

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”¹.

According to the World Health Organization², 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”³.

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

1 SOLER, EDUARDO: *La educación sensorial en la escuela infantil*, Madrid, Rialp, 1992, p. 43.

2 World Health Organization, 2014. <http://www.who.int/mediacentre/factsheets/fs282/es/>. [Last search date: 06/11/2016]

3 ONCE, 2016. <<http://www.once.es/new/servicios-especializados-en-discapacidad-visual/braille>> [Last search date: 06/11/2016]

4 BROSSE; 1965, citado en LE BRETON: *El silencio, aproximaciones*, Sequitur, 2009, p. 114.

though walking into a dark room. Initially nothing can be seen, then the profiles of objects appear faintly, like uncertain, mutating lights.”⁴ 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. Regretably, 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 disabilities⁵.

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.”⁶ 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 concept, *Estudio Erizo*⁷ in Argentina, produce their books both for the visually impaired and those who are not, printing with inks and with relief braille. Their first book *Geneveva* (2013) written and illustrated by Laura Spivak, edited by Verónica Tejeiro, implicates the integration of shared reading. Didierot (2005) brings us closer to such circumstance, with a stress on the inner being of a person who never had the sense of sight, but who penetrates into the richnesses of their perceptions, what they smell, and from the paradigm of our research, particularly, what they touch, for them tactile sensations were the sources of mental images; synaesthesia between touch and vision was a possibility.

We highlight the work of French [editor] Philippe Claudet who since the 1980s has researched and produced accessible books, from the publishing house *Les Doigts qui rêvent* founded in 1994. Philippe Claudet also leads *The International Tactile-Illustrated Book Prize*⁸, 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*⁹ (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*¹⁰ (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*¹¹ (*Storybook for All Eyes*, 2013) created by the creative agency BBDO 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 Argentina, 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 and which we must include, is offered as a tool for mediation and inclusion. We are talking about

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On September 30th, 2016, the “*Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired, or Otherwise Print Disabled*” came into effect. <<http://www.once.es/new/Onceinternacional>>. [Last search date: 06/11/2016]

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PALLASMAA JUHANI: *Los ojos de la piel*, Barcelona, Editorial Gustavo Gili, 2006. p.10

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Available from: www.estudioerizo.com [Last search date: 06/11/2016]. *Geneveva* was one of the three Argentinian titles selected to participate in the *Bologna Ragazzi Award*. It also received a distinction in the children’s category of the *I Premio Latinoamericano al Diseño Editorial*, (First Latin American Award for Editorial Design) by the *Fundación El Libro* of Buenos Aires, Argentina, both in 2014.

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See: <http://www.tactus.org>

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It has received many accolades, among them the first prize in the category *Nuevos Horizontes* (New Horizons) in the Bologna Children’s Book Fair, 2007. In 2008, it was published again by Libros del Zorro Rojo.

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For further information on the project, see: <https://www.youtube.com/watch?v=qPECK_EGzCM> [Last search date: 07/11/2016].

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Project available from: <<https://vimeo.com/73190737>> [Last search date: 07/11/2016].

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 “ilegible books” are tactile, visual books that respond to multi-sensoriality, “Così definiti 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).”¹² 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, inspirado por los libros objeto de Munari, Komagota crea una serie de libros táctiles para niños ciegos (*Leaves*, 2004) en colaboración con *Les Trois Ours-es*, *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 *WIMPY*²³ (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”.¹⁴ 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 collective¹⁵ made up by Sonia Ciriza (graphic designer) and Miguel Ayesa (especialist 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*.”¹⁶ 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 Tiflografía* 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 typhlographics (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 us, 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.”¹⁸

From a sensorial handicap, lacking one of the senses implies a redistribution of perceptual tasks.¹⁹ 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 strenghtens innovation²⁰

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 Books*²¹, 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.

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PITTARELLO, R.: *Per fare un libro*, Edizioni Sonda, Torino-Milano, 1993. Presentation by Bruno Munari: *Libri senza parole*. Available from: <<http://www.munart.org/doc/bruno-munari-libri-senza-parole-1993.pdf>>. [Last search date: 09/11/2016]. The association Bruno Mirani is founded in 2001 in Milan, with the aim of promoting his work and methods. “Fare per capire” (Do to Understand). See: <http://www.brunomunari.it>

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WIMPY BRAILLE BURGERS: 2011. Video available from: <<https://www.youtube.com/watch?v=5YAchEo-o-o>> [Last search date: 07/11/2016].

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REASON WHY: 2013: *Cuando la creatividad piensa en la discapacidad*, 2013. <<http://www.reasonwhy.es/actualidad/sociedad/cuando-la-creatividad-piensa-en-la-discapacidad>> [Last search date: 09/11/2016]

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This collective, along with other three associates create the company *Zekogram* in 2013, extending the typhlography family *Zekos* and registering their designs. Inclusivity and wider projection, their concept “braille to see and touch” invites those who see to a new reading of the product, most of them Premium, who want a special differentiation in packaging products. This initiative has managed to become a key, necessary resource. This is a strategy that personalises a new, innovative design in braille, changing the shape of the dots, their texture and colour (validated by guaranteed teams), thus creating new sensorial experiences for the user. See: <http://www.zekogram.com/>

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EXPERIMENTA, MAGAZINE: *Hacia un diseño inclusivo, exposición de diseño táctil para invidentes*, 2011. <<http://www.experimenta.es/noticias/grafica-y-comunicacion/hacia-un-diseño-inclusivo-3307/>> [Last search date: 09/11/2016]. Award-winning project in Injuve 2012.

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Typhlographics are an alphabet analogue to typography, in which braille finds solutions of adaptability, working with shapes and textures. Thanks to this kind of tactile graphics, mental images are not only strengthened; 3D illustrations facilitate not only object recognition, but also they allow learning graphic representation, since they have the capacity of fostering perceptive analysis and mental representation.

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DIDEROT, DENIS: *Carta sobre los ciegos para uso de los que ven*, Buenos Aires, El cuenco de La Plata, 2005, p.1.

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*²² (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 Martín-Lorente and Néstor Toribio Ruiz. According to their authors, *Silencio* “is a compilation of poetry, in the way of micro-fiction, about feelings and sensorial experiences, many a time, synaesthetic.” These experiences enrich and expand our ways of seeing; they bring us closer to an understanding of what sensorial 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 bounds 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 referents, 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.”²³ The existence of a relation of transferability of contents is important, without taking “our eyes” of touch, the words of French poet Paul Éluard ‘Hands open like eyes’. We consider necessary that designs and illustrations are increasingly interesting and stimulating. We insist upon their importance, transferable to other fields within design. This is creating a possible path to generate new forms of accessible communication for everybody, shared approaches of reciprocity, where what is visible becomes tangible for the other.

In sum, studies of this type are necessary to be able to decode and respond to the intangible; the time to begin to see again has arrived. It would be a strategy to enter these abilities we have named *silent codes*, synaesthetic perceptions from the sense of touch. We are surrounded by an infinite sea of visual information, some times there is a graphic over-saturation that limits sensorial experiences. We must redirect our approach, provoke a concept of discovery; close our eyes, in order to see.

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RICCÒ, D.: Sinestesie per il design. Le interazioni sensoriali nell'epoca dei multimedia. Milano, Etas, 1999.

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Said by blind Japanese computer scientist, Chieko Asawaka 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*, 1997. She 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 understands the world around us. <https://www.ted.com/talks/chieko_asakawa_how_new_technology_helps_blind_people_explore_the_world?language=es> [Last search date: 06/11/2016].

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The project can be consult from: <https://tactilepicturebooks.org/>

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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:1760362>

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