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TWO MODES OF VISUAL COMMUNICATION: PICTOGRAMS AND BRAZILIAN SIGN LANGUAGE - LIBRAS

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Abstract: Pictograms and Libras - Brazilian Sign Language are two forms of visual communication. While pictograms are expressed through form, especially graphic, sign languages are materialized through the drawing of hands in space. This article describes the similarities between these two modes of communication, in terms of the common characteristic of iconicity.
Keywords: Pictograms; Brazilian Sign Language; Iconicity, Communication.

INTRODUCTION

Communication between men takes place through a symbolic process in which stimuli - mainly visual and auditory - play the role of messengers carrying meaning, insofar as these stimuli are socially used and interpreted by humans as signic mediators of concepts (objects, ideas) that physically sign in communication, but that represent, abstractly, in thought.

When these signs are regulated by rules of combination and these allow communication to take place with regularity and prediction, independently of the communicating beings, they become linguistic signs and, as in every living language, they are transmitted from generation to generation and renewed by their practitioners.

As visual communication practices, we are talking about road, urban or architectural signing systems; visual identification systems for institutions; of various forms for communication; journalistic and scientific infographics; finally, of shapes and graphic messages that amplify the natural language, such as pictograms. And we are also talking about signs - Brazilian Sign Language[1] that, submitted to other grammatical elements, allow the deaf to develop their own culture, independent of oral culture.

Among the properties of signs, one of the most relevant is their iconicity[2], that is, the characteristic that refers the interlocutor to the recognition of the same visible or visible properties of the referent that the sign intends to represent. According to Capovilla:

> The degree of iconicity of a given sign corresponds to the degree to which the meaning of that sign can be considered admissible and guessable from the form of that sign. A sign is iconic when its meaning is considered admissible and can be guessed at (CAPOVILLA, 2020, p.270).

This work aims to describe the design of pictograms in the three dimensions that condition the process of meaning of any graphic sign: (a) the pragmatic dimension (for what and for whom to say?); (b) the semantic dimension (what to say?) and (c) the syntactic dimension (how to say it?). Then, compare the pictogram design to the iconicity of signs in Libras, valuing this property so characteristic of the visual-gestural language, but which, due to historical forces, has been less considered until the present

PICTOGRAMS: A PARTICULAR CASE OF TALKING GRAPHIC IMAGE

Pictograms, also known as graphic sign symbols, are visual communication signs whose function (or rather, ambition) is to convey messages of an informative, prescriptive or operative nature to the greatest possible number of people, quickly and regardless of the demographic differences they can present.

1 The federal law that provides for the Brazilian Sign Language-LIBRA Sis number 10436, of April 24, 2002, and was regulated by decree nº 5626, of December 22, 2005. The Libras Law and its decree represent two historical landmarks in the trajectory of deaf identity in the country.

2 The term "iconicity" came from the writings of Charles Saunders Peirce (1839-1914), arguably the most important of the founders of modern general semiotics. On the relationship between a sign (representamen) and its reference or referent object, Peirce distinguished the concepts of icon (image, diagram and metaphor), index and symbol. The criterion that Peirce used to define the icon was the similarity between representamenand referent object, the most contested notion of all its typology.

I say ambition, because pictograms are not neutral symbols and, as talking images, they are cultural products that are two-way, that is, they influence and are influenced by the time, place and community that uses them.

As a particular system of speaking signs, pictograms:

> [..] they are signs of visual communication, graphic and without phonetic value, of an iconic figurative nature and of sign function. They are self-explanatory and have as main characteristics: graphic conciseness, semantic density and a communicative functionality that overcomes linguistic barriers (Own definition, assumed by the Teaching Committee of ADG[3]).

Like other products of Graphic Design, pictograms are inscribed in the system of signs that basically operate through spatiality and linear timelessness and are independent of spoken sound. The iconicity of pictograms is not based on a direct or servile correspondence between the graphic image and the visual appearance of a represented object (its referent), but between the drawing and the concept of the represented object. Because of this figurative characteristic, they are also called object or motivated images and can be interpreted without the requirement of a long or arduous period of learning, respecting, however, the cultural circumstances of time and place that restrict the absolute universality of the communicative act.

When the designer, when elaborating a pictogram, chooses the visual attributes of the concept that he will emphasize or exclude in the graphic representation, he must express a knowledge that is not only personal, but also cultural, that is, a conventional way of observing reality, located in time and space, necessarily governed by the communicative intention that it wants to convey through the drawing. This is also the case with signing in LIBRAS, through its signs, classifiers and its specific grammar.

The development of road traffic signs is regarded as one of the important milestones in the history of pictograms[4], as well as the contributions of Otto Neurath (1882-1945), an Austrian sociologist and educator, who created between the 1920s and 30s, the ISOTYPE-International System of Typography Picture Education, a system of visual signs intended to facilitate the learning of science. (fig.1).

and Charles K. Bliss, who, in the 1940s, developed a pictographic writing system called Semantography (Blissymbols), a kind of visual Esperanto composed of highly abstract graphic symbols that are currently used as an alternative and augmentative communication resource.

But it was the experience of the Tokyo Olympic Games in 1964 that decisively contributed to the propagation and internationalization of the use of pictograms in public domains, with the aim of facilitating the traffic of people and their access to specific services and places. Under the art direction of Masaru Katzumie, the designer Yoshiro Yamashita designed all the pictograms referring to the sporting modalities of the event (fig.2) and another team, composed of 30 designers, elaborated the signs referring to the services and facilities offered to tourists. during the event. In all, 60 pictograms were created that showed the world its efficiency as a means of international communication, resumed and revised in the 2021 Olympics.

After this pioneering experience, the following Olympics adopted pictogram signage as a routine measure, developing new designs or redesigning previously created signs. Special mention must be made of the pictograms conceived by the German designer

3 The author was part of the Teaching Committee of ADG - Association of Graphic Designers in 1998, year of publication of the glossary by the Association. Check the entry in the glossary, ADG, p.84-85.

4 For more details on the historical overview of the pictograms, see: SOUZA, 2010.

Figure 2: Pictograms for the Tokyo Olympics.
Source: http://www.gerdarntz.org/isotype. Accessed on: July 1, 2021.

Figure 2: Pictograms for the Tokyo Olympics. Source: OTA, 1987, p.394.

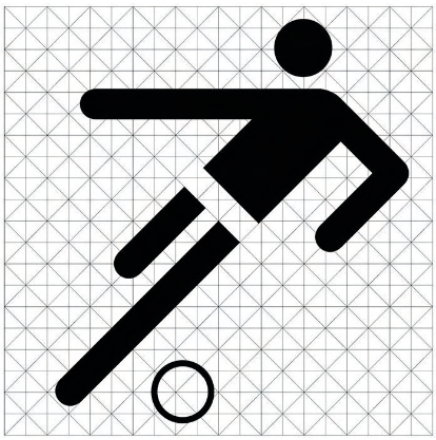

Figure 3: Grid for the pictograms of the 1972 Munich Olympics. Source: https://www.piktogramm.de/en/#c6.Access: June 30, 2021.

Otl Aicher, considered the "father of the geometric man", for the 1972 Munich Olympic Games (fig. 3), whose drawings, made using a diagram (grid) of horizontal lines, vertical and diagonal, are still reproduced to illustrate the most varied subjects.

FUNCTIONAL FEATURES OF PICTOGRAMS (PRAGMATIC DIMENSION)

Increasingly present in objects or places in the environmental scenario, the pictograms sign the socially appropriate behaviors to the most varied situations of everyday life: this service works here; go in such a direction; do not do this; avoid danger; handle with care; use it this way; etc. The social function of pictograms is public utility.

They are readable, that is, they directly and instantly communicate complete information

in themselves[5], because, first of all, there is a favorable expectation in their receivers of perceiving them as signing indicators, that is, as images that can be read as simple information, instruction or safety sentences.

CONTENT CHARACTERISTICS OF PICTOGRAMS (SEMANTIC DIMENSION)

The elaboration of pictograms involves a semantic procedure that goes through the primary and essential phases of concept formation (fig.4). This semantic procedure also exists in the selection of signs that make up the lexicon of signed languages, remembering that in these there is a conformation of the selected attributes to the linguistic norms that particularize them.

SHAPE CHARACTERISTICS OF PICTOGRAMS (SYNTACTIC DIMENSION)

Graphic conciseness is a characteristic that guarantees the pictograms the elimination of superfluous graphic details, the (possible) neutralization of the cultural variants of the line and the establishment of their own design rules (fig.5).

From a syntactic point of view, pictograms generally have the following formal characteristics:

- pictographic figures are drawn by sharp contours that determine the formation of well-defined areas, full or outline (fig. 6);
- the shapes tend towards geometrization and seek a reduction to the basic shapes of the square, the equilateral triangle and the circle;
- compositions tend to be symmetrical and the diagonal is used only to indicate an essential movement of the figure; when the message cannot be expressed by a single graphic element, it is recommended to use the smallest possible number of elements combined;

5 For this reason it is said that a pictogram is the same as a glyph.

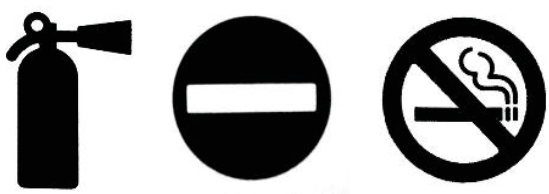

Figure 4 Three examples of concreteness versus abstraction in pictogram design: Fire extinguisher (concrete form representing concrete object), No entry (abstract form designating abstract idea), No smoking (mixed form indicating prohibition).

Source: AIGA, Symbol Signs, p. 184-185.

Figure 5: AIGA Pictograms for US Department of Transit

Source: AIGA. Available at: https://www.aiga.org/resources/symbol-signs. Accessed on: July 1, 2021

Figure 6 Sophia Bai's outline drawings for COVID 19 prevention in Noun Project.
Source: https://thenounproject.com/sophiabai/collection/covid-19/Accessed on: 4 July 2021.

- the representation plane is, preferably, frontal (the figure is represented as if it were right in front of us and at eye level;
- the shapes of the background area and the colors comply with international standards (fig.7).

Figure 7 Internationally standardized colors and formats.
Source: Self elaboration.

Respect and observance of these recommendations are intended to reduce the polysemy of pictograms and, consequently, increase their effectiveness as signs of social communication.

LIBRAS: TALKING USING THE BODY

The Brazilian Sign Language - LIBRAS - is a language, with all the linguistic characteristics of any natural human language. But it is not universal; Deaf people do not speak the same language anywhere in the world, nor do hearing people.

The language of the deaf is gestural-visual-spatial (it basically uses vision, spaces, facial and body expressions) and symbolic, that is, it has its own conventional structure, allowing the expression of feelings, emotions and any abstract ideas, without no loss of content compared to spoken languages.

There is a belief that LIBRAS is uniquely iconic, but this is a mistaken belief: although there is a high degree of iconic signs in the language, it is important to note that there are many unmotivated, or arbitrary, signs in LIBRAS.

Iconic signs do not constitute a pantomime or mimicry of what is seen. "The pantomime wants to make you see the 'object', while the sign wants you to see the conventional symbol for that object" (GESSER, 2009, p.21). It is in this cognitive sense that we approach the iconicity of pictograms and LIBRAS: both pictographic symbols and signs in the language of the deaf are conceptual and choose, for their material expression, the main attribute by which the concept can be sensibly recognized by others, in certain degree of abstraction or schematization. For example, both the pictogram and the house sign use the roof-type format to express the meaning, which can be extended over the words: home and shelter.

In LIBRAS language, the house sign combined with another sign (eg class or cross)

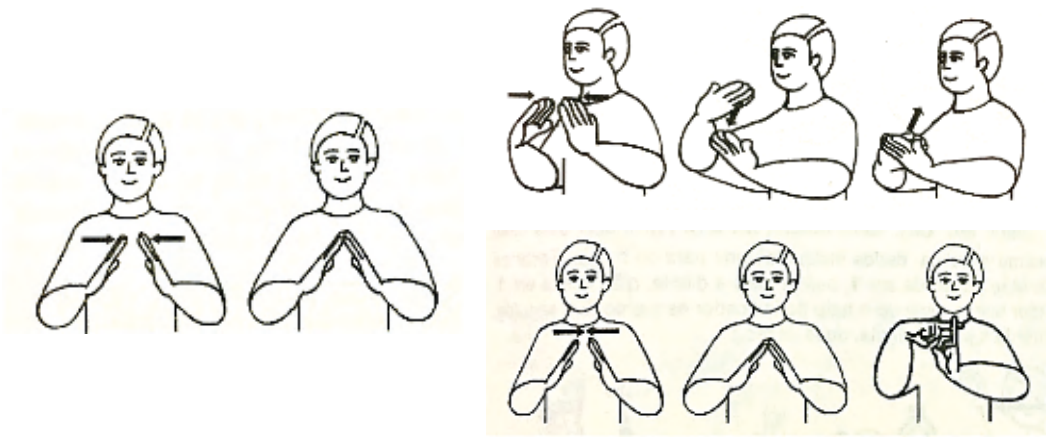

Figura 8 Á esquerda, sinal de *casa* em Libras; à direita, sinais de *escola* (acima) e *igreja* (abaixo).
Source: Capovilla et al. 2017. p.590,1121 and 1489. Illustrations of Angela Nucci.

takes on different derived meanings: school and church (fig.8).

LIBRAS has a lexicon, that is, a set of conventional symbols, and a grammar, that is, a system of rules that governs the use of these symbols or signs. The fact that there are many iconic signs does not limit or weaken LIBRAS, on the contrary, it makes it vivid for your interlocutor and your communication more visual.

There are five parameters that govern sign language: 1) Hand configuration refers to the shape that the hands assume in the production of signs; 2) the point of articulation refers to the place, in the body or in space, where the sign is articulated; 3) the movement itself, which can be fingers, wrist, hand or directional movements in space, 4) *the palm orientation*, that can be used in all directions, being more common to direct the palm towards the interlocutor and 5) the non-manual strokes, such as facial and body expressions that complete some signs, being able to make them more or less intense, as well as transforming them into an exclamation, question or denial[6]. To talk with the hands is, therefore, combining these five parameters to form words and sentences, in a given context.

As examples of iconic signs in LIBRAS we can cite two classic examples: legs and tree. The different actions that involve legs can be signed by the inverted "V" made with the index and middle fingers of the dominant hand (fig.9). In this case, iconicity is structural, that is, the fingers correspond to the known structure of the legs and with them it is possible to sign concepts such as: *dance, jump, sit, fall* and metaphorically, *resist,* and others.

In the case of the tree sign, the attributes of the prototypical concept are three: the plane where the tree grows (corresponding to the left forearm or horizontal auxiliary), the vertical trunk (corresponding to the right forearm or vertical dominant) and the crown (corresponding to the hand open) (fig.10). When you want to convey details such as, for example, the texture of the trunk, the height of the tree, the type of leaves in the canopy, the number of branches, whether it is fruitful or not, the signing person can use the classifiers (CL) that are complementary gestures for the detailed description of a sign.

The classifiers[7] are subjective and defined as

6 See several examples of LIBRAS grammar at CHOI et al., chapter:3, p.59-91.

7 The publication of Ferreira-Brito, ''Por uma gramática de língua de sinais", released in Brazil in 1995, it is considered a milestone

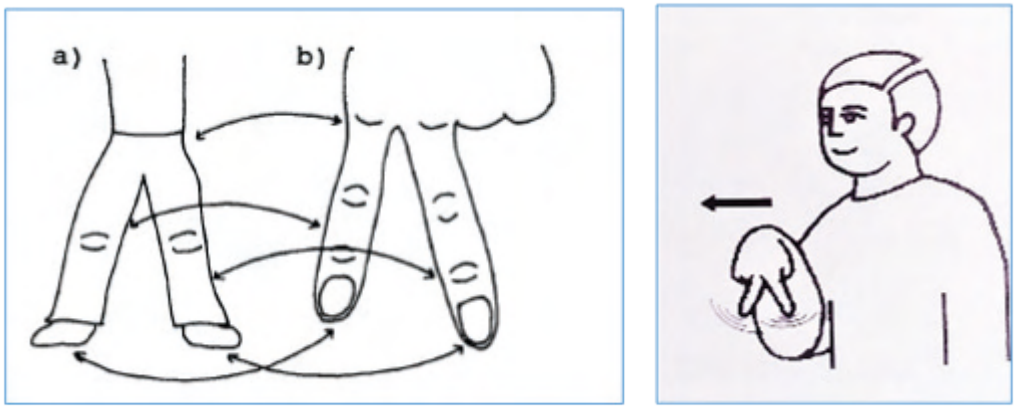

Figure 9: On the left, similarity between a pair of human legs and fingers in an inverted "V" shape, used in several signs, on the right, the sign about walking.

Sources: On the left,TAUB, 1997, p.27. On the right, Capovilla et al., 2017. p. 195. Illustration of Angela Nucci.

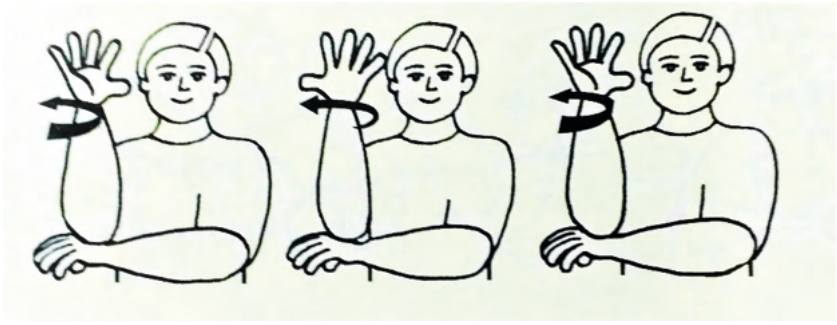

Figure 10 Tree LIBRAS.

Source: Capovilla et al., 2017, p.279. Ilustração de Angela Nucci.

> [..] a type of grammatical morpheme that is affixed to a lexical morpheme or sign to mention the class to which the referent of that sign belongs, to describe it as to shape and size, or to describe the way in which that referent is held or behaves in the verbal action (FERREIRA-BRITO, p.34).

According to deaf professor Markewicz (2021), the process of building a classifier involves four steps: (1) looking at a situation, image or action; (2) to see, that is, to look more deeply into that situation, image or action; (3) embody it in the mind and (4) express it in communication. For example, in the sentence "the wind roofed the house" – instead of using three signs (house + wind + roof), they can incorporate the gesture of "flying" to the sign of "house", using the gestural morpheme as a classifier "flying ceiling".

Another important classifier in the sign of LIBRAS is the indication of a person by the index finger: with the finger representing the person referenced in a conversation, it is possible to tell any story about them (fig.11). The finger then assumes the representation of a person through a metonymic process, that is, it is as if the person referred to were present in the telling of the story, so that the interlocutor

in studies on Brazilian sign language - LIBRAS. Among the topics analyzed by her there is a chapter on classifiers in LIBRAS, in contrast to oral languages and ASL (American Sign Language). Lucinda Ferreira-Brito is a professor in Linguistics at UFRJ.

feels secure about who is being spoken.

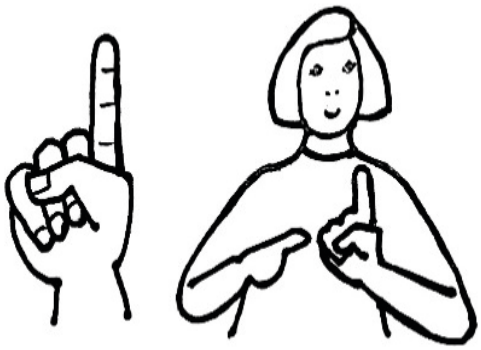

Figure 11 Index finger used in LIBRAS to designate a person

Source: Own elaboration.

FINAL CONSIDERATIONS

Pictograms and LIBRAS have visual communication in common: while the former constitute only a linguistic and systematized code of formats, colors and arrows for spatial orientation or safe use of equipment, the latter designates a language, with all the linguistic characteristics required to such legitimation.

Pictograms are communication aids in public environments and promote subjects' autonomy; the signs of LIBRAS constitute the first language of the deaf and promote their identification with the deaf culture.

Both modes of communication use iconicity as a resource of synthesis, that is, both the pictograms and the LIBRAS, from each concept, the cognitive attributes that characterize it in a typical, categorical way and express it visually and spatially in different degrees of schematization, from the most concrete to the most abstract, conforming it to the preexisting visual system: repertoires of pictograms consecrated by use or the five grammatical parameters of LIBRAS.

They are both context-dependent modes of communication: they anchor their interpretation or translation in the familiarity of the interpreting mind with the forms they assume in the communicative manifest, with the place where they are perceived and with other signs of the surroundings or with which they are linked in a system.

REFERENCES

ADG – **Glossário de termos e verbetes utilizados em Design Gráfico**. São Paulo: ADG Associação dos Designers Gráficos, 1998.

AIGA. **Symbols Signs**. 2nd. New York: The American Institute of Graphic Arts, 1993. Também disponível em: https://www.aiga.org/resources/symbol-signs. Acesso em: 1 jul.2021.

ARNTZ, Gerd. **Gerd Arntz web archive**. Disponível em: http://www.gerdarntz.org/isotype. Acesso em: 1 jul.2021.

CAPOVILLA, Fernando César *et al*. **Dicionário da Língua de Sinais do Brasil.**1ªed. São Paulo: Edusp, 2017 (3 volumes).

CAPOVILLA, Fernando César; MARTINS, A. Cantarelli. Resolvendo o paradoxo da iconicidade: o caso dos sinais de Libras. **Rev. Psicopedagogia** 2020; 37(114): 269-85.

CHOI, Daniel *et al.* Libras. Conhecimento além dos sinais. M. Cecília, da Cunha Pereira (org.).1ªed. São Paulo: Pearson Prentice Hall, 2011.

DECRETO nº 5626 de 22 de dezembro de 2005. Regulamenta a Leinº10436 de 24 de abril de 2002, que dispõe sobre a Língua Brasileira de Sinais – Libras, e o artigo 18 da Lei nº 10098, de 19 de dezembro de 2000. Disponível em: http://www.planalto.gov.br/ccivil_03/_ato2004-2006/2005/decreto/d5626.htm. Acesso em: 30 jun.2021.

FERREIRA-BRITO, L. **A Gramática de Libras**. Disponível em: https://docplayer.com.br/21821688-A-gramatica-de- LIBRAS.html. Acesso em 9 jul.2021.

GESSER, Audrei. Libras**? Que língua é essa?** Crenças e preconceitos em torno da língua de signs e da realidade surda. São Paulo: Parábola Editorial, 2009.

LEI nº 10436 de 24 de abril de 2002. Dispõe sobre a Língua Brasileira de Sinais – Libras e dá outras providências. Disponível em: http://www.planalto.gov.br/ccivil_03/leis/2002/l10436.htm. Acesso em: 30 jun.2021.

MARKEWICZ, Paula Maria. Treinamento Classificadores. Libras Natural. Aula 01 em pdf. Acesso restrito, 2021.

NOUN PROJECT: free icons & stock fotos for everything. Disponível em: https://thenounproject.com. Acesso em: 4 jul.2021.

OAP Pictograms. Otl Aicher pictograms (en.) Disponível em: https://www.piktogramm.de/en/search/ Acesso em: 30 jun.2021.

OTA, Yukio. **Pictogram design**. Japan: Kashiwashobo, 1987.

SEMANTOGRAFIA – **Blissymbols**. Disponível em: https://www.facebook.com/Blissymbols-298159500318475/ pdf. Acesso em:1 jul. 2021.

SOUZA, S. **Pictogramas brasileiros:** Um panorama do nosso jeito de *designhar* conceitos. Tese (Livre-docência) - Escola de Comunicações e Artes da Universidade de São Paulo (ECA USP), São Paulo, 2010.

TAUB, Sarah Florence. **The language in the body**: iconicity and metaphor in American Sign Language. Dissertation (Departament of Llinguistics), University of California, Berkeley, 1977. Disponível em: https://escholarship.org/uc/item/8d8508zc.Acesso em: 1 jul.2021.