-8 (35"13-35"63) is well characterized by a dependency transition, with a conditional. In **F-9** (35"63-37"89), there is the presence of a locative function as an introduction to an interrogative, focusing on the constituent object of the location. And in **F-10** (37"89-43"45), the above question is answered by means of an assumption composed of an emphasized locative function, as an affirmation to the assumption. **F-11** (43"45-49"13) it just continues the previous context, emphatically adding the stated statement of another locative function. Lastly, in **F-12 (49"13-51"37)** there is only confirmation of what was presented, then returning to neutral position.

Therefore, it is possible to affirm that Libras' intonational prosody proves that these facial elements and their movements are relevant for the production, meaning and understanding of language in moments of interaction for the construction of the meaning of the message. They are different non-manual facial constituents, observed by the interlocutor

---

[25] Double quotation marks – represents the term 'seconds', for example in 6"08 it reads six seconds and eight hundredths. Same way it should be understood in the other parts indicative of time.

who receives, as well as by the interlocutor who is expressing a speech, constructing the sense of the language through the expressions of superior facial movements. Attention to these aspects thus contributes to both Libras' proficiency and the construction of meanings among speakers/signalers.

Final considerations

In this study, it was evident that research on the constituent elements of American and Israeli sign languages occurred equally in Libras. We emphasize here the fundamental role of dissemination and clarification on the linguistic structure and functioning of Libras, regarding the prosody of sign languages. It is not only related to affectivity, to the expression of emotions, but Prosody permeates all linguistic levels and links interaction, giving form, meaning and function to the dialogue.

Studies on aspects of Prosodic Phonology support research in other areas, such as Deaf Literature and its universe of investigation in narratives of different discursive genres, as well as research involving bimodal interpretation and translation between sign languages and oral languages. They also instigate new perspectives on the teaching and learning of sign languages, taking over the meaning of signed languages.

When it comes to Education, the research also has implications for the area, as this knowledge contributes to the actors present in schools and universities, contributing to a responsive action regarding bilingual educational plans and curricula, respecting the psychosocial, cultural and linguistic realities of deaf communities.

REFERENCES

BRASIL. **Lei n. 10.436/2002**. Dispõe sobre a Língua Brasileira de Sinais e dá outras providências. Brasília, DF: Presidência da República, 2002. Available: http://www.planalto.gov.br/ccivil_03/leis/2002/l10436.htm. Access: 14 May 2021.

BRASIL. **Decreto n. 5.626/2005**. Regulamenta a Lei nº 10.436, de 24 de abril de 2002, que dispõe sobre a Língua Brasileira de Sinais - Libras, e o art. 18 da Lei nº 10.098, de 19 de dezembro de 2000. Brasília, DF: Presidência da República, 2005. Available: http://www.planalto.gov.br/ccivil_03/_ato2004-2006/2005/decreto/d5626.htm. Access: 14 May 2021.

BRASIL. **Lei n. 13.146/2015.** Institui a Lei Brasileira de Inclusão da Pessoa com Deficiência (Estatuto da Pessoa com Deficiência). Brasília, DF: Presidência da República, 2015. Available: http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2015/lei/l13146.htm. Access: 14 May 2021.

CHRISTMANN, K. E. *et al*. O software ELAN como ferramenta para transcrição, organização de dados e pesquisa em aquisição da língua de sinais. *In*: ENCONTRO DO CELSUL, 9., 2010, Palhoça. **Anais** [...]. Palhoça, SC: UNISUL. 2010.

DUARTE, R. L.; MESQUITA, R. Considerações acerca do *code-bleding* ou sobreposição de línguas e suas relações com o *code-switching*. **Revista Sinalizar**, v. 1, n. 1, p. 37-47, jan./jun. 2016.

FENLON, J.; BRENTARI, D. (toappear). Sign language prosody. *In*: QUER, J.; PFAU, R.; HERRMANN, A. (Eds.), **Routledge Handbook of Theoretical and Experimental Sign Language Research**. 2018.

GOES, A. K. S. **Marcadores prosódicos da Libras**: o papel das expressões corporais. 2019. 65 f. Dissertação (mestrado em Linguística) – Faculdade de Letras, Universidade Federal de Alagoas, Maceió, 2019. Available: http://www.repositorio.ufal.br/bitstream/riufal/5869/1/Marcadores%20pros%c3%b3dicos%20 da%20libras%20o%20papel%20das%20express%c3%b5es%20corporias.pdf. Access: 14 May 2021.

HORA, D.; MATZENAUER, C. L. (org.) **Fonologia, fonologias**: uma introdução. São Paulo: Contexto, 2017. 192 p.

MASSINI-CAGLIARI, G.; CAGLIARI, L. C. Fonética. *In*: MUSSALIM, F; BENTES, A C. (org.). **Introdução à Linguística**: domínios e fronteiras. São Paulo: Cortez, 2001. v. 1-2, p. 105-146.

SANDLER, W. Visual prosody. *In:* PFAU, R.; STEINBACH, M.; WOLL, B. (Eds.). **Sign Language**. Na International Handbook. Berlin: Mouton de Gruyter, 2012. p. 55-76.

SANTOS, R. F. **A autoria na interpretação de Libras para o Português**: aspectos prosódicos e construção de sentidos na perspectiva verbo-visual. 2018. 212 f. Dissertação (Mestrado em Linguística Aplicada e Estudos da Linguagem) – Pontifícia Universidade Católica de São Paulo, São Paulo, 2018. Available: https://repositorio.ufsc.br/bitstream/handle/123456789/192733/SANTOS%20Ricardo%20Ferr eira%202018%20%28disserta%c3%a7%c3%a3o%29%20PUC%20SP.pdf?sequence=1&isAll owed=y. Access: 14 May 2021.

SOUZA, D. T. **A constituência prosódica da Língua Brasileira de Sinais (Libras)**: as expressões não manuais. 2020. 179 f. Tese (Doutorado em Letras) – Instituto de Letras, Universidade Federal do Rio Grande do Sul, Porto Alegre, 2020. Available: https://lume.ufrgs.br/bitstream/handle/10183/217373/001121124.pdf?sequence=1&isAllowed =y. Access: 14 May 2021.

Rúbia Carla da SILVA and Ana Paula de Oliveira SANTANA

How to reference this article