

Brazilian sign language dictionaries: comparative iconographical and lexical study

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Abstract

Brazilian sign language as used by the deaf community in Brazil is a visual spatial modality language; graphic representations of this language usually consist of images in printed and digital dictionaries. In Brazil, the first known sign language dictionary is the *Iconographia dos Signaes dos surdos-mudos* printed in 1875. After this work, other dictionaries followed and they became part of the reference materials used for teaching sign language. Based on the Libras dictionaries that serve as references, the present study aims to analyze and discuss the historical constitution of this publication genre in Brazil. Characteristics and weaknesses related to the iconography and lexicography of these publications are identified as aspects that may interfere with learning signs in undergraduate courses. Regarding how we have approached the theme, this is a qualitative study, supported by documentary methodology. Five Libras dictionaries were selected, based on the criteria that these publications have been selected as bibliographic references in Libras courses at the undergraduate level. The categories for analysis mainly focus on issues related to the representation of the images (iconography) and to the lexical aspects that make up the signs. We were able to see that the selected works present similar characteristics, regarding their presentation, the constitution of the images and lexical aspects that make up the signs, but the dictionaries challenge professionals that work with this genre of illustration, because reading the images is not always easy to accomplish.

Keywords

Brazilian sign language – Deafness – Dictionaries.

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Dicionarização da língua brasileira de sinais: estudo comparativo iconográfico e lexical

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Resumo

A língua brasileira de sinais (Libras) utilizada pela comunidade surda no Brasil é uma língua de modalidade espaço-visual cuja representação gráfica comumente se dá por meio de imagens em dicionários impressos e em meio digital. No Brasil, o primeiro dicionário de língua de sinais de que se tem notícia é a Iconographia dos signaes dos surdos-mudos, que data de 1875. A partir da elaboração dessa obra, outras surgiram e foram se constituindo como materiais de referência para o ensino e o aprendizado da língua em questão. O presente trabalho objetiva, com base em dicionários de Libras que servem de referência, analisar e discutir a constituição histórica do gênero no Brasil a partir da identificação de características e fragilidades em relação à iconografia e à lexicografia de tais obras, fatores que podem interferir no ensino e no aprendizado dos sinais nos cursos de graduação. Do ponto de vista da abordagem do problema, esse estudo é qualitativo e caracteriza-se como documental. Foram selecionados cinco dicionários de Libras, pautando-se no critério da indicação bibliográfica em disciplinas de Libras em cursos de graduação. As categorias estabelecidas para a análise priorizaram a questão da representação das imagens (a iconografia) e os aspectos lexicais que as compõem. Por meio do estudo, observou-se que as obras analisadas apresentavam características bastante semelhantes em relação à apresentação, à constituição das imagens e aos aspectos lexicais, desafiando os profissionais que trabalham com esse gênero de ilustração.

Palavras-chave

Língua brasileira de sinais – Surdez – Dicionários.

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Consulting a variety of dictionaries when necessary is a current practice among users of any given language. This is also common among people interested in specific topics. Regarding language dictionaries, Bagno (2011) states that in Western culture, these have become “one of the main instruments for describing, prescribing, codifying and legitimizing the idealized model of a current language (p. 119, our translation).”

Over time, just as in oral languages, the need to find ways of registering sign languages—languages of visual-spatial modes used throughout the world by deaf communities – has become evident as required for teaching and as a means of divulging sign language among deaf people and interested hearing parties. What Bagno (2011) says referring to regular dictionaries can also be applied to sign language dictionaries, despite the structural peculiarities this genre presents. The publication of sign language dictionaries continues to grow, especially after the Law 10436/2002 was ratified, recognizing Brazilian sign language (Libras) as the official language of the deaf community in Brazil.

Historically, the first sign language dictionary was Flausino da Gama's *Iconographia dos Signaes dos Surdos-Mudos*, published in 1875. The author was a deaf student enrolled in the Imperial Institute of Deaf-Mutes in Rio de Janeiro. The *Iconographia dos Signaes dos Surdos-Mudos* was produced using lithography, a widely used engraving technique in the nineteenth-century. The dictionary had 382 illustrated entries classified according to semantic indexation with verbal descriptions related to each entry, aiming to assist the reader/learner in performing the signs. Leite (according to Gama, 1875) commented that when Flausino saw a dictionary by Pierre Pélissier, who had taught at the Institute of Paris, he “showed an interest in reproducing the stamps for hearing people to talk to deaf-mutes (p. 2, our translation).” Pierre Pélissier's work was decisive and it served as a ‘reference’ for Flausino to elaborate his dictionary. In a recent study, Sofiato (2011) showed that

Flausino's oeuvre is a direct copy of Pélissier's original; it contains the exact same vocabulary, translated from French to Portuguese. At the time, Flausino's oeuvre was produced with the assistance of influential lithographers, among them Eduard Rensburg; the Eduard e Heinrich Laemmert brothers gave him access to the Typographia Universal printing house where the lithographs were carried out.

Over the years of deaf education in Brazil, other dictionaries followed Flausino's. Nevertheless, there was a long interval between the first publication and the later ones, probably due to the inhibition of signing in deaf education that occurred as a result of the 1880 Milan Congress. Felipe (2000) points out that in 1969 new Libras material by Eugene Oats was published, entitled *Linguagem das Mãos*. Even though the author researched Brazilian signing in order to produce the book, the signs in this work suffered influence from foreign sign language (American), as was also the case with Flausino da Gama's material.

For decades, these two books were the only didactic material available for deaf instructors to teach their language and perhaps because these works had a selection of photographs or drawings of LIBRAS signs with explanations, the methodology that continues to be used to teach this language has been merely the presentation of signs with the translation of same (Felipe, 2000, p.1, our translation).

Currently, there are several published Libras dictionaries distributed nationwide, and they have been drafted basically by using images. Our interest in the sign language dictionary genre emerged when we noted that pedagogy and speech-language pathology students had great difficulty in deciphering the images in Libras dictionary entries. Though originally we had not fathomed that producing handshapes represented in images would be difficult, we came to realize that people with little contact

with deaf persons had a hard time understanding the pictures and as a result, they were unable to perform the handshape configurations and movements represented in the signs.

In regards to teaching a language, the adoption of dictionaries is a common practice, and the aim is to provide the teacher with support material and the student with reference material. After the 5.626/2005 Decree was enacted making Libras a curricular requirement, searching for *good* Libras reference material has become a challenging activity for teachers, especially when they are presented with a variety of works on the market, organized in various formats.

For hearing persons that use sign language dictionaries, the entries serve as a memory aid, especially when the teacher, being fluent in Libras – be he deaf or hearing – presents new signs within the conversation context. Students can practice signs they have learned and explore new lexicon. Nevertheless, it is important to remember that dictionaries contain isolated words that are not combined in phrasal constructions common to the language. The attempt to build sentences with Libras signs according to the structure of Portuguese generates grammatical misconstructions, since Libras and Portuguese are construed differently.

In the case of deaf persons, who may be more familiar with the interpretation of drawings of signs, dictionaries can aid in learning new signs or in clarification of meanings, nevertheless, it may be necessary to consult a person who masters signing in order to confirm the correct performance of movements or the meaning of written entries in Portuguese. Even in the digital image era, printed Libras dictionaries are still largely consulted, with current updated editions coming out each year, which shows the relevance of analyzing them.

The aim of the present study of Libras dictionaries used as reference material is to analyze and discuss the historical constitution of the genre in Brazil, based on the identification of characteristics and weaknesses regarding

iconography and lexicography in these works – factors that interfere in teaching and learning signs in undergraduate courses.

According to Turazzi (2009, p. 50), iconography “includes both the art(s) and technique of representation through images, as regards the documentation *per se* (a set of images) resulting from this activity (our translation).” In the present study, we will use the term to designate the visual representations found in Libras dictionaries. According to Borba (2003, p. 15, our translation), the term lexicography as used here refers to

[...] the technique of mounting dictionaries, that is concerned with criteria for selection of vocabulary or sets of entries, the defining systems, the entry structures, the criteria for remissions, for registration of variants, etc.

Neither will a comparison of lexical items between dictionaries nor an analysis of the pertinence of item selection be carried out; the vocabulary is indicated in order to describe the nature of each publication.

Method

Ghedin and Franco (2008, p. 26) have pointed out that from a philosophical-epistemological perspective, methods “propose fundamentals for an exercise in investigation (our translation).” As to the approach, this study is qualitative, characterized as documentary, with the document understood here in a broad sense (Kossoy, 2012), transmitted in both text and image modalities.

In order to select the publications for analysis, four university teachers in three universities (one public and two private institutions in the city of Campinas) were asked to indicate the reference dictionaries they have used in the last five years to teach Libras in Pedagogy and Speech-Language Pathology courses. Based on the teachers’ indications, the

following works were selected: *Linguagem das mãos* (1969); *Livro ilustrado de língua brasileira de sinais: desvendando a comunicação usada pelas pessoas com surdez* (2009); *Comunicando com as mãos* (1987); and *Dicionário enciclopédico ilustrado trilingue: língua de sinais brasileira* (2001). The *Iconographia dos signaes dos surdos-mudos* (1875) was included as a historical parameter, by means of which to verify the constitution of an iconographical tradition, since 10% of the entries in that work are still part of the Libras vocabulary (Sofiato, 2011).

Some teachers mentioned that, after the publication of the *Dicionário enciclopédico ilustrado trilingue*, dictionaries such as *Linguagem de sinais*, published by the Watch Tower Bible and Tract Society are no longer used as a didactic resource. Another work that was not analyzed was the *Dicionário língua de sinais: a imagem do pensamento*, because its indexation system follows a distinct logic of handshape configuration that clashes with what the selected dictionaries use.

In order to guide the analyses, the following elements were described:

- a) General information: year of publication, author/illustrator/photographer, place of publication, number of signs, indexation system, vocabulary, introductory and complementary texts.
- b) Treatment of visual information: representation system, characteristics of figure/reference (gender, aspects and highlighting of facial expressions) and use of graphic resources.

Based on the data presented, the analyses were carried out in order to obtain an understanding of the process by which a Brazilian sign language iconography was constituted, by looking at the works that were produced after the first oeuvre published in the country in 1875, considering their impact on the teaching and learning of Libras.

Having delineated categories formed according to nuclei of meaning, the idea was to establish relations between the data presented and the theoretical references established for this study. Andrade (1999, p. 136) mentions that

[...] the data are not important in and of themselves; their relevance is in the fact that through data, one can come to conclusions, by proceeding to evaluations and generalizations; inferences of causal relations that lead to interpretation (our translation).

Data collected in the works

Book 1: *Iconographia dos signaes dos surdos-mudos*

- *Year of publication*: 1875
- *Author and illustrator*: Flausino José da Costa Gama
- *Place of publication*: Rio de Janeiro (Tipographia Universal de E. & H. Laemmert)
- *Number of signs*: 382
- *Indexation system*: Semantic
- *Vocabulary*: Manual alphabet for deaf-mutes (dactylology), food and table items, beverages and table items, items for writing, classroom items, individuality and professions, animals, birds, fish and insects, adjectives, pronouns and three absolute indicative tenses, verbs, adverbs, prepositions and conjunctions, interjections and interrogatives.
- *Introductory texts*: Flausino da Gama's work contains a brief foreword presenting the purpose of the production. The foreword was written by Tobias Leite, director of the Imperial Institute for Deaf-mutes at Flausino da Gama's time.
- *Complementary texts*: Following the images, Flausino da Gama's work contains a page of explanations on how to perform the signs. These explanations are numbered according to the respective signs, describing them and aiding the reader in understanding them in order to produce the handshape configurations.
- *Representation system*: Line drawing in lithography (occasionally of full body, depending on the specificity of the sign, with some parts highlighted, such as: head, chest, hands, fingers.) The book presents a pictographic representation of how to produce the sign.

- *Characteristics of reference figure:*

Gender: Masculine. There are no female figures in the work.

Human aspect: There is no standard form. The reference figure is presented as jovial in some signs and as old in others. Some signs seem to represent children.

Highlighting of facial expressions: There is an attempt to represent expressive qualities to faces, corresponding to sign meaning.

Use of graphic resources: Arrows, dotted lines, zigzags, straight and curved lines are used.

Figure 1 – Alguem [Any]



Source: (Gama, 1875)

Book 2: *Linguagem das mãos*

- *Year of publication:* 1969
- *Author and illustrator:* Eugene Oates
- *Photographer:* Esdras Batista
- *Place of publication:* Aparecida do Norte (SP)
- *Number of signs:* 1,258
- *Indexation system:* Semantic
- *Vocabulary:* Manual alphabet, verbs, nouns, colors, man and family, food and beverages, animals, world and nature, religion, time, regions of the world (some countries, nationality), Brazilian states (federal territories and capitals) clothing and accessories, sports and recreational games, antonyms, and numbers.
- *Introductory texts:* Eugene Oates' work presents a foreword with guidelines for the reader. The presentation was written by Father Vicente de Paula P. Burnier.

- *Complementary texts:* After each entry, Oates' material includes subtitles that aim to explain how to perform each sign.

- *Representation system:* Using photography, the representation of the sign is presented (handshape representation), with emphasis on certain body parts, such as head, chest, hands and fingers—when relevant to producing the sign in question.

- *Characteristics of reference figure:*

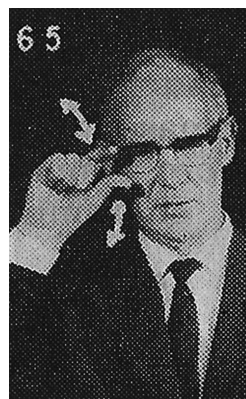
Gender: Masculine. There are no female figures in the book.

Aspect: There is a standard. The reference figure is the same for all signs: a middle-aged man in a black suit.

Highlighting of facial expressions: There is no evident attempt to represent facial expressiveness corresponding to sign meaning.

Use of graphic resources: Arrows, dotted lines, zigzags, straight and curved lines are used.

Figure 2 – Cochilar [To snooze / to take a nap]



Source: (Oates, 1969)

Book 3: *Livro ilustrado de língua brasileira de sinais: desvendando a comunicação usada pelas pessoas com surdez* (volume 1)

- *Year of publication:* 2009
- *Author and illustrator:* Márcia Honora and Mary Lopes Esteves Frizanco. Specialized revision: Flaviana Borges de Silveira Saruta (deaf)
- *Place of publication:* São Paulo
- *Number of signs:* 1,247

- *Indexation system:* Semantic
- *Vocabulary:* Manual alphabet, numbers, calendar, identity, people/family, documents, pronouns, places, nature, colors, school, home, food, beverages, clothing/personal items, professions, animals, human body, hygiene, health, means of transportation, means of communication, leisure/sports, musical instruments, verbs, negatives, adjectives/adverbs, localities, countries/continents.
- *Introductory texts:* This work contains several introductory texts. It opens with a presentation of the content of the volume. Next, there is a text that presents the concept of deafness and summarizes approaches to deaf education (Oralism, Total Communication and Bilingualism); another text highlights the history of deaf education in the world at certain historical times (Antiquity, Modern Age, Contemporary Time – specifically the twentieth-century.) The text ends with the education of the deaf in Brazil and presents current legislation regarding deafness (with emphasis on the Decree 5.626 of December 22, 2005), closing with the concept of sign language and Brazilian sign language.
- *Complementary texts:* After each entry, there is a description of how to perform each sign, using sign language parameters, i.e.: handshape, articulation points, movement and orientation.
- *Representation system:* Linear drawing. It presents the pictorial representation of the sign handshape and, beside it, a pictographic representation of sign meaning (naturalistic drawing). Some body parts of the reference figure are emphasized, such as head, chest area, hands and fingers.
- *Characteristics of reference figure:*

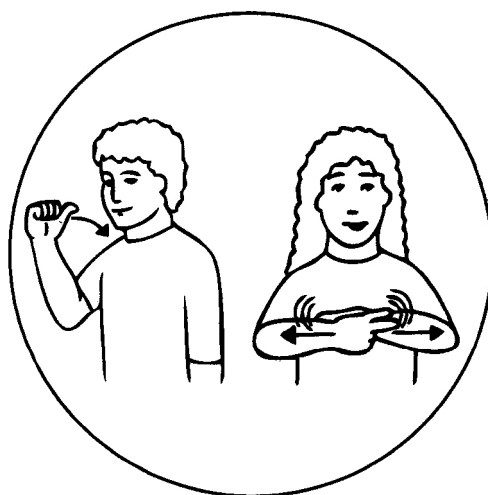
Gender: Male and female, with predominantly male figures.

Aspect: It appears that a standard is followed. The reference figure is jovial in many signs and older in others (for both male and female figures).

Highlighting of facial expressions: There is greater emphasis on facial expressions of those reference figures that require facial expression.

Use of graphic resources: Arrows, dotted lines, zigzags, straight and curved lines are used.

Figura 3 – Bebidas [Beverages]



Source: (Honora; Frizanco, 2009)

Book 4: *Comunicando com as mãos*

- *Year of publication:* 1987
 - *Author and illustrator:* There is no mention of the author. The illustrator is Judy Ensminger.
 - *Place of publication:* Piracicaba, São Paulo
 - *Number of signs:* 574
 - *Indexation system:* There is evidence of semantic indexation, but the book is not subdivided.
 - *Vocabulary:* Manual alphabet, numbers, family, items of the home, beverages, fruit, food, verbs, nature, adjectives, means of transportation, animals, colors, personal pronouns, possessive pronouns, professions, places, common nouns, interrogative pronouns, calendar, religion.
 - *Introductory texts:* The material contains a foreword with comments on deafness and offers guidelines on how deaf children learn.
 - *Complementary texts:* There are none.
 - *Representation system:* Line drawing. The volume includes both pictorial representations of the meaning of the sign and pictorial representations of handshape. The illustrator highlights some body parts such as head, chest area, hands and fingers, when these are relevant to producing the sign.
 - *Characteristics of reference figure:*
- Gender:** In many signs, gender is undefined

Aspect: There is an established pattern in this material. Sometimes, the reference figure is depicted with a complete face and sometimes not, with greater emphasis on other parts of the body.
Highlighting of facial expressions: There is no concern for this aspect, as the reference figure often appears with no face or head.
Use of graphic resources: Arrows, dotted lines, zigzags, straight and curved lines are used.

Figure 4 – Avisar [To tell, to warn]

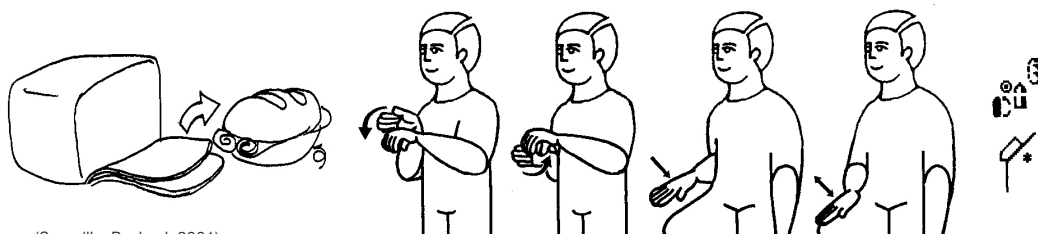


Source: (Esminger, 1987)

Book 5: *Dicionário enciclopédico ilustrado trilingue: língua de sinais brasileira* (volume I & II)

- **Year of publication:** 2001
- **Author:** Fernando César Capovilla and Walkíria Duarte Raphael
- **Illustrator:** Silvana Marques
- **Place of publication:** São Paulo
- **Number of signs:** 9,500
- **Indexation system:** Indexation is carried out in alphabetical order.
- **Vocabulary:** Manual alphabet, numbers, verbs, adjectives, nouns (common, abstract and concrete), adverbs, pronouns (personal, possessive, interrogative).

Figure 5 – Presunto [Ham]



Source: (Capovilla; Raphael, 2001)

- **Introductory texts:** Pretextual elements include: table of contents, acknowledgements, dedication, a foreword by Oliver Sacks, a preface by the president of the *Federação Nacional de Educação e Integração dos Surdos* (Antônio Campos de Abreu) and by the national supervisor of Libras courses (Eduardo Sabanovaite). There is also a presentation by Valerie Sutton. Next comes the abstracts in Portuguese and English and a preface written by the authors that addresses the main aspects of the work, followed by the presentation of the dictionary's vocabulary (volume I: A-L; volume II: M-Z).

- **Complementary texts:** At the end of the volume, the authors present Indexation chapters, with an English-Portuguese Thesaurus and a semantic index of Libras signs, followed by *Chapters on education of the deaf* and *Chapters on technology in deafness*.

- **Representation system:** Linear drawing. It presents the pictorial representation of the meaning of the sign and a pictorial representation of handshape. There is also inclusion of the direct visual writing of the sign shape (in Sign Writing).

- **Characteristics of reference figure:**

Gender: Male.

Aspect: The reference figure is standardized.

Highlighting of facial expressions: There is an attempt to make evident the facial expression that accompanies signing.

Use of graphic resources: Arrows, dotted lines, zigzags, straight and curved lines and other graphic symbols used in Sign Writing are used.

Analysis and discussion

Authorship of works and illustrations

Considering that Libras dictionaries differ from oral language dictionaries because they are generally fully illustrated, in this category, we underscore the role of the illustrators or photographers that have carried out the visual representations in the selected works. When planning to produce a sign language publication, one of the priorities that the author needs to think about is choosing a competent professional to produce the illustration of the material, respecting all the intrinsic characteristics of this visual-spatial language. The choice must be carefully conducted because, besides the poetic liberty conferred to each participant during the preparation of such a work, in this case, one must consider the purpose of the publication, i.e.: designing information visually that has been established by convention. When looking at this requirement, we understand that the task is not quite as simple as some authors choose to believe.

When referring to images that have instructional objectives, i.e., an explanation that is directed towards an aim, it goes without saying that the image represent reality as closely as possible, in order to enable reading and apprehension of the message. In this sense, instructional images and advertising images have something in common: a clear intent; for this reason they should be primarily aimed at communication and destined to public reading (Joly, 1996).

We were able to see from the inventory we carried out that in some works, the illustrator's name is indicated, but often it is not highlighted, despite the fact that the illustrator's participation is a *sine qua non* condition for creating this kind of publication. Without the illustrator's contribution, it would be impossible to produce sign language dictionaries.

In Gama's pioneering work (1875), the deaf man Flausino da Gama assumed

the role of both author and illustrator. In the publications by Oates (1969), Honora and Frizanco (2009) and Capovilla and Raphael (2001), authorship is undertaken by hearing people. However, in Oates (1969), the name of the photographer that took the pictures representing the signs is mentioned inside the book. In Honora e Frizanco's publication, the name of the illustrator is mentioned, but not on the cover, though the name of a specialized reviser, identified as deaf, is on the cover. There is no mention of authorship in Esminger's (1987) work, though the illustrator is indicated. In Capovilla and Raphael's (2001) dictionary, the authors names are on the cover, while the illustrator's name is inside the book. There is no mention of the names of the deaf collaborators that participated in producing the material.

From what we were able to observe, the illustrator's name is not always present on the cover along with that of the author. However, we also ascertained that in three of the dictionaries, deaf persons participated: in one, as author and illustrator; in the others as participants in producing the books. Since these works concern sign language, the acknowledgement of deaf persons as revisers or authors seems highly interesting for two reasons; firstly, because sign language is considered the natural language of deaf persons; and secondly as a consequence of the first, because they are able to evaluate the greater legitimacy of some linguistic levels that make up the language, such as the phonologic level. The phonologic level of Libras includes the following parameters, according to Fernandes (2003): handshape configuration (the shape the hand assumes to produce the sign); sign localization; hand movement and orientation of the palm(s) of the hand(s). When it is represented pictorially, this parameter must be as precise as possible, in order to assure good understanding of the sign. Thus, it goes without saying that a native signer would be better able to produce the sign than a hearing person learning Libras.

Regarding the elaboration of a sign language dictionary, Capovilla and Raphael (2001, p. 30, our translation) argue that hearing people are not

[...] the conquistadors that master and unveil the mysteries of deaf singing; but rather, it is they, the Deaf, who [...] bestow on us the revelation of the most intimate secrets of their Sign.

Thus, we stress that the participation of the deaf is essential. Nevertheless, based on the analysis we carried out, we noted that this does not often happen.

Presentation of the manual alphabet (dactylogy)

During the analysis, we observed that the first content that is presented in the chosen dictionaries is the manual alphabet or dactylogy. When a dictionary is adopted to support teaching, the manual alphabet constitutes a kind of introit to the study of sign language, because it is the first content that is presented. Gesser (2009) defines the manual alphabet as a code that represents alphabetical letters. Generally this kind of alphabet is used for spelling proper names of people, places and also in the absence of specific signs. In Brazilian sign language, there are 27 handshapes, including Ç, that are part of the manual alphabet, each one represented by a letter from the alphabet of the Portuguese language. The use of spelling presupposes literacy, since the speller must be literate in order to understand the code and make use of it.

In the five publications we investigated, four of them represent the manual alphabet using line drawings; Oates' (1969) work is the only one in which the alphabet handshapes were photographed. Both in the drawn representations as well as in the photographed images, it is clear that each illustrator or photographer made a choice regarding hand position. The correct

representation of handshape configurations is challenging, as there are many ways to portray each configuration, i.e., depending on the illustrator, the position of a given handshape is not standardized according to his position in relation to the sign and to the graphic material chosen for the depiction. Some choose to draw or photograph the hand from the position it assumes when signing, while others prefer to draw from an angle of vision that facilitates learning the sign. Sometimes these choices hinder the Libras learner's efforts, when no mediator is present to clarify the correct position for producing the manual sign. This aspect denotes that the representation of handshapes that correspond to the manual alphabet is not easily carried out, requiring a qualified illustrator who is capable of depicting the relevant details according to the convention that has been established for this specific alphabet.

The difficulty in representing finger position for some letters in the manual alphabet helps clarify this kind of occurrence. Some illustrators draw specific letters with fingers slightly apart, while others represent these same letters with fingers together or in different positions (the palm of the hand forward or in profile). This happens usually when representing *F*, *H*, *Q*, and *T*. As a result, the reader becomes uncertain about the correct way to produce the sign. With no fluent Libras mediator, it is difficult to correctly interpret the images.

Indexation system and composition of entries

Buscato, Garcia and Pelachin (1998) believe that people commonly think of a dictionary as a list of words with their respective definitions. Nevertheless, based on information about how dictionaries are organized, the authors show that it is possible to consult them more efficiently. Strictly speaking, in dictionaries in the Portuguese language, indexation of entries is done alphabetically.

The indexation of the works by Gama (1875), Oates (1969), Honora and Frizanco (2009) and Esminger (1987) follow another criteria. Our study showed that the criteria these works chose is semantic grouping. Each semantic group chosen by the dictionary author is presented by means of entries without definitions, uses, derivatives or grammatical classification, as often occurs in dictionaries of oral languages. The only dictionary we found in which indexation follows the criteria of alphabetical order was Capovilla and Raphael's (2001), and in this case, each entry also includes a definition. Furthermore, in this publication, the entry is also presented in English. Sign Writing – a system for direct visual writing of signs in order to read and write Libras signs – is introduced.

The authors propose a specific nomenclature for describing the different ways signs are presented:

1. Pictorial representation of meaning, depicting what the sign refers to; 2. Pictorial representation of the sign configuration that portrays the handshape composition of signs [...]; 6. A description of the handshape that describes in a detailed and systematic way the articulation of hands and arms, the orientation of palms, the type, direction, frequency and breadth of movement involved, and the associated facial expression (Capovilla; Raphael, 2001, p. 40, our translation).

In order to understand the indexation system for each dictionary that was analyzed, we present the table 1.

We can see that Capovilla and Raphael (2001) contemplate all of the listed aspects in their aim to present Libras in a broad spectrum. Honora and Frizanco (2009) follow the same tendency, though in a more elementary way

Table 1 – Indexation

Characteristics	Entry in Portuguese	Entry in English	Pictorial representation of the sign	Pictorial representation of handshape	Description of handshape
Book 1	X	-	-	X	X
Book 2	X	-	-	X	X
Book 3	X	-	X	X	X
Book 4	X	-	X	X	-
Book 5	X	X	X	X	X

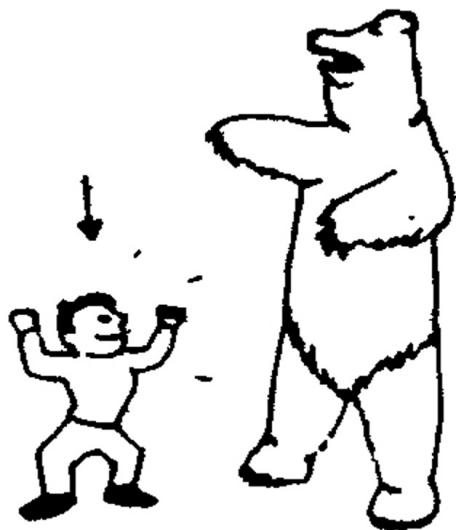
Source: Gama (1875); Oates (1969); Honora; Frizanco (2009); Ensminger (1987); Capovilla; Raphael (2001).

when compared to the work mentioned earlier. It is interesting to report that all of the works that were analyzed present a pictorial representation of the handshape configuration, a fact that is expected for a visual-spatial modality language.

Gama's dictionary does not show the pictorial representation of the meaning of the sign. It seems that this type of representation aiming to clarify sign meanings for those who are not literate appears later on. Nevertheless,

this kind of representation of meanings of signs undertaken with drawings does not necessarily manage to express exactly what the sign is referring to. In the example that follows (figure 6), we can see that it is difficult to understand what the image aims to convey because of the way it was presented by the illustrator. There are a number of ways to interpret the picture of the bear in front of a boy with arms raised.

Figure 6 – boy facing bear



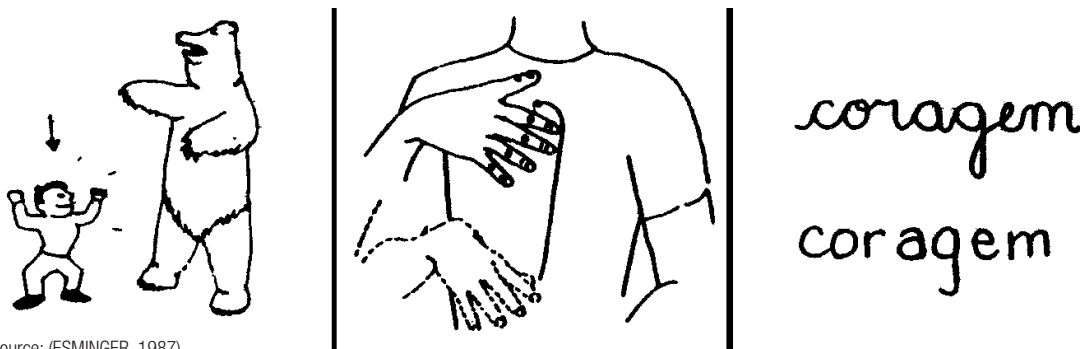
Source: (ESMINGER, 1987)

Let us look at the use of hybrid resources and how the meaning is interpreted.

In this case, multiple modes aim to enable understanding, by representing an abstract ideal of courage by using a narrative context in which a boy courageously faces an animal much bigger than he is.

Most of the analyzed works also present a description of the sign shape. This aspect emerges to complement information and to aid the reader in his efforts at interpreting the instructions contained in each entry image. The association of images to text that explain how to produce the sign is understood as a kind of interpretive solution on the part of the organizer for this kind of material. The reader who can access written language can benefit from the resource, though the same cannot be said for those who are not literate.

Figure 7 – Courage [coragem]



Source: (ESMINGER, 1987)

At any rate, we verified that hybrid visual and textual resources are present in all analyzed works.

The constitution of images and the use of specific graphic resources

The images in the works by Gama (1875), Honora and Frizanco (2009), Esminger (1987) and Capovilla and Raphael (2001) include line drawings. The only publication using photographed images is the one by Oates (1969). According to Reily (2004), the visual

image “is a semiotic vehicle and as such, as an instrument, it can transmit knowledge of high or low quality.” We stress the role of the illustrator in sign language dictionaries or manuals – material that is primarily of instructional nature. They have a responsibility to promote and enable learning through instructional figures. Strictly speaking, the dictionaries that were selected in this study elect a reference figure, a kind of *model* for demonstrating the way the signs should be performed. These reference figures are generally male. Only in Honora and Frizanco (2009) are there female figures that alternate with male figures.

We also observed the abundant use of graphic resources. In Libras this is justified by the fact that almost all signs are produced with initial or continuous movements. The graphic representation of movement is a significant challenge for illustrators and photographers of this kind of material. Gombrich (1999) has said that this task is further complicated because the draughtsman needs to transform a flux of movement into a sequence of fixed positions. When the images are produced in photographs, the difficulty relates to capturing the movement produced by the hands while demonstrating the effect of continuity between images, since they become congealed.

Moving from three dimensions to two dimensions requires the use of techniques that are of the drawing and photography domain. In Libras materials, the solutions illustrators and photographers have encountered are related to using graphic resources superimposed on the image, the aim of which is to clarify the direction and quality of movement. Thus, arrows are included in many illustrations, which also act as vectors, indicating the direction that should be obeyed in order to correctly produce the sign. There are other resources that are incorporated in order to demonstrate movement, such as wavy lines, zigzags, circles and drawings of the trajectory of movement using dotted lines. Sometimes the dotted line intends to demonstrate the initial point of movement for performing the sign and so on, through a sequence of images.

Using graphic resources does not necessarily guarantee success during the attempt to interpret and produce manual signs on the part of the learner of Libras, since, in the case of signing, the reader's repertoire in relation to reading visual codes, just as in his individual interpretation, has significant impact when in the act of producing a sign from a graphic model.

Another parameter that has been incorporated into Brazilian sign language according to Gesser (2009) is facial expression

(head movement, eyes, mouth, eyebrows etc.) Both facial and body expression are grammatical elements that are part of sign language structure and they can act as lexical elements, modifying the meaning of the sign when necessary. In the works by Gama (1875), Honora and Frizanco (2009), Esminger (1987) and Capovilla and Raphael (2001), facial expression is present in the reference figure, as an attempt to emphasize meanings that correspond to the sign entries. However, in the work by Oates, the reference figure does not modulate the facial expressions that accompany the sign meanings, and this hinders the reader's interpretation and attempt to produce the sign. Apparently, the illustrators and photographers that were called upon to elaborate the sign language works are unaware of the importance of facial and body expression during signing. This aspect is quite relevant and is present in all communicative situations. We can even say that when sign language users are in communication, be they deaf or hearing, understanding the message depends highly on the scenic composition that is laid out. Hands signs and the body, through facial and body expression, confirm the meaning attributed to the sign being performed. Thus, we stress the importance of the illustrator or photographer knowing the parameters that make up sign language in order to adequately represent them.

Inclusion of introductory and other texts in Libras dictionaries

Most of the analyzed works contain introductory texts addressing issues related to deafness, but the nature of these texts varies according to the publication. In Gama (1875), Oates (1969) and Esminger (1987), there are forewords that aim to present the books and offer guidelines to facilitate communication between deaf and hearing people, hearing parents and deaf children. They also include terms that are no longer used in the field of deafness, such as mime, deaf-dumb, unfortunate people, gestures, mime language, among others.

This is understandable when we consider the time when these works were produced. After many studies and investment of researchers in the field of deafness, today such terminology is deemed inappropriate, though it still emerges in common usage. According to Gesser (2009, p.21), when people use terms such as these, there is implicitly a prejudice associated to

[...] the idea that many hearing people have about the deaf: an vision based on abnormality, by means of which the most a deaf person is capable of expressing is in the form of indecipherable pantomime that is only understandable among themselves. Little wonder that pejorative names such as *abnormal*, *disabled*, *feeble-minded*, *dumb*, *deaf-dumb*, *dummy* have been wrongly attributed to these individuals (our translation).

The publications by Honora and Frizanco (2009) and Capovilla and Raphael (2001) show a different approach. Besides presenting the correct terminology that should be used when referring to the deaf and issues regarding their language, the opening texts examine various topics. Honora and Frizanco (2009) mention the history of deaf education on an international and national level; the authors present the educational approaches of the field of deafness and they describe relevant public policies. At the end, they provide a list of websites, films and books that address the issue of deafness.

Besides the foreword and presentations written by professionals in the field, Capovilla and Raphael's (2001) work has two chapters that aim to aid the dictionary user. At the end, it includes chapters on deaf education and deaf technology.

It is interesting to note that all the publications have introductory texts and this aspect has been perpetuated, with clear improvements, if we take into account the first work produced in Brazil. The question that emerges is: why do the works that aim

to teach Libras include these texts and what is their aim? It seems that, besides the alleged intention of teaching Brazilian sign language, the authors presume that the reader needs to be instructed on the history of deaf education and on the characteristics of the language in question, which suggests that the function of the dictionaries is related to the intention of teaching and divulging Libras.

Furthermore, we would like to make a parallel with another genre of instructional material. Based on books that are meant for those who practice origami, a Japanese technique that consists of the *art of paper folding*, according to Jackson and A'Court (1996). Many of these reference books contain instructions that explain how to fold paper in a number of ways.

Jackson and A'Court (1996) explain the various symbols used in this technique and they add that they can be found in most origami books, no matter the language in which they have been written. Such standardization aims to make the procedures for performing the technique *universal* so that enthusiasts the world over can engage in paper folding, using whatever book they wish, with a variety of *models* and sequences.

As we can see, the exploration of the procedures for using the material occurs before the reader handles the book, and the aim is to provide full autonomy to anyone who wishes to do paper folding, a task that is not always easy, depending on the choice of subject or theme.

Regarding Brazilian sign language, we note that the inclusion of subtitles for interpreting graphic marks – such as dotted lines and arrows – as well as wavy lines is not valued, except in the work by Capovilla and Raphael (2001), which includes the Sign Writing system. Differently from what occurs in the material intended for teaching origami, also produced by means of images, we did not find a glossary with explanations regarding the meaning of the graphic resources and their use in the works under investigation. There seems to be

a discrepancy in the opening presentations or in the introductions of the Brazilian sign language material, since there is no standardization of graphic indicators that might aid in the interpretation of the intensity of movements in signing and in the positions for beginning and ending the sign during performance.

Looking at the works over time, there appears to be a tendency for the Libras dictionaries to become more complete, with the inclusion of texts such as described earlier. Because these are materials that have an instructional purpose and because Libras is a language that presents itself in another modality as compared to oral languages, the inclusion of such texts has a clearly didactic function: to instruct the reader about the linguistic peculiarities and complexities of the language in question, beyond mere vocabulary. Capovilla and Raphael (2001, p. 31, our translation) underscore that “dictionary producers have a noble and prickly task”. Regarding Libras, the challenge is even greater, due to the way this language is constituted and to the aspects presented earlier.

Final considerations

The adoption of Libras dictionaries occurs with a didactic purpose in courses that prepare teachers and speech-language pathologists. In such contexts several of the difficulties presented throughout this study related to Libras learner’s attempts to read and produce signs tend to emerge. Despite the fact that there are currently available other media for dictionaries, such as virtual media, it seems that there is still a preference for printed material that is easier to consult and to transport.

The use of this kind of oeuvre is justifiable because it contributes to support the construction of a new network of linguistic knowledge, as Coroa (2011) argues, though in the case of Libras, the vocabulary is presented only as pictorial representation in most of the cases that were analyzed.

The purpose of this study was to demonstrate the historical constitution of the genre and to reveal weaknesses and challenges that present themselves to Libras learners, regarding learning signs in dictionaries. Furthermore, the aim was to demonstrate solutions found or not found by authors and illustrators, in order to understand the workings of instructional images related to sign language. The issues that have been made explicit throughout the study may serve as parameters for choosing and assessing the *best* reference dictionaries for those who are interested in general, and for undergraduate courses that provide Libras courses.

Based on the results of this study, we underscore that the elaboration of dictionaries that intend to promote free access to all to Libras vocabulary is quite challenging, given the complexity of the genre, as Capovilla and Raphael (2001, p. 31, our translation) remind us:

Transmitting and understanding, precisely, the linguistic meaning and usage of thousands of signs are complex endeavors that require many approximations and approaches, attempts and near hits, editions and re-editions in search of corrections, precision and completeness.

The elaboration of sign language dictionaries is a problem that has been faced since the first attempts at representing this language, thus it is a historical challenge. This challenge becomes evident when Libras learners attempt to learn signs on their own and fail. Without the presence of a mediator, reading the image and producing the signs can often lead to mistakes.

The study shows that throughout the long history, an iconographical tradition for designing Brazilian sign language dictionaries has been in the making, regardless of the illustrators’ differences in style, and some characteristics of Gama’s first dictionary of 1875 still endure in the new Libras

dictionaries. In this sense, we highlight the use of the reference figure, the presentation of the manual alphabet in the beginning, the similarities regarding indexation criteria, the introductory texts, the use of pictographic representation of sign meaning, the graphic representation of how to produce the sign and the use of graphic markers, the purpose of which is to show the *movement* parameter in signs.

The factors that interfere directly in the iconography of sign language deserve special attention on the part of those involved in the issue of pictorial or photographic representation in dictionary creation, since we believe that, more and more, this kind of work will be implemented in undergraduate courses due to the requirement of Libras as a

compulsory subject in some courses. This is also true for schools in which deaf students are enrolled, especially in bilingual education, where both Brazilian sign language and the Portuguese language are considered languages of instruction. Considering the various issues involved in the area of deafness, and the efforts for higher quality in teaching, we understand that the investment in creating good dictionaries can significantly contribute to the learning of Libras by future teachers and health professionals.

We hope that this discussion may serve as motivation to future investments in constructing Libras dictionaries for those artists who decide to embark upon this delicate task, leading to easier learning processes for those who wish to master this language.

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