CREATIVE DESIGN OF SILENT CODES; BRAILLE SYSTEM AS AN EXAMPLE

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This article presents a brief descriptive analysis of some relevant projects where braille is understood as a metaphorical concept of visual silence, as a gaze capable of seeing through other senses. The work shows a selection of illustrated books and tactile works with the objective of offering the inclusive meeting between seer and blind. We are always accustomed to a visual reading, but what if we used our hands; touch and other senses? Our motivation is to contribute to new areas, in an interest to highlight the need for a tangible world, a new way of imagining and looking at reality. Finally, the text raises a point of reflection to the technological advance as a new frontier of accessibility, we observe important developments that allow to construct graphic communication proposing sensory experiences and moments of interaction.

Key words:
Design, accessibility, creativity, silence, braille.

INTRODUCTION Images for everybody; a gaze reaching beyond the visible

Through the metaphor visual silence we speak of a gaze that is unique to the blind, able to see through other senses. Dispensing with the term blindness and highlighting a synaesthetic perception, our silent code focuses on the importance in the use of braille as a practice for creative production, as a presence and a new interest in the development of our imagination and our sensations, since they exist, even in absence of the retina. The starting point of our analysis is the conviction that other ways to perceive and understand images are necessary, through sensorial dimensions, from the entirety of senses. We must pay attention to the infinite possibilities of connection. “Touch has corrected the mistakes of vision-observed: sound, through articulated words has become the interpreter of all feelings; it is with the senses of vision and smell that taste is helped; hearing has compared sounds, being able to appreciate distances and lastly, the generating element has invaded all organs of all other senses”.

According to the World Health Organization, today there are in the world approximately two-hundred and eighty-five million visually impaired people, of which thirty-nine million are blind and two-hundred and forty-six million represent low vision. Our objective here is to display an array of strategies that employ braille in their design as a sensorial resource, beyond what is visual; a set of tactile works that offer multi-sensorial readings, an aspect that is fundamental to cognitive, linguistic and emotional development. Invented by French Louis Braille in 1825, braille is a reading and writing system for blind people, “a combination of six dots that allow to obtain sixty-four different combinations, including that without dots, which is used a blank space to separate words, numbers, etc. The presence or absence of dots determines which letter it is”.

It is particularly important that special attention is given from graphic communication, to the border between visibility and invisibility. We learn to perceive with experience, linking our senses, we must pay attention to the invisible, silent world. Silence acts as a sixth sense, “We enter silence as

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1 SOLER, EDUARDO: La educación sensorial en la escuela infantil, Madrid, Rialp, 1992, p. 43.
though walking into a dark room. Initially nothing can be seen, then the profiles of objects appear faintly, like uncertain, mutating lights.” In this line, we can discover a latent situation that pretends to communicate through touch, recognising textures and shapes in a necessary co-existence of the visual and the tactile. Regrettably, there are not many reproductions of this, we find new possibilities beginning to open up a path from creativity, particularly thanks to recent designers that allow new projects to be conceived from a deeper level of empathy. There is a need for new challenges, which would also be in compliance with [people’s] essential rights that safeguard equality in the conditions of accessibility for people with disabilities.

**Silence, braille and design; sensorial translation**

As we have previously stated, braille operates as an example of sensorial translation, in the case of visually impaired people, touch is one the main media, although there are other perceptive factors that we must strengthen “the importance of touch for our experience and our understanding of the world. Each sense, including sight are extensions of the sense of touch.” This way, the application and interpretation through silent codes, answers to the set of knowledge, techniques, strategies and technologies to facilitate the communication between people who are visually impaired and those who are not. These silent codes would be substitution keys from the visual system through touch, and an extension and technologic improvement in the way we communicate.

We start with an exploration of several original projects that aim at fostering and promoting tactile work as a nexus between visually impaired and those who are not. In the editorial field we find different initiatives that have considered accessibility and which are an example of sensory creativity adapted to printed surfaces. Although their reach is still limited, there is an effort to make up for the scarcity of inclusive material. From here, the silent code operates as a synaesthetic translator, from sight to touch, further developing a palpable communication that we find relevant to highlight are the posters of the Bologna Tactile-Illustrated Book Prize, an international award that promotes creation and dissemination of high quality tactile books, which would be efficient in different languages. Such initiatives invite diversity and research were image becomes familiar also through touch, to link experiences.

Numerous are the different search paths to understand this relationship between what is visible and what is invisible. *El libro negro de los colores* (Cottin Menena and Faria Rosana in Mexico, published by Tecolote, 2007) offers a unique sensorial translation. It is this way, through the silent code, that we are allowed to close our eyes to “see”, through the black background, its synaesthetic reading makes us perceive the colours, with no need to see them. Touch reveals itself as a way of expression and a language. This is a communication language were silence determines its chameleon skin. Again, the connection between braille and written text, fostering inclusivity, allowing a shared experience, because seeing is not only seeing; it is seeing and feeling, touching, searching, discovering and also discovering oneself.

It is in this realm that appears *Sensus, el universo en sus ojos* (2013), the first comic in Mexican braille, illustrated by Bernardo Fernández (Bef), written by Jorge Grajales. This is a project designed so it can be read visually and in braille. The visual part tells the story of an astronaut arriving to a planet inhabited by eyeless beings, who use the rest of their senses. The part of the story in braille describes the particular story of these beings; “touch teaches vision”. Another example is *Mr Light and Mr Dark* (Storybook for All Eyes, 2013) created by the creative agency BEO of Bangkok in Thailand. It is a combination of braille and English, illustrations with relief silhouettes, focusing on colour, sensorial stimulation and experiences that transform perception. An example that we find relevant to highlight are the posters of the *Fundación Vida Silvestre* (Ogilvy Argen- tina, 2009) designed to raise awareness on the situation of certain endangered animals: the figure of the animal is formed with texts in braille that describe the critical situation in which they find themselves. This is a metaphor with the intention of stimulating reflection, and which points at their possible extinction; if quick action is not undertaken, we will not see them ever again.

Another perspective that it is necessary to highlight is the focus on mediation and inclusion. We are talking about
the books by Bruno Munari (Milán, 1907-1998), which, although not directly related to braille, have an a fundamental role as translators of the silent code, capable of removing physical, cultural and linguistic barriers. His text-less “illegible books” are tactile, visual books that respond to multi-sensoriality, “Cosí definit perché non c’è niente da leggere ma molto da conoscere attraverso i sensi. È come una passeggiata in uno spazio silenzioso con tanti richiami ai vari recettori sensoriali (Called this way since in them there is nothing to read, but much to be known through the sense. Like taking a walk in a silent space rich with attractions for the different sensorial receptors).” The same happens with graphic designer Kutsami Komagota (Japón, 1953). Inspired by the object-books of Munari, Komagota created a series of books sucede lo mismo, in collaboration with Leaves (2004) en colaboración con Les Trois Ours, Les doigts qui rêvent y el Centro Pompidou. Both have made the most of the communication potential of tactile images for everybody, which have transformed a limitation into a creative resource, developing quality books to be seen and touched. We establish a new path for action through silent codes, which sensorial translation gets closer to taste and smell, we are referring to the work of WIMPY13 (2011) one of South Africa’s favourite fast food chain. They offer their menus in braille, also using braille to list the ingredients of their burgers, written on them with sesame seeds. Also Starbucks (2013) presented their menu in braille with coffee grains, designed by Brazilian agency RAI with the slogan, “From the tip of the fingers to the tip of the tongue.” These are new codes representing reality through a communicative language which is well aware of diversity.

In the realm of accessible typographic design, it is necessary to highlight the work of collective16 made up by Sonia Ciriza (graphic designer) and Miguel Ayesa (specialist in sculpture) who presented at FAD, in Barcelona (Fomento de las Artes y del Diseño, Fostering Arts and Design), the sample “Hacia un diseño gráfico inclusivo.” This sample was the result of the final project within the Design Studies in the Escuela Llotja (Llotja School) of Barcelona, 2011-2012. Through their Manual de Tifografía they explore the formal evolutions of braille in a research study of tactile symbols, with the collaboration of Xabier Armendáriz (blind, and a musicologist who has evaluated the emotivity and legibility of typographies (added value braille). 17

As we have observed, there are notable examples in today’s usage of braille’s graphics. Analysing these works implies an example of creative strategy that establishes a current of empathy with visual silence, that blind gaze through the eyes of who can see. A broad path for experimentation opens up, ranging from tactile exploration, a necessary experience in a dialectic, integrating interval. The work by Cristina Oyarzabal (2011) through direct testimonies of people who have regained their sight, makes it evident how “the blind is able to reconstruct all those things about space that sight procures, and it recovers this quote by Diderot in 1794.

Before the question whether he would be happy to have eyes, renowned blind Mathematician Nicholas Saunderson tells us, “[...] it seems to me that my hands would better inform me of what happens on the moon that your eyes or telescopes [...]. It would be a lot better to perfect in me the organ that I have before they concede me the one I am missing.”

From a sensorial handicap, lacking one of the senses implies a redistribution of perceptual tasks. Each sense can complete and enrich our perception of reality and our imagination. It is necessary to activate them and to link them to one another. This is why we believe that the analogy of visual silence drafted in this map, represents an indispensable perspective from social graphics. We know that it is possible to establish sensorial connections from the silent perception of vision, to stimulate sensations through the rest of the senses.

Accessibility strengthens innovation

Technology progress is very obviously generating new accessibility devices for the visually impaired, key resources to access to information. In the realm of design there are tools that make possible this link, thanks to current technology that allow to develop the potential of texture qualities. Today, 3D printers also occupy an important section of sensorial translation, especially when it comes to converting illustration into tactile illustration. This is the case of the University of Colorado, which has founded the project Tactile Picture Books21, developed by professor Tom Yeh. Through this project, young children’s books with 3D images are created, since children do not begin to read in braille up until the age of six. Thanks to the Anchor Center for Blind Children and Colorado Center for the Blind, they have developed software that employs mathematic algorithms to isolate the objects within an illustration, give them volume, and depth, identifying the important elements for their 3D printing. This work has its foundation on the sensitive features that texture offers, thanks to these prints, illustrated and pop-up books can be read. Tactile illustrations are changing the digital landscape, a narrative that explores the sensory is discovered. This is a necessary attitude with new materials to overcome the barriers and that facilitate a translation to all of the senses.
This is an unavoidable revolution in the communicative ways to access the digital world daily, however, braille is still relevant and meaningful. It is the beginning of literacy. This is why it is necessary to identify new tactile image methods and 3D printers are the future of tactile reading. A direct example in our study that must be highlighted is *Silencio* (available as a free 3D download). It is an illustrated poetry book for the senses, a tactile book thought for all, accessible for visually impaired people. It was developed by Jennifer Martin-Lorente and Néstor Toribio Ruiz. According to their authors, *Silencio* “is a compilation of poetry, in the way of micro-fiction, about feelings and sensual experiences, many a time, synaesthetic.”. These experiences enrich and expand our ways of seeing; they bring us closer to an understanding of what sensual translation is. All this progress is essential, designs for all senses, to see things from the place where the other is, in order to understand, mysterious boundaries generate sensorial links, in a sort of magic by virtue of which roles are inverted, from silence. We can certainly imagine new quality designs in adequate formats to contribute to a more inclusive society appearing in the short term.

**As a conclusion**

Before the need to situate ourselves in this discourse we have highlighted above all printed references, in an attempt to raise awareness of the creative possibilities and the demand for innovation and convergence in this field. For Diderot (2005), in the world of blind people, there is not any sensation of insufficiency whatsoever; “a blind person’s imagination is nothing but the faculty of recalling and combining sensations of palpable dots.”. The existence of a relation of transferability of contents is important, without taking “our eyes” of touch, the invisible is important, without taking “our eyes” of touch, the existence of a relation of transferability of contents is important, without taking “our eyes” of touch, the invisible

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20. Said by blind Japanese computer scientist, Chieko Asakawa in her TED talk (2015) *How New Technology Helps Blind People Explore the World*. She refers to how history proves that accessibility fosters innovation; wherever limitations have motivated a need to innovate, triggering a revolution in technology. Chieko has created many a resource for blind people, like *Home Page Reader*, who is currently developing a device with smartphones’ sensors that would allow blind people to move independently indoors and outdoors. She introduces us to cognitive assistance; which underpins the need for innovation and convergence in this field. For Diderot (2005), in the world of blind people, there is not any sensation of insufficiency whatsoever; “a blind person’s imagination is nothing but the faculty of recalling and combining sensations of palpable dots.”. The existence of a relation of transferability of contents is important, without taking “our eyes” of touch, the invisible.

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21. The project can be consult from: https://tactlipicturebooks.org/

22. Project with the collaboration of ONCE (Organización Nacional de Ciegos Españoles) (Spanish Blind People Organisation), that has been consulted on braille; it has also positively validated as fit to be read by blind people. Available from: http://tactilebook.com/ y http://www.thingiverse.com/thing:760365

23. DIDEROT, DENIS. op. cit. p. 57.