

# TOCCARE LE PAROLE

## Illustrated tactile publishing

*Educate Publish  
Promote Design*

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Direzione generale  
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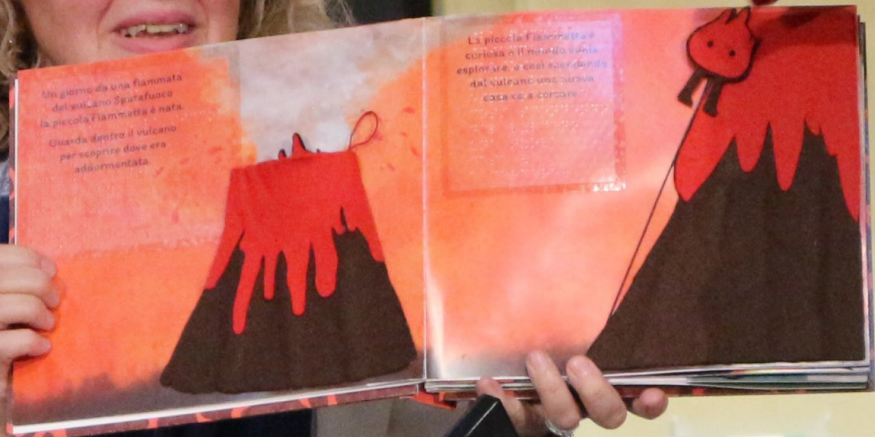
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Un giorno da una fiammata  
del vulcano Spatafuoco  
la piccola Fiammetta è nata.  
Guarda dentro il vulcano  
per scoprire dove era  
addormentata.

La piccola Fiammetta è  
curiosa di trovarla e  
esplorare il suo mondo  
dal vulcano: una curiosa  
casa va a dormire.

Una casa per Fiammetta



## 1.4 Tactile image education

by *Enrica Polato*

my intervention takes inspiration from a seemingly simple, but in fact very profound phrase by the writer and pedagogue Bruno Tognolini (2006) 'to imagine, the mind needs images' and is structured to try to give an answer to three questions that concern children with visual impairment:

- **How do they create their mental images?**
- **Why is it important that they can 'read' tactile images and symbols?**
- **Which books for them and how to find them?**

I will focus in particular on the analysis of two types of books: tactually illustrated books and multi-code books.

### **How do children with visual impairment create their mental images?**

Let us start with the concept of 'mental representation'. We know that the mental representations of children blind from birth are initially less rich and more fragmented than those of their sighted peers. This is not due to a cognitive deficit, but to the condition of blindness itself: these children have to learn different and more complex strategies to acquire information about the world around them, which they then have to organise, synthesise and systematise. Blind children must in fact interact directly with the object, learn particular palpation strategies (touching, tapping, rubbing...), acquire information sequentially and reconstruct it, in an inevitably more elaborate and complex way. This process requires more time, more skill, more commitment than for sighted peers.

The qualitative disparity between the mental images of children who are sighted and blind from birth attenuates over the course of development (Vallat & Schwab, 2010, n.1), and then potentially disappears altogether during adolescence (Hatwell, 2003). It should be emphasised, however, that the attenuation and eventual disappearance of the gap does not occur naturally, but is the result of special stimulation, without which the blind child cannot develop in the same way as his sighted peer (Hatwell, 1996) nor form a store of mental images that guarantees him the complete development of all imaginative potential. These particular stimulations include those offered by reading a tactually illustrated book.

Experts therefore confirm what is summarised in Bruno Tognolini's sentence: 'to imagine the

Experts therefore confirm what is summarised in Bruno Tognolini's phrase: 'to imagine, the mind needs images'. Of course, it may seem paradoxical to speak of images in reference to blindness, but blind people also structure their own mental images, constructed, however, through a perceptual basis other than sight, through hearing, touch and the haptic sense: for subjects blind from birth, having a mental image therefore consists of "seeing in the absence of the corresponding sensory input (Sandström, 1996, p. 20)".

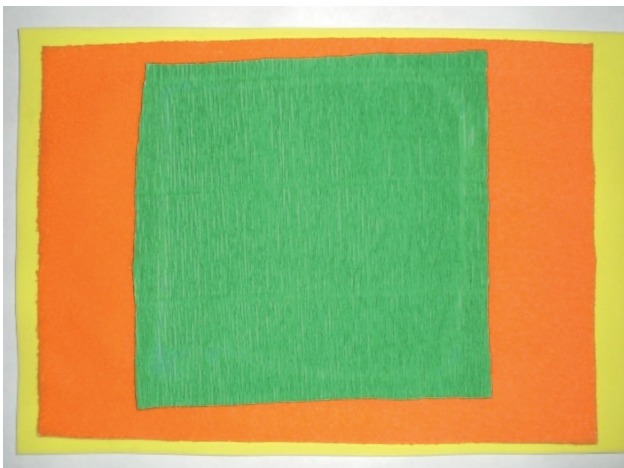
A blind person's images, such as spatial images, are formed not through visual perceptions but through exploration mediated by the other senses: a pathway, for example, can be represented by its surfaces and obstacles. To clarify this concept I would like to present some drawings produced by blind children, based on research carried out by Dr Fanan at the *Robert Hollman Foundation*, with which I collaborate.

The Foundation - set up in Italy in the 1970s by the Dutch entrepreneur whose name it bears - offers consultancy and support for the development of children with visual impairment and their families free of charge and engages in dialogue with local professionals and the medical, scientific and social communities to jointly improve clinical and research practice, training cultural promotion.

Dr. Fanan asked several blind children to make drawings, providing them various everyday materials such as paper, cloth or rubber.

I invite you to compare the following pairs of representations of a house (*Fig. 1*) and a cup (*Fig. 2*) respectively.

*Fig.1 - Free drawing: The house*



*Blind child 8 years old*



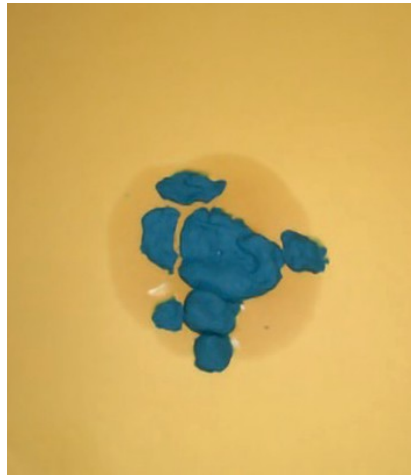
*Blind child 6 years old*

Fig.2 - Free drawing: The cup



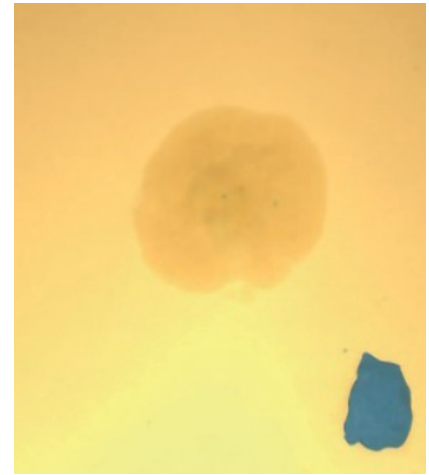
Blind child 6 years old

The 'top' of the cup



Blind child 6 years old

The 'bottom' of the cup



The drawing shown on the left was made by a child whom the educator describes as somewhat sedentary: for her, the most representative space in the house is the living room, the place she most frequents and most loves. In the picture we can see, one superimposed on the other, the floor (the large yellow rectangle), the carpet (the orange rectangle) and the sofa (the green rectangle), on which we imagine she spends the most representative moments of her experience of 'home', which we can associate with an 'inside', a domestic intimacy.

In the drawing on the right, created by a dynamic and active child, the representation of the house concerns the environment outside it. The rubbermaid strips used by him represent the unevenness, obstacles and objects he encounters when re-entering it: the gate, the steps, the gutter, the door and the emergency light. The child then represented the path leading home, rather than the house itself.

These two representations, although so different, have two aspects in common: firstly, both children felt the need not to delineate the volumes of the house, as a sighted child would do, but rather to enunciate the succession of what their feet encounter when re-entering it. Secondly, we can note that, graphically, both children did not use the classic representation of the house shared by those who see, consisting of a rectangle surmounted by a triangle, simply because they do not have a perspective image of it 'seen from a distance'. The standardised symbol of the house, like others in common use, is not learnt spontaneously by these children, but can be taught to them if we consider it important that they possess an iconic and graphic vocabulary that can be shared with their sighted peers.

In the second pair of tactile drawings (see fig. 2), the children were asked to draw a cup, choosing the tactile materials from a wide range.

The cup on the left was made by a blind 6-year-old girl using a rectangle of corrugated cardboard and a ring of Play-Doh for the handle, in a very realistic way. When the educator objected "...but weren't we supposed to make a drawing?", the girl replied "Don't worry, we'll glue it on the paper!". It emerges from the drawing and the verbal exchange between educator and child that the latter finds it difficult to detach herself from the real object and move towards its representation. The only step she feels like taking in that direction is to glue the cup on the paper, giving up the possibility of using it.

The representation of the cup made by another child, a blind 6-year-old, is quite different and actually consists of two drawings, the central one and the one on the right. The central drawing represents the upper part of the cup (the empty part, intended to hold liquids), which the child reproduced by crushing a small ball of Play-Doh so as to make it concave.

placed other pieces of the same material to represent the saucer. The drawing on the right, on the other hand, depicts the bottom of the cup, made from a rod of Play-Doh placed on the back of the same sheet. In all likelihood, he used haptic perceptions from previous experiences with cups to draw: as a result of these, he represented the top of the cup in the middle drawing and the bottom of the cup in the drawing on the right. This drawing confirms that blind children also like to represent their sensory experiences in graphic form.

From these two pairs of drawings, it is intuitively evident how the differences in the perceptual modalities (tactile rather than visual) used by blind children affect the creation of their mental images and thus their possibilities of recognising tactile images in books.

The path that the blind child is called upon to take in order to converge his mental representations and therefore his drawings towards conventionality is therefore considerably longer and more articulated than that of sighted peers. This awareness must prompt educators and teachers to structure paths in which the blind child can on the one hand experience reality and draw it, and on the other enjoy tactile images that represent it. It must also translate into special attention on the part of authors of tactually illustrated books in the design of "bimodal" images, in which writing and illustrations are accessible and as meaningful as possible for all children (sighted, visually impaired and blind).

### **Why it is important that children with visual impairment also can 'read' tactile images and symbols?**

Before we ask ourselves how we can help a blind child improve his drawing technique and how to bring him closer to reading conventional tactile images, we should ask ourselves



why it is important for him to be able to interpret, produce and share tactile images. There are actually two orders of reasons.

The first has to do with the relational, communicative, affective and cognitive spheres in a broader sense: images convey meanings and messages that also influence the lives of visually impaired children, who either do not use them directly (if blind), or do so only partially (if visually impaired). Having tactile images stimulates and enhances communication and creative and affective cultural exchanges with adults and other children. For a child with visual impairment, having tactile images of popular childhood characters - such as Spiderman or Peppa Pig might be - is important in order to get to know their physical conformation, and then be able to talk about them with peers and adults: in this case, tactile images build a ground for exchange and sharing, increasing the possibilities for cultural, creative and affective exchanges.

It is therefore essential to help the child to establish a curious approach with images, which can give rise to a relationship of understanding and comparison between reality and the image that represents it, because, as Dr Paola Bonanomi (2004), former typhlogist at the Istituto dei Ciechi di Milano, says, 'to touch is to know, to know is to represent, to represent is to communicate'. Therefore, if a child touches reality and becomes familiar with it, becoming capable of representing it through mental images that he or she can then use in communication with peers and adults. This brings us to the second reason why it is important for the child to become familiar with the world of images. This is a specifically cognitive reason: the image is the fundamental conceptual core on which construction of symbols, emergent literacy and reading-writing is based.

By 'emergent literacy' we mean all that the child knows about the world of reading and writing before learning to read and write, "when he or she realises, through observation or the suggestions of adults, that the signs posters, newspapers, containers, mean something" (Teale & Sulzby, 1986), beginning the process of awareness that will lead him or her to their decoding. This is a process facilitated by observation, hence by sight, to which blind children do not have access. Although living in a world rich in precursors of reading-writing, i.e. signs and alphabetical symbols (street signs, shop signs, flyers, T-shirts), blind children do not have the possibility to come into contact with them.

This lack of precursors may result in a lack of curiosity and spontaneous motivation of the child towards the world of reading and writing. Instead, it is important for adults to stimulate blind children and introduce them to this learning process, creating opportunities for contact with simple symbols and working with the children to create them: for example, labelling the boxes they use at home for storing toys first by gluing one on one side of the box. concrete (e.g. a plastic horse in the farm box) and then a picture of it

(e.g. the relief image of a horse). The earlier one starts with this early exposure to images and symbols, perhaps combined with Braille script, the easier literacy will be, which naturally involves decoding increasingly complex symbols up to alphabetic ones.

Admittedly, images represent only one of several ways of organising the mind, and their exploration cannot replace direct experience with real three-dimensional objects, however, as Polly Edman (1992) argues, images are an important complement to object knowledge and are necessary in some specific cases: if the real object is not available (the stars, an elephant), is too small (insects, cells) or too large (a mountain or the solar system), if it cannot be touched because it is evanescent (soap bubbles, snowflakes) or dangerous (fire, a snake) or if it involves phenomena that are difficult to explain in words (the rainbow, the water cycle) or simply to clarify a path from one point to another (maps and cartographies).

### Which books for children with visual impairment and how to find them?

In my opinion, illustrated tactile books lie variously on a continuum between two polarities (Fig. 3): on the one hand there are the more knowledge-oriented books, on the other hand the more emotionally-oriented books.

Shifted towards the polarity of knowledge, as far as children in kindergarten or the first cycle of primary school (pre-readers or apprentice readers) are concerned, are texts such as *Everything else* by Antye



Fig.3 - Graffito representing polarity in tactile books

Sellig (2012) (on opposites: big/small, light/heavy, above/below, one/many) or Lynette Rudman's *Positions* (2010) (on topological concepts such as above, below, inside, outside,) both published by the *National Federation of Pro-Blind Institutions*.

Children/youths who are already readers in the second cycle of primary school or even secondary school can be offered *Conffni* by Michela Tonelli and Antonella Veracchi (Editoria Tattile, 2018): this is a book that combines basic geography notions with a deeper reflection on the theme of the relationship with the Other.

Moving towards the polarity of the emotional world, we find albums that explicitly engage the sensibilities of young readers, such as *Cuore di Pietra (Les Doigts Qui Révent, 2007)* or *Alberi* (2010), both by Mauro L. Evangelista. These are books with a strong emotional impact, which also propose new ways of expression in the use of paper, rope and poor materials. Books innovative, important for the expressive proposals they suggest to anyone wanting to try their hand at tactile illustration.

Think of the research work carried out by Marcella Basso for *Io, Tu, le Mani* (FNIPC, 2015), a book whose story is hidden from view because it is contained within large pockets that can be explored by two people at the same time, thus putting those who see and those who do not see on an equal footing, since both have to rely on touch. Indeed, reading this book requires the direct involvement of a pair of readers, who enter into dialogue by simultaneously reading the text (in black and Braille) and performing direct actions of exploration, resulting in a meeting of hands and emotions.

On the other hand, as children's literature expert Laura Anfuso says, 'touch without sight caresses tactile emotions, so important for the development of inner space'.

Marcella Basso continued her research by conceiving for the 6th edition of the **TOCCA A TE!** competition the book *Diversi* (2021) in which the encounter no longer takes place between two, but between four people, emphasising the relational dimension of touch and placing it within the theme of social distance, made even more topical by Covid.

Think also of *Rozmanitosti* by Kristina Adámková (LDQR, 2008), whose images have no definite figurative referent, presenting themselves as multi-material boards on which actions can be performed and sounds created. These are abstract boards that each child, with or without visual impairment, can explore sensorially and thus interpret in their own way. Since there are no recognisable images, all readers, with or without visual impairment, are subjected to the same creative effort and imaginative, elaborating interpretations and which may be complementary or dissonant with each other but still lend themselves to exchange, sharing and perhaps creating stories.

I have chosen to tell you about these two books, both winners of the Typhlo & Tactus International Competition, because in my opinion they represent milestones in the young history of tactile books. They are books that we could call research books (expressive and emotional), or art books, as someone suggested, that have evolved the very idea of tactile illustrated books.

As Rita Valentino Merletti has well written, in *READ ME STRONG. Accompanying children in the great universe of reading*, books are objects capable of awakening all our senses. Unfortunately, are very few tactile books, dedicated to sensory awakening, if we can call them that, on the market today. This is due to a whole series of reasons, of an eminently practical nature and economic, well presented by Philippe Claudet to follow. The first reason is that the audience is numerically small (although tactile books are interesting and stimulating for all children, not only for those with visual impairment), the second in the complexity of these books (in terms of choice of materials, number of processes, time required, use of labour) and the third reason in their cost (around 20 times that of a book for the sighted), which is not affordable by families who would like to offer their child not one, but a small library, chosen by the child and therefore personal and evocative.

Currently, we can find small collections of tactile books within institutions that deal in various ways with children with visual impairments. Many books offered to children are one-off copies made in the classroom, in the family or in the Tactile Advice Centres, by teachers, parents or educators who adapt commercial books to the needs of children. For example, the *Robert Hollman Foundation*, with which I collaborate, often organises short moments in the Cannero Riviera Centre



Fig.4 - Pages from the book 'Faccia di mamma', inspired by 'Faccia di papà' by Cinzia Panarco

training in which educator Serena Danieli teaches parents how to transform insights from their children's everyday life, curiosities and interests into small, self-made, handcrafted books.

Sometimes, to supplement their own supply of tactile books, the Hollman Foundation educators create their own. For example, Serena Danieli, Michela Morandi and Anna Vallo took their cue from Cinzia Panarco's *Faccia di Papà* (Punti di Vista, 2017), which won a prize in the National Tactile Illustration Competition **TOCCA A TE!**, to create their own personalised tactile version: *Faccia di Mamma*. (Fig.4) Referring to the French situation, Philippe Claudet, founder of the publishing house 'Les Doigts Qui Rêvent', states that 'without public subsidies and without private financial support nothing would be possible.

Our sales prices, still too high for real integration (because price is a factor of social discrimination), have only a distant relation to cost prices. In France, however, the DLL (Department of Books and Reading) has promoted a policy of integrating people with reading difficulties: now, thanks to public funding, there are accessible texts in all public libraries, from which each child can choose... even those without visual impairment!"

Also for Italy, the solution to the problem of book availability and cost cannot be left to individual families or rehabilitation centres. It would be necessary for each library to receive funds to equip itself with accessible literature, i.e. audio books, books with enlarged characters, texts narrated with AAC icons and, indeed, tactile books. Currently, the few available on the market are mostly published by the *National Federation of Institutions for the Blind*.

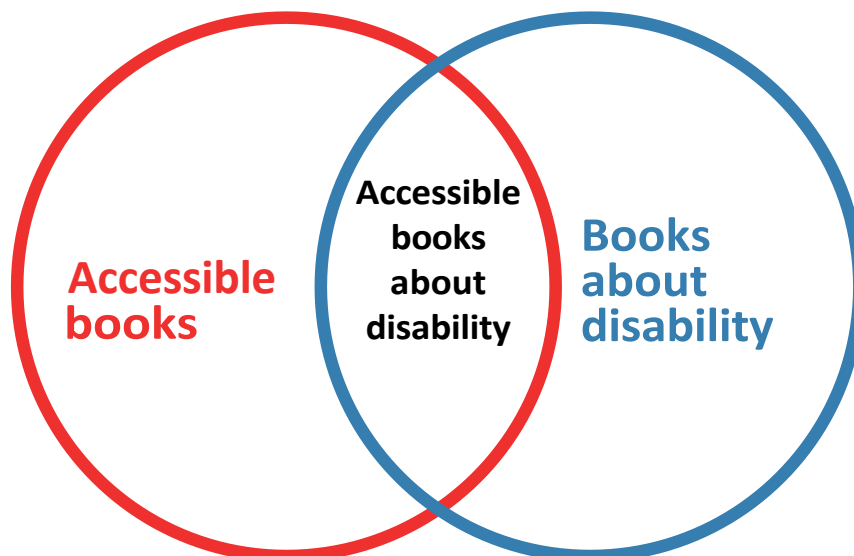


Fig.5 - Accessible books, inclusive books



We are therefore a long way from satisfying the large number of requests for books because, although they are designed for children with visual impairments, they are also attractive and motivating for children with the most diverse functionalities to read, thanks to the multi-sensory stimulation (tactile, auditory, sometimes olfactory...) that they offer. Unfortunately, we do not have the space here to delve into all the psycho-pedagogical implications of these books, but the topic does give me opportunity to present two types of books that I have been studying for some time and that I find interesting, precisely because they deal with a plurality of themes while at the same time offering answers to multiple reading needs: accessible books, books deal with disability, and an interesting intersection between the two: accessible books that talk about disability. (Fig.5)

I therefore present as an example of this last type the book created within the *L'albero del tesoro* (*Treasure Tree*) project, which will lead in the spring of 2024 to the inauguration of the first sensory-inclusive municipal park in the city of Padua. This park is being created by the City of Padua and Robert Hollman Foundation in collaboration with 17 organisations, including the city's University. In addition to these organisations, the Robert Hollman Foundation wanted to involve in the design of the municipal park those who are probably the biggest users of this service, namely children. In fact, Tonucci, Renzi and Prisco (2019, p. 10) suggest "taking the children as a parameter, accepting the diversity that each them brings as a guarantee of all diversity, since it is assumed that when the city is better suited to children, it will be better for everyone."

A total of 108 nursery and primary school teachers were therefore involved and trained in the co-design of the park, who in turn proposed an experiential path to their 1528 pupils. The book *The Treasure of the Enchanted Labyrinth* (Camelozampa, 2018), specially written by Elena Paccagnella and illustrated by Nicoletta Bertelle, was proposed as an integrating background.

The characters in this book are Red the Robin, Gaia the Turtle, Pino the Mole, Valentino the Hedgehog and Lola the Cat. Faced with the challenge of crossing a labyrinth to find a treasure, they first try to move individually then decide to join forces: this will allow the group to reach their destination, only to discover that... they are the treasure! Each of the characters has a disability, narrated in the text as follows:

- The character is introduced by her name and only later is her functioning made explicit ('Here is Lola, a sinuous white cat with fantastic blue eyes. She can't hear but is very good at reading lips');
- Disability is thus expressed through the description of functioning, not through qualifying adjective relating to the deficit (not 'Here is the deaf cat Lola');
- Functioning encompasses both things that 'succeed hard' and things that 'succeed easy', thus both disabilities and abilities ('Pine the mole does not see with his eyes, but inside the park he moves skilfully and thanks to his nose he recognises everything');
- Each character contributes significantly to the success of the adventure, thus to the finding of the treasure, because 'unity is strength'.

The objective of creating a book accessible to as many children as possible was pursued by creating a multi-code structure. The most innovative aspect of *The Treasure of the Enchanted Labyrinth* lies in the simultaneous use (i.e. on the same page) of different types of text and codes (Fig. 6).

There are two versions of the text, a larger version (in small print), designed for older children, and a simplified version (in enlarged capital letters), designed for younger children with cognitive difficulties or low vision. For both versions, the Easy Reading© font was used, which also facilitates reading for readers with dyslexia.

As far as codes are concerned, the text is accessible because it is illustrated with the icons of Alternative Augmentative Communication, written in Braille for the blind and read by expert voices in the audiobook, accessible via QR CODE. The book's illustrations were also designed using specific tricks (clear outlines, contrasting colours, whole figures), as to facilitate smaller readers and/or those with low vision. To date, the book is in its third reprint.

The concept of this book, which allows cross-reading access, aroused much interest. *The structure of The Treasure of the Enchanted Labyrinth* has also been adopted by the Scientific Committee of the 'Ravenna per mano' Project, consisting of the Municipality of Ravenna (lead partner), the Polo Museale dell'Emilia Romagna, the Opera di Religione of the Diocese of Ravenna, the City Art Museum of Ravenna and the RavennAntica Foundation. The Department of Educational Sciences of the University of Bologna, in the person of Prof. Roberto Dainese and Prof. Chiara Panciroli, and the Robert Hollman Foundation, in the person of Dr. Maria Eleonora Reffo, collaborated in this project.

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Audiolibro con QR CODE



Immagini con accorgimenti facilitanti per bambini con ipovisione

Fig. 6 - The structure of *The Treasure of the Enchanted Labyrinth*

This project, linked to accessibility of heritage, envisages the realisation of supports and initiatives that favour the enjoyment and knowledge of Unesco monuments and is aimed at everyone, paying special attention to the inclusion of people with different types of disabilities. Starting from the images present in ancient basilicas, mausoleums and baptisteries of Ravenna, a path was designed to discover eight symbols depicted in the mosaics (star, deer, lamb, cross, monogram, peacock, dove, shell), which allow an approach through images aimed at overcoming sensory and cognitive barriers, structured on the needs different types of users (Ravenna per mano - Il Progetto, s.d.).

For each of the eight symbols, a volume has been designed that is accessible both in the textual part, written in different codes (black with highly readable font, Braille and CAA), and in the tactile part illustrated. In addition, each booklet is accompanied by two tactile cards: the first, preparatory, presents the subject in a form closer to the real thing (in the example in *Fig. 7*, a peacock with typical colours and a tail that opens like a fan), the second faithfully depicts, in relief, the outline of the subject as it is represented in the mosaic.

Finally, I would like to dwell on another important and emerging aspect: the integration of analogue and digital, in our case between paper books and digital content. Regarding the Museum Guides



**Pavone,  
Basilica di  
San Vitale**

Ogni fascicolo è corredato da due schede tattili...



*Fig.7 - The two tactile illustrated cards accompanying the volume dedicated to the peacock*

presented above, the content of the printed volumes will be supplemented with other, in-depth content, accessible via an app. This will be multimedia and multi-code content (video storytelling in LIS, audio description), which will allow everyone to choose from various options, personalising the reading experience.

I know that the integration of paper and digital is also of interest to the *National Federation of Institutions for the Blind*, which has been engaged since this year with the travelling project **TD-BOX - Tactile and Digital Narratives**. For its part, the French publishing house Les Doigts Qui Rêvent, which I have mentioned several times, realised for the *TIB on TAB* Project the digital adaptation of the printed book *Émile veut une chauve-souris* (written by Vincent Cuvelier, illustrated by Ronan Badel, published in paper version by Gallimard) in Epub format, also suitable for children with low vision, which in the Italian version is entitled *Leo wants a bat*. (Fig. 8)

It is a fully adjustable digital picture book, where each child can adjust the readability of both the written part and the illustrations according to his or her needs and preferences. With regard to the written part, the child can decide whether to listen to the story being recited by an expert voice or to read the text independently:

- the font
- the font size
- the colour of the text and background  
(white text on black background, black on white background, black on grey background, black on beige background)
- spacing (between letters, between words, between lines)



Fig.8 - Cover of the Italian Epub *Leo wants a bat* and French version

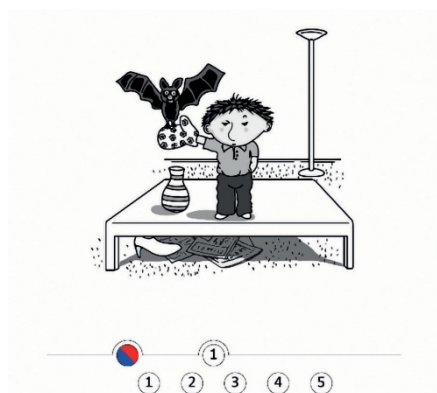


As far as images are concerned, the child can choose between:

- 5 levels image adaptation (from 1, most detailed to 5, most simplified, removing details that are not essential for understanding the story and perspective)
- colour or black/white images (*Fig.9, left*)

In addition, if the child wishes to explore a single element of the drawing, he can highlight it by blurring the remaining part of the image ("isolate an element" function, *Fig. 9 left below*) or zoom in on it (*Fig. 9 right*) to enlarge it to his liking.

The book also features sound effects and animations that can be activated by the child, so that he or she can enjoy a personalised and engaging reading experience. Thanks to the Erasmus+ Project "Flex Picture Ebook", the Epub is currently being tested in four European countries: Austria (Johannes Kepler University, Linz), Italy (Robert Hollman Foundation, Padua and Cannero Riviera; Abilnova, Trento), France (Institut des Jeunes Aveugles, Toulouse; Ludosens, Bordeaux; Les Doigts Qui Rêvent, Dijon), and Lithuania (Lietuvos Akluju Ir Silpnaregiu Ugdyimo Centras, Vilnius).



*Fig. 9 - Left, black-and-white image; bottom left, 'isolate an element' function; right, 'zoom' function*



As Philippe Claudet (2021), founder of the Les Doigts Qui Rêvent publishing house points out, children with visual impairment increasingly have associated disorders. Touch alone not enough to enable, support and facilitate their access to the world of reading: it is therefore necessary to deploy different strategies and experiment with innovative solutions, using all the technological opportunities available to us.

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