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USER EXPERIENCE STUDY FOR A SOUND UNDERSTANDING OF THE INTERACTION BETWEEN THE VISUALLY IMPAIRED AND THE ENVIRONMENT

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ABSTRACT

To contribute to a more comprehensive understanding of the experiences of the visually impaired people and the challenges they encounter while navigating the architectural and urban spaces, we propose a framework that incorporates the subjects under study as active protagonists. In this regard, we present and discuss the relevant findings from a focus group meeting; this open dialogue with the visually impaired – as an effective collaborative process – becomes a window through which a rich insight into their feelings and experiences is provided.

Keywords: visually impaired, focus group, orientation, wayfinding, mental map, legibility, complexity, familiarity

LA L'ESPERIENZA DELL'UTENTE COME STRUMENTO PER UNA PIÙ APPROFONDITA CONOSCENZA DELL'INTERAZIONE TRA AMBIENTE E DISABILI VISIVI

SINTESI

Per contribuire a una comprensione più estesa delle esperienze dei disabili visivi e delle sfide che essi vanno ad affrontare negli ambienti architettonici e urbani, viene proposto uno scenario che racchiude i soggetti sotto studio nel ruolo di protagonisti attivi. A questo proposito, vengono presentate e discusse le risultanze di maggior rilievo emerse dall'incontro con un focus group: questo dialogo aperto con i disabili visivi – quale efficace processo di collaborazione – diventa una finestra attraverso la quale viene fornita una conoscenza più ricca e profonda delle loro esperienze e sensazioni.

Parole chiave: disabili visivi, focus group, orientamento, wayfinding, mappa mentale, leggibilità, complessità, familiarità

INTRODUCTION

Visually impaired, visually handicapped, the blind, partially sighted people, etc. are the terms which are usually used to report visual disabilities. "*It is estimated that by 2050 the number of people with vision impairment could triple due to population growth and ageing*" (Pascolini, Mariotti, 2011). Moreover, according to the American diabetes association, "*diabetes is the leading cause of blindness in people ages 20-74*" (ADA, 2011). Hence, the visually impaired represent a population of significant size who are conquering more space in the society day by day. Although their experience of the world is arranged at large by mixtures of all senses, most of our surroundings have been developed in a way to consider only the "missed" one. Lying on the visual representations in large measure, they have accommodated the "eye". Aesthetics takes precedence over functionality and every component of environment competes with each other for visual dominance. Now the question is: where architectural and urban spaces are predominantly judged by what they look like, how do the visually impaired understand and experience their surroundings? This paper highlights the informational and decisional role of the focus groups' interviews in enriching the vocabulary of our research about the situations of conflict and/or conformity between visually impaired capacities and environmental legibility/complexity. The aim of this review is to stimulate researchers to carefully consider richness of data and a deeper insight that focus group interviews can provide in studying the visually impaired's relationship with the space from different perspectives.

This paper is structured into three parts. In the first part, we introduce a detailed description of methodology, and of how we conducted and analysed focus group data. In the second part, we present how the data collected from the focus group interviews have contributed to our understanding of orientation and mobility of the visually impaired. And in the third part, we discuss relevant issues from the experiences of the interviewees with both physical structures and social relations in their everyday life.

THE VISUALLY IMPAIRED AS CO-RESEARCHERS

In this research, our primary goal is to give voice to the subjects under study, in order to achieve their everyday experiences and encountered challenges, and to enable them to make their voices heard. This condition can be created through the widely used **focus groups**; the group settings of researchers and researched where the participants have the opportunity to enter in conversation with each other to deal with the concepts of the project. Focus group is "*a way of collecting qualitative data, which – essentially – involves engaging a small number of people in an informal group discussion (or discussions), "focused" around the particular topic or set of issues*" (Wilkinson, 2004, 177). It is a qualitative frame work for exploring sensitive subjects, capturing people's responses in interactions with real place and time.

In this paper we present an example of focus groups meeting as an opportunity to collect information about what the visually impaired think, or how they feel, or on the way they act in a specific context. It is a key instrument which offers a useful vehicle that involves users and indispensable base to identify the conflict scenarios between environment and the visually impaired. It allows themes to develop both from the prior knowledge of the subject matter and from the narratives of focus group participants.

The focus groups with the blind and the partially sighted were conducted in UIC (Italian Blind Union) head office in Trieste on the 8th of May 2018. One additional focus group meeting with only blind participants was also conducted on the 13th of August 2018 in the same setting.

The criteria of selecting the participants were the same problems, needs, and the common experiential background in overcoming the barriers in their day to day life. The needs of the blind and partially sighted people, in spite of being in the same classification under the title of "visually impaired", are actually very different, especially in relation to the type and seriousness of the disease. Hence, we have classed the interviewees into two groups, partially sighted and legally blind (only one of the participants, woman 1, is totally blind with no light perception). This "segmentation" of participants in two groups has a distinct advantage, it flows an element of comparison and contrast into the interpretation during the data analysis phase. It also offers a wide view to the landscape of visual disability from various perspectives. The participants were recruited as individuals from UIC head office. There were in total 8 interviewees, 4 interviewees per each group, all adults between 30 and 60 years of age and all are living in and using the city of Trieste for their everyday life purposes. During the focus groups' interviews, the debriefing team, active in disability issues, was present as an organizer. This multidisciplinary team was also included in analysing phase. It was composed of a principal researcher as moderator, an architect expert in accessibility and universal design (UD) in urban areas as an assistant of moderator, a psychologist expert in analysing non-verbal communication and body language, an expert in linguistic and quantitative data analysing, an expert in focus group meetings, and a fast keyboard typist to type the focus groups' conversations in real time. Each group's interviews lasted approximately two hours. Interviews were carried out in a setting (UIC head office) where participants were free to dialogue, so as to trust one another. This permitted spontaneity of interaction among them. A chance to voice their opinions and positions on all key issues was given to all the participants. Initially, we had noticed an evident sense of distrust in one of the blind

participants towards us, which changed in the course of participation when she found that she is taken seriously as "co-researcher". All focus groups' discussions, with the permission of the participants, were audio and video recorded and afterward transcribed verbatim. Considering that this paper involves the collection of sensitive personal data, the informed consent is obtaind and the anonymity of participants in the focus groups is assured. We began with a brief explanation of the purpose of the study, and then participants were asked a series of questions to focus on their everyday indoor-outdoor experiences. We introduced open-ended questions in a conversational manner to encourage the participants to discuss. Four key questions were used as guides for focus group discussions:

- Tell us how the building where we are now is made. What does it transmit and how do you perceive it? Draw it with your words.
- When you enter a familiar space, how do you find your way? When you enter a place for the first time instead, what are your orientation and wayfinding strategies? How do you build your mental map? (We were interested in and asked as well about the challenges they encounter in spatial perception and spatial cognition of an unknown place, to better understand the navigation with low vision or without vision)
- What is the role of environmental factors on your relation with spaces and places? Are they facilitators or barriers? (To focus on their experience of architectural and urban spaces and on how the built environment can facilitate or obstruct their participation.)
- What is a complex environment for you? Have you ever felt disoriented or deeply uncertain and lost? What is a legible environment for you instead? Have you ever been in an environment where made you forget your handicap?

To begin the data analysis process, the transcripts were checked against the audiotapes for accuracy and supplemented with some additional detailed notes and observational data obtained during the interviews by the debriefing team. Subsequently the data went through several phases of **quantitative** and **qualitative** analysis. In the quantitative analysis, the numeric description of the data, the quantity of words, context, internal consistency, frequency and extensiveness of comments as a measure of importance, attention, or emphasis, were valued. "*The TaLTaC software package as a tool of lexical and textual analysis*" (Bolasco, De Gasperis, 2017) has been used for this purpose. "*TaLTaC is a software application for the automatic analysis of texts according to the logics of both Text Analysis (TA) and Text Mining (TM). Such an analysis allows to define a quantitative representation of the phenomenon under study, both at the level of text-units (words) and context-units (fragments of text)*" (TaLTaC2). The output produced by this software contained selected lists of words and expressions. But it is important to stress that the achieved data could not produce useful numerical results. The software made a simple count of the frequency with which particular words, such as complexity were mentioned without considering the context in which the word were occurred. The meanings of words are frequently context dependent, hence it is useful to try to capture the context with which they are associated. On the other hand, sometimes some words are said only once but in a manner that deserves attention. This is also because of the interactive nature of conversations which are needed to be taken into consideration during analysis. "*Researchers should look at how people talk about place before they try to categorise what participants say about it*" (Myers, 2006, 321). Conversation analysis is a qualitative data analysis that takes account of discursive interactions among participants. Qualitative analysis helps to identify the degree of support, interest, agreement, consensus, dissent, intensity and specificity; it monitors body language and non-verbal activity as well.

The qualitative data analysis is done in three steps. In the first step, a preliminary analysis is conducted across all data in order to identify ideas, concepts and primary themes that are relevant to the purpose of study and research questions. Then a more detailed analysis is performed by deconstructing textual data in order to extract meanings and uncover unintended or hidden messages. The second phase consists of categorising the common issues and themes emerging from the narratives of participants and the previous studies on the topic under discussion, which are segmented in a question-by-question format. The last phase continues with interpreting, comparing and identifying connections and contrasts between the experience of the blind, the information gathered from the partially sighted, and the background materials. This helps us to find out new issues and themes which are not present in previews studies.

What follows is a brief summary of what derived from the second phase of analysis; the main patterns for each question which are drawn on relevant literature as well as excerpts from the focus groups' discussion. Each topic is treated in turn with a brief introduction of insights from literature which are complemented and supported by direct *quotations from the participants of focus groups*. We use quotes to better illustrate their personal experiences, trying to capture a full and balanced picture of the views expressed by them. After exploring the issues, we will discuss the focus group relevant findings that derives from the third phase of qualitative data analysis.

EXPRESSION AND EXPERIENCE OF ARCHITECTURAL AND URBAN SPACES

We had focused on how the built environment is experienced from visually impaired perspective, seeking

to construct richer understanding of the various ways in which they engage with their surroundings. Focus groups participants were asked to first "draw" with their words the setting of our meeting. The meaning many blind participants accorded to that place was dependent on texts they read about it. This is because that building does not explain itself to them as a conceptual, abstract whole. The partially sighted, instead, are more focused on the experience of the building as a whole. They instinctively rely on their residual vision for the first experience with the environment in order to get quickly the whole idea of a particular place and to be able to perceive its essential characteristics (at a glance).

For the blind the concept of perceiving external configuration is not applied to internal spatial layout of the same building. "*Perceiving a building is one thing, getting an idea of the rooms is another thing*" (Woman 1 who is fully blind from birth). Focus group participants acknowledged that their movement within the places is crucial in shaping their perception. "*The blind person's perception of the world, is confined to the reach of his body*" (Hull, 1997, 33). In a significant experience of space by visually impaired, a curious reciprocal action takes place: a multisensory dialogue in which the interest in relationship between body and space goes beyond the visual aspects. "*We do indeed see by our skin*" (Turrell, 2003, 144). Little by little they strive to give form and measure their entire surrounding. By means of spatial sequence, texture, material and sound, they are able to give each space its individual character.

When participants were asked to talk about how they perceive the spatial representation and dimensions of physical structures and urban spaces around them, we noticed inter–individual differences in gathering information.

> *It is a great building, because the entrance door is pretty big* (Woman 2 who went blind in later life).
>
> *My impression says that it is a great building, because walking all the corridors up and down, visiting all the available "window openings", you can find that it is pretty big* (Man 1 who went blind 5 years ago).
>
> *I feel like there's a lot of emptiness around me* (Woman 1 who is fully blind from birth).
>
> *I perceive it very old. First of all because you feel, from the doors to the floor, everything is made of wood, everything creaks* (Man 1 who went blind 5 years ago).
>
> *It is a fairy long and wide road; because it is punctuated by lots of trees and pedestrian crossings* (Man 2 who went blind at the age of 16).

One of the participants underscored a point that can serve as a case description of the way that the blind gather the perimeter of space, and perceive its acoustic volume. Her experience is "*essentially acoustic and is based upon awareness of echoes*" (Hull, 1990, 28).

> *The wider the place is, the more possibilities are to understand how it is divided, or whether there are more or less furniture or obstacles in it. The pressure of the air bounces off the wall or the sound coming back from the columns are felt in different ways. Instead, when the environment is "deaf", it suppresses its echo. Hence you cannot identify and form precise idea of your surroundings, instantly* (Woman 1 who is fully blind from birth).

When she talks about navigating within urban spaces, her attention centres on the soundscape of the city. The sounds "*embrace the mysterious void called space in a special way and make it vibrate*" (Zumthor, 1999, 21). Hence, every space has its typical voice and echo which makes its measures understandable.

BUILDING IMAGE – ORIENTING SPACE

We asked the participants to share their in-door and out-door experiences, and to explicitly describe their strategies in orientation and wayfinding. Moving in an environment, we can distinguish two different but interrelated processes, i.e. orientation and wayfinding. The knowledge of the first one is indispensable to find the second one. Orientation is the ability to define the position in space, both in absolute terms and in relation to references available in the same space. Wayfinding is a dynamic process that allows one to understand which position is gradually assumed in the environment. The partially sighted or the blind more than others try to capture all relevant information in order to identify their own position in that space. Their main goal is to be able to find their own way; all their senses "think" in the challenging process of identifying and updating their self-position. While the type of and way of gathering information differ between the partially sighted and the blind, their walking experience achieves different dimensions. We can identify two distinguished key challenges of orienting and extracting information through the spaces in the partially sighted and the blind: **route-following** (scanning) and **layout-learning** (sketching). These processes work reversely. In the process of "scanning" every part of the space is first perceived separately and sequentially and then is assembled, tending to arrive to the whole configuration. The process of "sketching", instead, first leads to form an overview of the space and then provides insight into its structure. Route navigation is well managed by the blind. A blind person walks through this route with few anticipations or little preparation; what lies in silence more than two or three meters far means nothing to him. Blindness is like a broken mirror, hence, for the blind, the spatial setting

is as a puzzle of isolated fragments, whose overview is 'forbidden' most of the time. The blind try to **measure** and to **pre-order** their route; to measure means to take possession of the shape of things, the dislocation of objects, and the sequence of spaces in order to update their positions relative to some starting points; it's a sort of "mental meter" which facilitates the movements of the blind through urban settings and individual buildings, with surprising ease. Pre-order, however, means to memorize the possible barriers and obstacles; it permits the blind to build their own in-door and out-door optimal path. This process results in long walking time because it requires the minute-to minute use of environmental information that the blind grasp in darkness through hearing, touch and smell. To go back, they just walk the same path in a reverse way. In an unfamiliar setting, in the absence of configurational knowledge, the blind try to figure out and learn a new route; they are principally more concerned with how this new route is structured than with the environment through which the path passes. This sort of sequential strategy emphasizes a string of points, without providing the relationship among them. The blind store these points in their memories and use them to determine the return path. To take a familiar route, indeed, is nothing other than following the memorized route, by retracing and reconfirming its stored points.

The partially sighted, instead, with their residual vision, try to capture the configurational properties rather than relying on a specific route. They are more focused on experiencing the environment as a whole. Layout–learning is disciplined by classification and hierarchy. It provides not only local spatial information, but also a sense of their relation to the whole. The partially sighted start the process of layout learning by seeing the totality of a scene and perceiving the distant cues as an image; they notice how that scene is hierarchically structured afterwards. Whole comprehension simplifies wayfinding tasks of the partially sighted compared to the blind. The partially sighted rely on visual cues and may sometimes see their destination. If the place is not familiar, the partially sighted may start with a general and vague image of spatial layout which, during the journey, becomes more precise. In the case they have familiarity with the environment, all the elements and details come into sharp focus at once.

In the process of learning a new environment, the partially sighted and blind tend to start by recording landmarks and use them as **reference points** to subsequently fill in paths (route- following) or to structure the spatial organization (layout — learning). Door handles, change in floor texture, stairs, ramps, steps, other minor shifts in elevation as the curb of the sidewalk, drains, the point where direction changes in the circulation system, etc. constitute excellent reference points that can be especially helpful in wayfinding experience of the blind and the partially sighted . "*Only if the route is punctuated by various textures of the pavement, the smell of a bakery or the sounds of a street musician, is there a feeling of having crossed an area, drawn near to things and gone past them*" (Hull, 1990, 181). The focus group discussions confirmed that these reference points are not only individual but also used in different ways depending on whether they are used by partially sighted or blind people. Arranged sequentially in a row, these reference points provide local spatial information to the blind. Hierarchically placed, instead, they give a global spatial cue to the partially sighted ones.

The following quotes illustrate some reference points used by partially sighted and blind participants.

> *The sensory feedback from my footsteps make me notice the drop-offs and changes in ground texture along my route. The city does not smell much, but I feel the smell from flower shops, bakeries or coffee bars, when their doors are open* (Woman 1 who is fully blind from birth).

> *For me there are three essential points that make clear the arrangement of any built structure: entrance, elevator, and stairs* (Man 1 who went blind 5 years ago).

> *I try to take some reference points: a door, an edge, or my favourite shop. I hear the noises, I feel the smells but they are not my reference points* (Woman 3 who is registered as a partially sighted person in later life).

Most of the reference points the partially sighted use to make measures in relation to their needs and their limits during the day disappear during the night and are sucked into a huge indistinct black spot. This is illustrated well in the words of man 3 affected by a very severe visual impairment from birth:

> *I already see few in the daytime, from sunlight to darkness is a dramatic change; the whole aspect of a street shifts from day to night. Therefore during the night my reference points disappear. I try to build the new ones with something bright, but in the absence of light, I am obliged to identify by touch the same reference points that I grasp by my residual vision during the day.*

In orientation and wayfinding process, the strategic link is the environmental image, the generalized "mental map" or "*representation of the spaces and the layout of a setting*" (Arthur, Passini, 1992, 23) that is stored by an individual from their everyday environment. Hence, spatial orientation and wayfinding are based on one's ability to form a mental map. For the blind, it is a conceptual leap that integrates into a whole (large scale) of what has been perceived in parts (small scale). In order

to build a whole representation of space – that incorporates spatial links between different points and previously explored locations – the blind, first must comprehend their own relationship to their reference points, as stairs, doors, furniture, streets, building entrances, etc. and then at a larger scale, in their mind, they build a three-dimensional scene from the relation between these points and the spatial layout. For the partially sighted, instead, the process of mental mapping is to discover the hierarchical representation of what lies under the totality. Once they are able to map out in their mind the overall configuration of the key paths and landmarks, their orientation within the space and their understanding of spatial layout will be made clear.

Then our discussion focused on how the participants acquire knowledge and build their mental maps of their surroundings. In this regard, one of the participants affected by the total blindness, offered a statement that was representative of the comments of many focus group participants.

> *I believe that each of us has their own method to build their own mental map. It is very personal. For someone, it is more convenient to refer to a traffic light, for someone else, to the ground, for someone else to empty space, because in our case it is the space that gives us the possibility to build our mental map* (Woman 1, who is fully blind from birth).

And then she went on to explain this issue by comparing it to the actions that are accomplished by the reader of a text.

> *It is like the time when you take a piece of book to read, a text, or an essay; when you are reading a book, your imagination also creates images in your mind. You "see" what you are reading. Someone reads it as a lightning and it is enough for him to understand, assimilate and repeat any concepts; while others need to review it by underlining the key points. We are not all the same; not even in this. What counts is not only creating the mental map, but also improving and correcting it.*

They are precisely actions of decoding, interpreting, translating, and maybe deconstructing which are compared to the act of recollecting, remembering and comparing that one performs when one builds one's own mental map. This mental image is the result both of instantaneous perception and of the recollection of past experience, and allows the visually impaired to understand their position in familiar and unfamiliar spaces as well as to understand which of the most appropriate **strategies** – whether linear and sequential or whether spatial and global – are to reach a given destination. What follow are the strategies cited by the participants of focus group which describes in a clearer way how they build the wholeness step by step and how they grasp the wholeness at once.

The eyes of memory: The built environment is also perceived through the mediating influence of memory. Perception merges memory with the actual percept, hence, we may be equally touched by something evoked by our memory as by actual experience. We can make the distinction between two types of memory; "***recognition*** *(re-cognizing): remembering an item in the presence of item and* ***recall****: remembering an item in the absence of the item*" (Arthur, Passini, 1992, 31). For small portion of blind people who live in the darkness from birth, recall is a synonym for risk. They do not rely on memory of their previous experiences to orient in an unknown space; they do not "trust" their imagination. "*I do not rely on my imagination. It could be a setback, something unexpected. If I cannot find the corresponding part of what I imagine in the environment, I have a very real problem*" (Woman 1, who is fully blind from birth). For whom goes blind in later life and for whom sees partially, their perceptions are also enriched by visual memories. They have never lost their visual images; they are likely to see with their mind's eye. They are able to remember the colours, shapes, and the sense of perspective which can be helpful in both familiar and unfamiliar environments. They can recall a space from another time and place. Most participants can easily identify with this interviewee's impression whose wayfinding strategy focuses on spatial memory.

> *I found myself in a supermarket for the first time. It was so familiar and predictable to me. It made me remember another supermarket that I had experienced when I was partially sighted. I could combine the learned routes of that supermarket, to the new configurations of this one, by my mind's eye!* (Man 1 who went blind 5 years ago).

Recognition, instead, is used both by the blind and partially sighted who remember their first experience of a place for subsequent visits. The memorization of the dislocation of objects is essential for them to orientate themselves and move independently through known environments.

> *Some little tricks allow me to memorize my surrounding, as counting the steps and doorways, remembering the angles, etc. I keep track of entrances, stairs, elevators and perhaps washroom locations. When I enter a place for the second time, I immediately look for these certain fixed points that give me the chance to remember* (Man 3 who is affected by a very severe visual impairment from birth).

Seeing with fingers: For the visually impaired in general, the sense of touch fulfils a fundamental task in the near spaces. Even for those who use a white stick as an extension of their body, it provides the sequential information about their surroundings. The sense of touch was described by many participants as being a central factor in determining their wayfinding and orientation strategy.

> *As a personal method, my first reference is always the wall on the right. When I'm near the wall, I know that nothing bad ever happens to me. I go on until I touch it with my hands. It makes me find out that I arrived to a certain point; from there I follow -with or without the stick – my route, tending to read its length, width and depth. I try to build up step-by-step its tridimensional scene. Afterwards the mental map helps me. For example at a certain point, there is a void, then I turn right; or I feel the step with my footsteps and I realize there is a pedestrian crossing. I know my path and where I cannot arrive with my eyes, I arrive with my hands* (Man 1 who went blind 5 years ago).

> *My spatial experience relies so much on the sense of touch; even if there is no light, there is my skin memory that drives me to find my way* (Man 3 who is affected by a very severe visual impairment from birth).

Their tactile curiosity forms lasting memories; as *Immanuel Kant* remarked: "*the hand is the window on to the mind*" (Pallasmaa, 2009, 25).

"Assembling the puzzle"

One of the strategies the blind uses for "seeing" the whole is translating haptic experiences in a useful architectural language. It is analogous to solving a large puzzle, in which structure is the key aspect. This interrelated strategy is built up over time, as one of the blind participants explained through his experience in a hospital.

> *When I was partially sighted, I worked for many years as construction worker. Hence, my experience of my surroundings still has a visual component: Geometry. For example I learned the overall circulation plan of a hospital, thanks of its geometric feature. First I discovered that the main corridor of the first floor is H-shaped. Then I enriched my mental map by getting a sense of each room. And then I formed a collage from the rooms and the way one room relates to one another. Overtime, by applying what I learnt on one floor to another, I discovered the overall layout of that building* (Man 1 who went blind 5 years ago).

Navigating the soundscapes: As we mentioned before, "*some blind individuals take advantage of echolocation, which is the ability to compute one's own location and the position of objects by sensing the echo emitted after actively producing a sound*" (Jacquet et al., 2006). Hearing replaces sight, in gaining an overall "view" of surroundings immediately; it is the only sense that permits the blind to embrace the wholeness at a glance. Soundscape is used by the blind as orientation aid not only in perceiving depth, direction and distance, but also in identifying openings and barriers. One of the participants confirmed this view by describing how he gains an anticipated and panoramic idea of an urban space, by its soundscape.

> *I associate the noises I hear with what is happening around me. For example I notice that I have entered a main street because of a sudden change in acoustics; outdoor traffic and noise from an occupant's activity also inform me about my position and show me the right direction.* (Man 2 who went blind at the age of 16)

"Overall layout" exercise

We investigated the ability of participants in understanding the overall layout of their surroundings, by asking them to sketch the layout of spatial arrangement of a coffee bar familiar to all of them (Figure 1). As we notice, the layout sketched by partially sighted participant shows more details than the one sketched by the late blind and early blind participants. But if we compare the plans drawn by participants with the one sketched by principal author, we notice that the nearest to reality is the one sketched by man 1, who went blind 5 years ago and knows geometry very well! The central column stands free as a common significant focal point in all the sketched maps.

ELEMENTS AND COHERENCE OF BUILT ENVIRONMENT FACILITATORES OR BARRIERS?

Each space has a different soul, unique and recognizable, which stems from its weather and light conditions, soundscape, tactility, smell, etc., and is more than a set of its components and their interrelations such as the location, shape and colour, the morphology of roads, street furniture and the way the built space is organized. The elements and coherence of built environment in some cases act either as "barriers" or "facilitators". In order to get a deeper knowledge of hindrances, and of the factors that facilitate and support visually impaired orientation, mobility and safety, the focus group participants were asked to describe the role these signals act in their experience of everyday life.

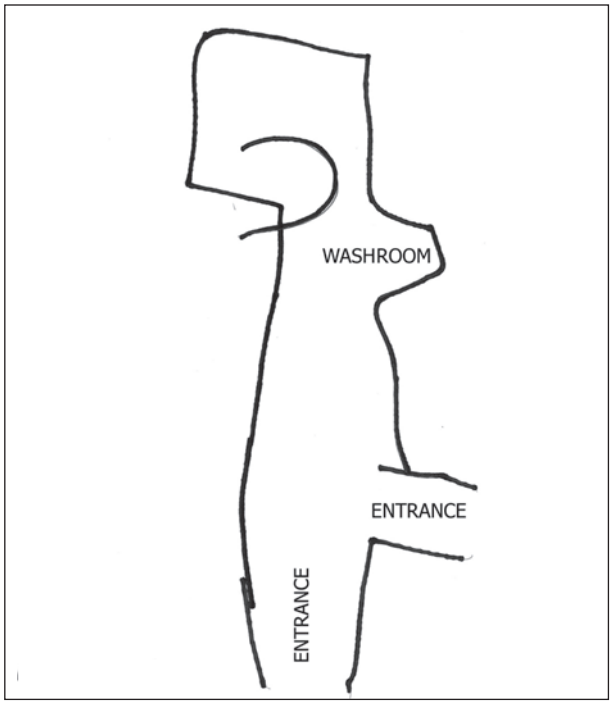

Figure 1a: sketched plan by woman 1, who is fully blind from birth, Trieste, 2018.

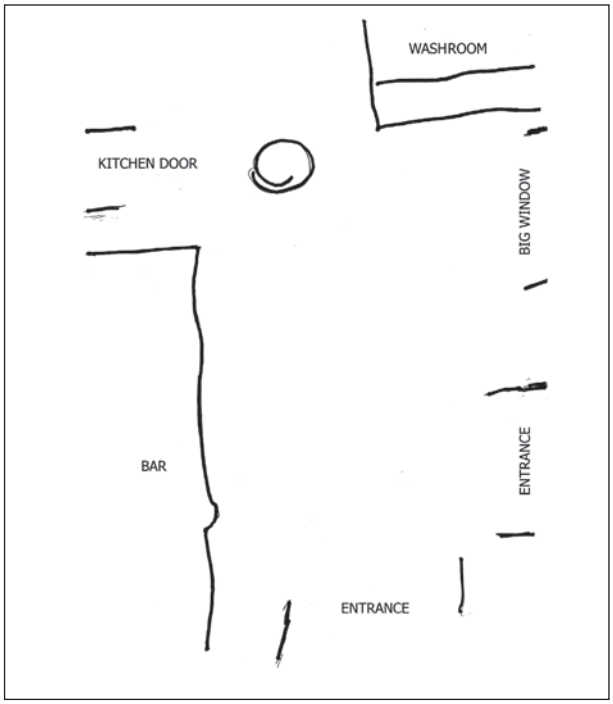

Figure 1b: sketched plan by man 1, who went blind 5 years ago, Trieste, 2018.

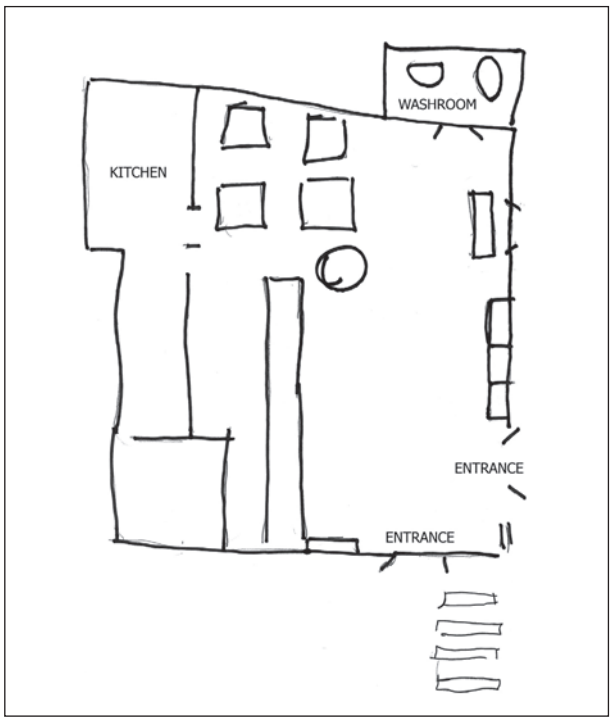

Figure 1c: sketched plan by man 3, who is affected by a very severe visual impairment from birth, Trieste, 2018.

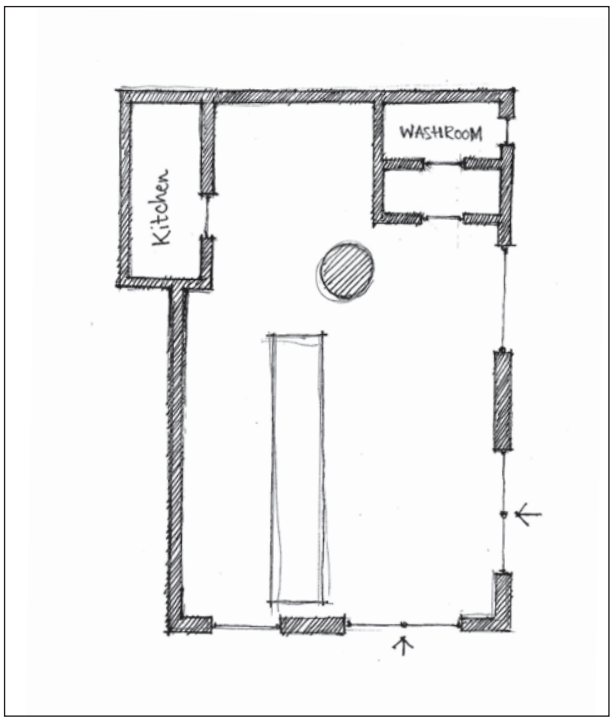

Figure 1d: sketched plan by G. A., Trieste, 2018.

Figure 1: Example of sketched maps for "overall layout" exercise. Coffee bar "Condor" Viale Miramare, Trieste, 2018.

Spatial layout and Shape:

To be able to move easily in a built space, it is essential that it should provide the right information through its principal characteristics, such as its "*spatial contents, forms, organization and circulation*" (Arthur, Passini, 1992, 84). This becomes even more important in emergency cases when there is a need to take faster and intuitive decisions. For example, if a space with its long corridors, invites you to go straight, it is hard to notice the small sign of safety instruction that indicates you to turn right. Nearly all the participants confirmed this view by talking about their dramatic experiences.

I went to a new supermarket for the first time. I kept spinning around for hours and hours not being able to find the exit! I experienced tremendous panic (Woman 4 who is partially sighted from birth) (Figure 2).

There is an underpass near station. You take it through darkness. The walls are covered by dark bricks. Fortunately, a dirty white line on top of the wall makes you notice when you have to turn right. Then, you find a big surprise, four unexpected steps! It is really dangerous (Woman 3 who is registered as a partially sighted person in later life) (Figure 3).

Materials:

Material was described as a facilitator by nearly all blind participants, there was a corresponding negative view described by partially sighted as well.

When navigating in the urban setting, for a blind person, it is really difficult to pick up their route in exactly the same direction. Some slight interruption or difference in texture become a useful reference point. For example when I pass through the main square, the narrow little strip of ground with its tactile quality permits me to keep the same direction (Woman 2 who went blind in later life) (Figure 4).

Undifferentiated texture is the other side of the coin.

I found a door which had the same texture of its surrounding wall, hence it could not be identified through the sense of touch (Woman 1 who is fully blind from birth) (Figure 5).

Some materials, as glass and mirrors, that visually communicate lightness and elegance become dangerous obstacles for us, especially in case of emergency (Man 3 who is affected by a very severe visual impairment from birth) (Figure 6, 7).

Soundscape: A silent nature is immobile. The sound gives a sense of depth and distance; it also represents movement in space. Difference of echoes gives an additional detail and dimension to the scene.

The city's soundscapes are not always experienced as reference points which support visually impaired orientation; an overload of sounds which are not related to the context is a real "noise pollution", especially for the blind. One of the participants immediately went on to comment on this issue.

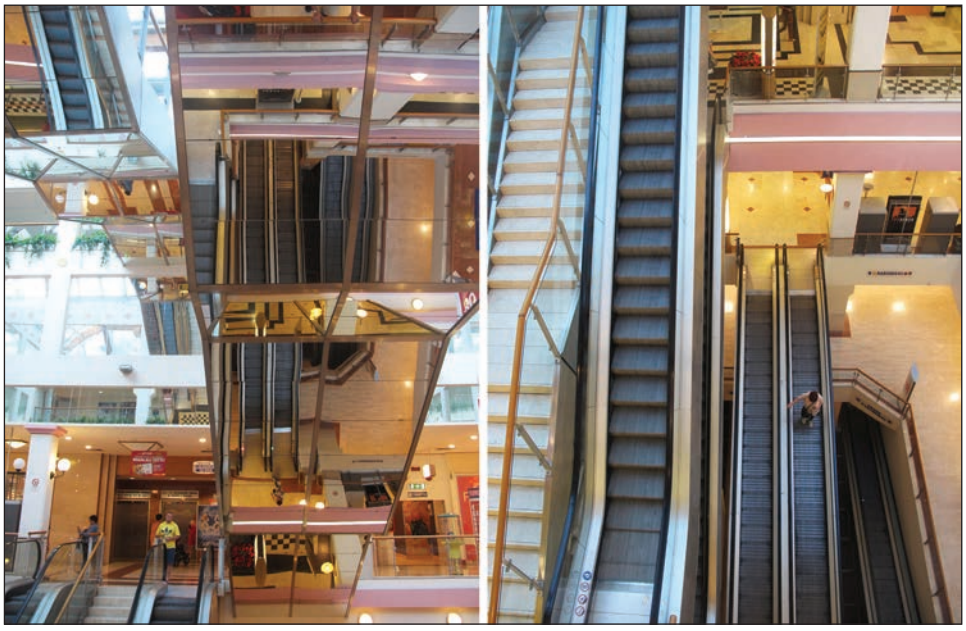

Figure 2: Spatial layout and shape as perceptual barrier, Shopping centre "Le Torri", Trieste, 2018 (Photo: Ghazaleh Afshary – G. A.).

Figure 3: Unexpected steps! Photo taken from two different angles, Piazza della Libertà Underpass, Trieste, 2018 (Photo: G. A.).

Figure 4: Difference of texture as facilitator. Piazza Unità, Trieste, 2018 (Photo: G. A.).

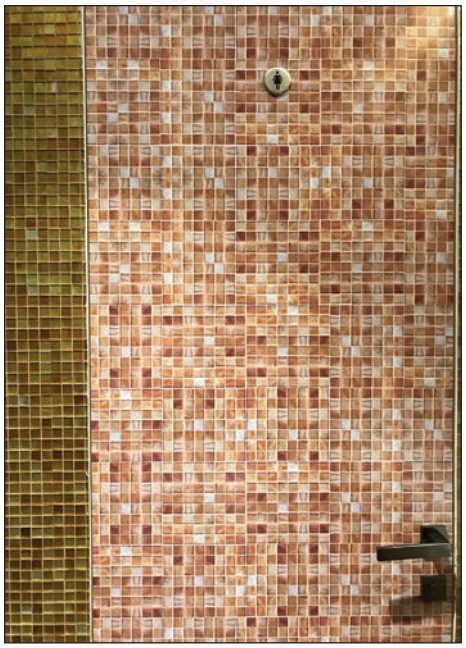

Figure 5: The door does not have any tactile contrast with its surrounding wall, Eataly, Trieste, 2018 (Photo: G. A.).

When there is too much noise, I cannot even go through my habitual route. The noise disorients me. For example, when I am walking on the street and at a certain point I have to cross it, the noise washes out and covers the rest of reality, and I am no longer sure to cross (Woman 1 who is fully blind from birth).

All the participants described that their full concentration is needed to navigate through urban spaces, and awareness is better when the environment is less polluted by noise.

What make me confused are the noises, the urban noises. Even if I am partially sighted, and the light bothers me, I have to confirm that what disorients me more is the noise (Man 4 who is partially sighted from birth).

Not seeing well, forces me to be always concentrated on "looking". In urban spaces my attention is diverted by urban noises; and this makes me lose my way (Woman 4, partially sighted from birth).

Light and Darkness: "*Being blind does not always mean a person is living in total darkness, in fact only 4%*

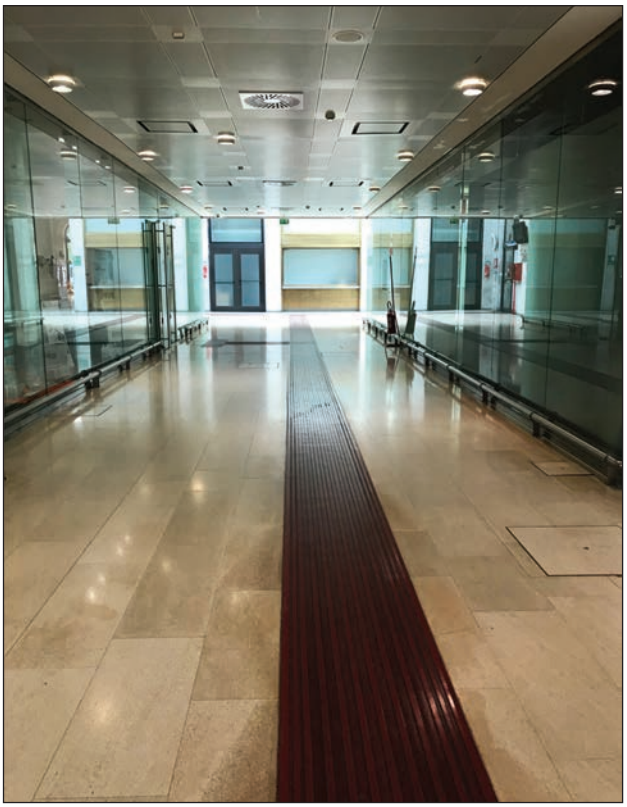

Figure 6: When a material creates an optical illusion! Railway station, Trieste, 2018 (Photo: G. A.).

Figure 7: Misinterpreting reflections in mirrors Via Giacomo Gallina, Trieste, 2018 (Photo: G. A.).

of registered blind people have no light perception at all" (NHS, 2014). This is reflected in the words of man 1, who went blind 5 years ago: "*I retain a certain light perception of which I make as much use as I can. For example in some cases natural light signifies to me as the possibility of an exit*".

Considering how partially sighted participants voiced on this issue, it should be emphasised that light and darkness play different roles for them in relation to the type of their visual disease. For those who suffer from the glare effect, homogeneous bright light can create an effect of total blindness; some others, instead, may experience "night blindness" in poorly illuminated places. However, for the partially sighted, there are some landmarks made "stronger" and contrasted because of being enlightened, as one of the participants affirmed: "*The darkness represents a quite serious moment for me, in fact, after sunset I do not see anything. Fortunately, nowadays, almost all the pavements of our city are enlightened; it is a great advantage for me*" (Man 3 who is affected by a very severe visual impairment from birth) (Figure 8). The inquiry into the situational and meteorological conditions indicates the importance of the light quality for the partially sighted user's well- being significantly (front/backlight, direct/dispersed, sharp/soft, glare, etc.).

Colours: Unexpected changes and strong contrasts in colour, for those who see partially can play an ambivalence role; as the participant below explained:

> *High contrast colours make objects easier to see, but I suffer from colour blindness. I notice the contrast but I cannot distinguish the colours. For example I do not see red lights. The red numbers on the screen in the post office means nothing to me; I cannot understand by myself when it is my turn* (Man 4 who is partially sighted from birth).
> *White colour annoys me; the white marble steps are really difficult to distinguish. Sometimes a decorative white strip on the floor, seems a step to me* (Woman 3 who is registered as a partially sighted person in later life).

Rain vs. snow:

> *Rain has a way of bringing out the contours of everything; it throws a coloured blanket over previously invisible things; instead of an intermittent and thus fragmented world, the steadily falling rain creates continuity of acoustic experience.* […] *Rain presents the fullness of an entire situation all at once, not merely remembered, not in*

anticipation, but actually and now. The rain gives a sense of perspective and of the actual relationships of one part of the world to another (Hull, 1990, 29).

Contrast is even stronger in the case of rain. I prefer cloudy days to have a clear sense of contours (Woman 2 who went blind in later life).

There is a saying: snow is the blind person's fog.

My problem is not instability but mobility. It is not that I become unsure of my footing, but I become unsure about where I am going. What I suffer in the snow is a loss of knowledge. All my familiar points and markings, the different grades and textures of grass, gravel, asphalt and concrete, are obliterated. […] *The problem, I explain, is that I cannot tell my route* (Hull, 1990, 156).
I feel terrible in snowy days, with all white around me. I feel a great effort in my eyes; it is like you want to see but you can't (Man 1 who went blind 5 years ago).

Stairs: It is paradoxical but stairs are easier to take by a blind person than a partially sighted one.

Once he is on it, a stairway is one of the safest places for a blind person. You never find a chair left on a stairway, or a bucket or a brick. There is never a stair missing from a stairway, and all the stairs are the same height. There is almost always a handrail or at least a wall to touch. There may be some uncertainly about the top step and the bottom step, but with the white cane, that problem is simplified (Hull, 1990, 102).

But for the partially sighted, going down or upstairs is not the same thing; the morphology of downhill stairs, if not well marked, can produce effects in terms of visual perception as a sort of „continuous flat surface" providing a source of confusion and uncertainty.

One evening in Venice, accompanying a blind friend to the station, I found myself along a wooden bridge that was so difficult to perceive. Seeing my difficulties during descent, my friend gripped in a couple of seconds his white cane and said: do not worry, attach to me and follow me! So led by a blind person, I went down without fear (Baracco, 2016, 48).

One of the participants confirmed this view by describing the difficulties she has with stairs and steps:

Going down or upstairs is not the same thing for me; going upstairs, I receive more visual information from alternation of risers and treads; instead, going downhill, I have difficulty in discriminating the steps, I see them straight (Woman 3 who is registered as a partially sighted person in later life) (Figure 9, 10).

Urban furnishing: On the one hand urban furnishing is a hindrance for the visually impaired; on the other hand, it can become a fix point that guides and enriches their movement trough urban spaces. Therefore, even the benches and the bins can become important sources of information on what is going on around.

If you do not use them in your favour as possible reference points, they become a form of barrier. It is important that their presence can be checked by the white stick (Man 2 who went blind at the age of 16) (Figure 11, 12).

Signage system, designed for visually impaired users: While for people with impeded or reduced mobility capacities, barriers are identified in physical and visible obstacles, for people with visual disabilities barriers are identified by "absence" of directions and measures that will indicate the presence of any obstacles or sources of danger.

A smart signage system is expected to complement and enhance the information already perceived from the environmental context, making the obstacles recognizable for the blind and the partially sighted; as a common thread able to accompany the visually impaired with continuity along their chosen route. These communicative artifacts concerns not only signposting but also tactile and podotactile signage for the blind; a sequence of points and reference lines which constitute the main points of an environmental report system for them. The focus group interviewees expressed their opinions about several aspects of a signage system in orientation and wayfinding. When we asked about the usefulness of tactile maps, one of the blind participants said: "*I prefer to lose myself!*" (Man 2 who went blind at the age of 16). Another blind participant voiced a commonly held view expressed by many of participants.

Acoustic signals at traffic lights and "LOGES" (an Italian acronym for a system of the tactile paving for the visually impaired) build a highly reliable network of references for me. The tactile maps no! Before they can be used, they have to be found! Furthermore they require a long period of training in order to be used. For example I have difficulty in reading braille and in interpreting the raised letters and numbers (Man 1 who went blind 5 years ago) (Figure 13).

The signage system is perceived completely different by the partially sighted as one of the participant pointed out:

They become useless for me, simply because I cannot read them! In effect, the main road has become a kind of urban nightmare with a mass of signals in competition, one more glaring and dazzling than another, a nervous and frantic conglomeration of visual chaos (Woman 3 who is registered as a partially sighted person in later life) (Figure 14, 15).

ENVIRONMENTAL LEGIBILITY, COMPLEXITY, AND FAMILIARITY

One of the most widely studied theories in environmental psychology is the complexity/legibility. "*Different environments resist or facilitate the process of image-making*" (Lynch, 1960, 7). "*One of the environment's most striking characteristics is its complexity*" (Arthur, Passini, 1992, 34). An "imageable" (legible) space, "*has a quality which gives a high probability of evoking a strong image in any given observer*" (Lynch, 1960, 9). In literature, many concepts are used to define legible/complex environments, but what does legibility/complexity mean for the visually impaired? From the findings of our studies discussed here until now, we can use two labels for legibility: global and local legibility. Global legibility means how immediately a scene is perceptible or visible from great distances. Local legibility means how well a scene is perceptible or legible in a smaller scale, giving the opportunity to be approached and explored by users. Global and local legibility are used in different ways by the blind and partially sighted; for example the global legibility depends as much on sounds for the blind as on visual qualities for the partially sighted, and the local legibility is perceived visually by partially sighted and haptically by the blind. Hence spatial legibility is the ability of space to form a wider mental image which supports the visually impaired in the acquisition and memorization of spatial knowledge. In environmental legibility the most critical points are the "anchor points". The anchor points are where the journeys start and end (entrance and exit areas), where the first and last impression is created; the anchor points are also where a person has to choose among more than one direction both horizontal and vertical. The higher legibility can be obtained when the anchor points acquire landmark quality, in this manner they can be better memorized by the visually impaired.

Considering the above, the complexity (illegibility) is what renders the visually impaired unable to generate, maintain, and use a mental map; in other words, it challenges the spatial awareness of the visually impaired. Complexity is a mismatch between visual disability and environmental legibility. Environments that are hard to represent mentally are also difficult to orient in.

What the blind find difficult are smooth, open spaces. It is just these areas which are assumed by many sighted people to be best for the blind,

Figure 8: Enlightened pavements and bollards, Piazza Unità, Trieste, 2018 (Photo: G. A.).

Figure 9: Visual perception effect from two different angles, Riva Tre Novembre, Trieste, 2018 (Photo: G. A.).

Figure 10: The morphology of downhill stairs as a sort of "continuous flat surface"! Ponte rosso, Trieste, 2018 (Photo: G. A.).

Figure 11: Urban furnishing (mail box) as barrier, when its presence cannot be checked by the white stick. Via Cesare Battisti, Trieste, 2018 (Photo: G. A.).

Figure 12: Urban furnishing (bollard chain) as barrier, when its presence cannot be checked by the white stick. Corso Cavour, Trieste, 2018 (Photo: G. A.).

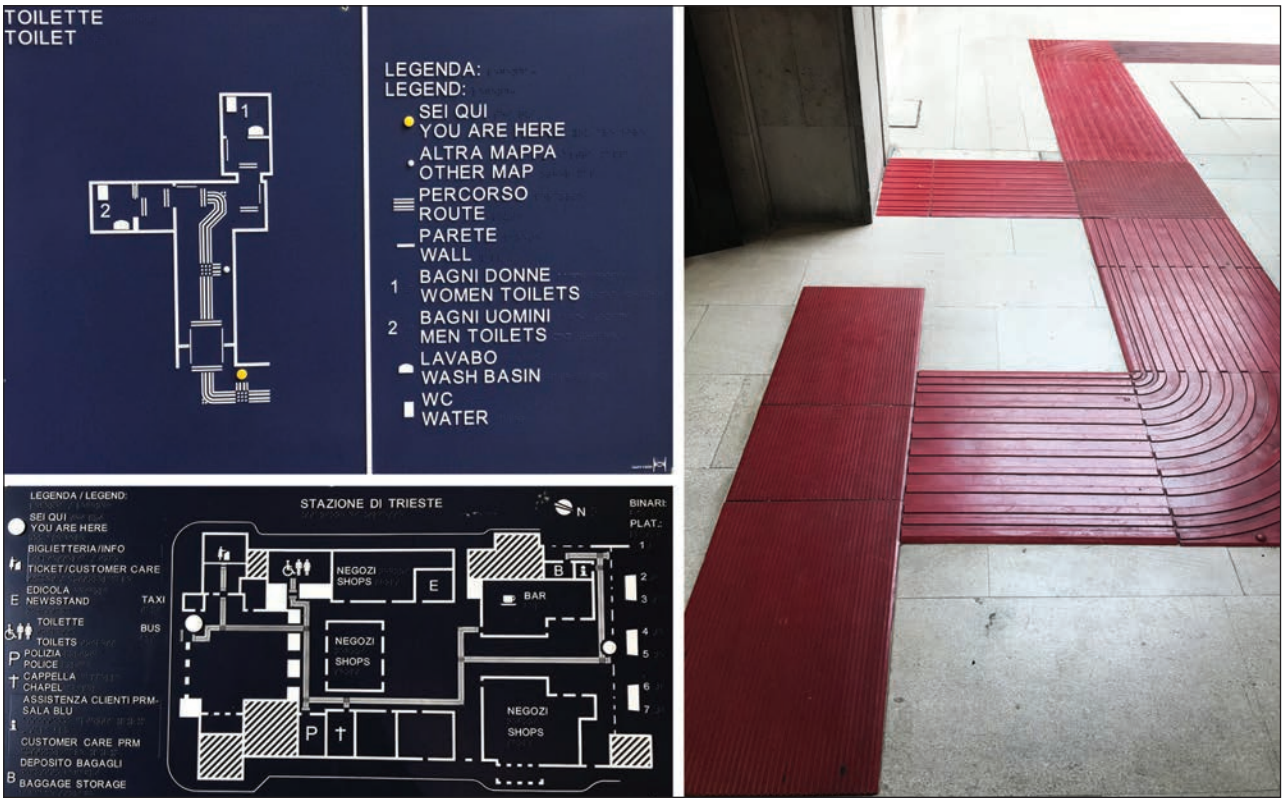

Figure 13: An example of tactile maps and "LOGES", Railway station, Trieste, 2018 (Photo: G. A.).

Figure 14: A mass of unreadable signals! Viale Miramare, Trieste, 2018 (Photo: G. A.).

Figure 15: When the signage system does not respect the hierarchy of information. The bus timetable is so smaller than an advertisement board. Largo Barriera Vecchia, Trieste, 2018 (Photo: G. A.).

> *because there is no danger of tripping. From the blind point of view, however, a flat, open surface is not negotiable because there are no orientating signals. There is no structure. It is not predictable, because it may end at any moment, and there is no way of telling where you are, once you are on it. The problem for the blind person is not falling over, but knowing where he is* (Hull, 1990, 103).

At worst, this kind of spatial complexity can lead the blind to total lostness. It is important to note that "*the blind person lost has neither direction nor position. He needs position in order to discover direction.* […] *This is such a profound lostness that most sighted people find it difficult to imagine*" (Hull, 1990, 145). On the other hand, it can be assumed that the blind use direction in order to discover their position. The partially sighted, instead, cope with complexity in ambiguous and poorly organized settings where all seem equally important or equally unimportant. The lack of useful, understandable and strong landmarks or an overload of visual messages which are not related to the context, does not allow the partially sighted to recognize the hierarchical underlying principle of spatial organization. This level of spatial complexity can induce, in those who see partially, real panic sensation or, in the best case, bring a strong discomfort and insecurity for them while walking.

The focus group participants were asked to explain or give an example on what a complex environment and/or legible environment means to them. An attempt was made to understand how differently their mental representations and wayfinding behaviours are influenced by environmental legibility and complexity. In a significant number, the participants, when they were asked to talk about the highly legible environment, stressed that they cannot identify the legible/ideal space in reality; they can only imagine what it would be like.

For the woman (1) who is fully blind from birth, the complex place is the "silent" place. Where there is nothing to hear.

> *A mute building is like a book without a title and without a table of contents. It does not say what it contains and it does not say how it is structured. It deprives the users of a unique opportunity to gain an overall understanding of the setting* (Arthur, Passini, 1992, 139).

The legible/ideal place, indeed, is where favours the sense of hearing over sight and permits her to move freely through all of its spaces. A place that can be marked out by its sounds, smells and lots of changes in textures.

For the woman (2) who went blind in later life, the ideal place exists in its imperfections that - almost like a museum of time – expresses its age and presents its accumulated history. Old places have soul which invite the viewer to touch the story of who ever lived in. Hence for her, the illegible places are the modern ones. The flat, 'immaterial' places that tend to present their unyielding surfaces to the "eye", locking them oppressively in to a visual field without transmitting their character or age.

For the man (1) who went blind 5 years ago, undifferentiated large open areas present particular challenges in wayfinding. The ideal place for him is a space whose width is such that he can reach and touch its walls; "*these are the vertical architectural elements to which he can relate at his own personal and human scale*" (Halprin, 1972, 117). They encourage his movement and even channel his direction. The walls describe the edges and give a sense of enclosure, as the trees enclose spaces as walls of green; this is the best way for him to achieve legibility through real complexity.

For the man (2) who went blind at the age of 16, the ideal place is where he knows well and understands the links between its different areas. In such a place, he can even change his route when necessary. When he is incapable of developing an overall plan of a setting, he remembers only the path he experiences with its starting point, a sequence of spaces it passes through, and the destination. What complexity means for him is when the order of this route that he memorizes with difficulty, is ruined; he cannot construct the mental model of the original route when a fragment is missing or another part is added. He gave an example of when his habitual route is closed for construction.

For the woman (3) who is registered as a partially sighted person in later life, the most challenging places are the ones in which there are numerous shifts in levels. Going down stairs for her is always a great obstacle to overcome. She also suffers so much in absence of light. She illustrates an ideal place free from obstructions, enlightened and with visual contrast, with legible stairs and steps that take the visually impaired in to account.

The woman (4) who is partially sighted from birth, gave an example of the place that seemed to her as a distressing labyrinth. She found impossible to learn the layout of the place. The circulation system remained a mystery for her. Each zone looked just the same as she visited before, making her feel disoriented and lost. Hence, the legible place for her is the place with spatial identity.

The man (3) who is affected by a very severe visual impairment from birth, describes urban spaces as complex spaces. The ideal urban space for him is the one that guarantees the visually impaired to reach the destination safety and independently, with an access to means of transport, with the legibility of public transport stops, creating a safe path, highlighting the obstacles along the path, with pedestrian crossings made on the needs of the visually impaired, etc.

For the man (4) who is partially sighted from birth, the illegible place is where a shout cannot be heard; the noise pollution covers everything, devouring the sounds that guide him. Everything that becomes unknown, incomprehensible, and threatening makes him feel more and more uncertain. For him the ideal urban place is sparsely crowded to permit him to hear the echo of his footsteps on the paving.

Focus group discussion also denoted an interesting view on the **familiarity** of the visually impaired with the built environment. "*Not surprisingly, familiarity has a predominant impact on the acquisition of spatial knowledge*" (Li, Klippel, 2016). In a familiar environment, the partially sighted do not require the acquisition of new orientation strategies; the same does not go for the blind, for whom the predominant role is still played by environmental legibility. This latter issue is well captured in the words of two blind participants:

> *I have always felt so safe on the stair in front of my house that I know it's every single step. When I come down the stairs, it is like I see; I even do not use my white cane. One day I found an unexpected scene. The steps became rest room for a homeless! I ended up in hospital. These "obstacles" are not expected to be "seen" on steps* (Woman 1 who is fully blind from birth).

This is very shocking indeed for the blind. However, these barriers are not surprising for the partially sighted because they can see these obstructions and therefore they are able to bypass them safely.

> *I know the way to my house like an owl knows its tree. Little disturbing noise of traffic and sounds of the street have specific meaning to me. One day I left home at 5 o'clock, in the silent darkness of the night. I did not find any connection to the street where I was born and grew up. I got lost!* (Man 2 who went blind at the age of 16).

In such a situation, the blind discover a contradiction between what their memories tell them to do and what the environmental legibility/complexity tells them to do. Which one do they believe? For the blind, legibility is more important in terms of security than familiarity.

It is important to stress that what may be a surmountable wayfinding difficulty for the partially sighted user may become an impossibility for one who is blind and vice versa.

THE DIFFERENCES AND COMMONALITIES OF THE BLIND AND PARTIALLY SIGHTED USERS OF SPACE

In this paragraph we discuss the themes which had emerged from the comparison of the data generated in focus groups' discussion. The third phase of analysis highlighted some hidden physical, psychological and psychosocial aspects of visual disability in relation with an inimical environment. We label them as relevant findings which are built on commonalities, diversities and ambivalences in partially sighted and blind experiences.

Differences

As is illustrated elsewhere in this paper, the needs of the blind and partially sighted are actually very different. Furthermore, their criticalities are felt in different forms according to various environmental conditions. This diversity that is largely ignored by most of the researchers, is a crucial issue in this paper. Compared to partially sighted, the fact of not having visual distractions permits the blind to be more focused on messages of different natures; while the partially sighted tend to rely almost solely on the residual vision and to favour the use of vision compared to the other senses. Sometimes there is an obvious rejection from the partially sighted to use the same mobility aids that the blind use, such as white canes. As a result, their visual disability is part of the so-called **"invisible"** disabilities. This diversity is the first aspect we wanted to highlight. This experience of not being noticed as visually impaired was described by all the partially sighted participants. The white cane is an important symbol of sight loss which ensures that the blind can receive social support to handle barriers in the built environment; for the partially sighted is not the same. This need to be helped, instead, was described ambivalently by the blind participants. Some of them were convinced that, in asking for help, their weak side appears clear. One of the participant who is blind from birth add nuances to how help is understood by the blind.

> *It is these offers of help which really disable me. It is also easier for me to remember a route if I experience it by myself than if I follow a route passively guided, by holding onto the elbow of the sighted person* (Woman 1, who is fully blind from birth).

Another type of ambivalence is referred to using the "assistive devices" by the blind. The white stick – as an extended part of the body – is still the auxiliary that is most used by the blind. Some of the reasons for which the technological solutions are not widely used by them are, the complexity of these devices for their use, their being bulky and in the most of the cases the lack of reliability. Furthermore, for those who are blind from birth and for those who have known the world of light for a few years or part of their life, the situation is different. The first ones do not feel blindness as a deprivation, for the second ones, instead, the search for a communication channel that substitutes sight is absolutely necessary and urgent.

The experience of people shifting from partial to total blindness in relation to environmental conditions requires further research. Especially if this is happening in a short period of time. The process of adaptation to blindness is another issue.

Commonalities

There are also some facets that make the stories of the blind and the partially sighted common: The need to concentrate more intensely on details to overcome the barriers and to build the safe route in the built environment, as pointed out by the partially sighted and the blind, puts a restriction on their ability to experience architectural and urban spaces as a stroller ("flâneur"). Thus, they try to build a different but possible way to experience the emotion: **autonomy**, understood as the ability to manage one's own life in the first person.

Uncertainty is another common thread that links the participants discourse. Uncertainty for the one who is immersed in darkness becomes even denser. They feel the presence of the fear of unexpected barrier in every moment.

Nearly all the participants expressed a common frustration with dramatic **"changes"**; changes in urban environment, changes in technologies, as well as changes in their impairment level across the lifespan. Today the ability of the visually impaired is more and more put to the test, also because of the rapid transformation of the cities and more and more widespread use of technologies which are developed on the visual cues. Cities have become more crowded and complicated. Traffic, urban furnishing, work in progress, and exterior modifications have changed the urban landscape in an unexpected way. All these changes, as well as the one the visually impaired experience in their abilities throughout their life course, make the environment more challenging for their living.

One participant put an exclamation point on the issue of concern to all participants. It happens very often to find that exactly the same citizens are the ones who erect the barriers; obstructing the release of the visually impaired by motor vehicles, bicycles and other artefacts, making them feel painfully disabled. This inattention, indifference and the loss of sensibility on the needs and problems of the visually impaired are all manifested in the most resistant, invisible and insurmountable obstacle which we might call "**cultural barrier**".

Focus groups' meetings also demonstrated that such a dialogue involves a **knowledge transfer**, new ideas and concepts for both the researcher and the participants; it creates an atmosphere of **reciprocal trust** which guarantees collaborative process during the subsequent steps of research.

SEEING THE WORLD FROM SOMEONE ELSE'S "EYES" / WORK IN PROGRESS

We hope that this paper can open a discussion on how focus group application is effective and evaluative in supplying information to researcher's repertoire. It can influence and orient as guideline throughout the whole research process, giving an opportunity to researchers to gain multiple perspectives on their topic of interest. We designed a study that enabled us to achieve richer data that go beyond the verbal and observational aspects by combining both. This method uncovered aspects of the lived experience of the visually impaired that are typically inaccessible through other means of research. The visually impaired collaboration and input became a key element in our study. The findings discussed in this paper highlight the complexity of this topic and reveal some questions and curiosity that call for more research. There is a saying: "*The shaping of the question is part of the answer*", and a starting point for the acquisition of further information. Our plan is to extend our investigation with an enriching experience, making a journey with the visually impaired through a pre-selected route under time constraints where there is no room for mistakes. The purpose of our future study is to understand how time constraints and emergencies affect the wayfinding behaviour, strategies and challenges of the visually impaired in complex environments. It may suggest new interpretations, as well as connections with data collected through focus groups.

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POVZETEK

Kot prispevek k bolj poglobljenemu razumevanju izkušenj slabovidnih ljudi in izzivov, s katerimi se srečujejo pri gibanju v arhitekturnem in urbanem prostoru, predlagamo metodološki okvir, ki vključuje posameznike v študijo kot aktivne akterje. Predstavljamo pomembne izsledke razprave ciljno skupino slabovidnih. Zanima nas, kako slabovidni dejansko razumejo in izkušajo okolje, ki ga dandanes ocenjujemo predvsem z vidika vizualne estetike. Med kriteriji za izbor sogovornikov so podobni vsakdanji problemi in potrebe. Intervjuji so bili izvedeni maja in avgusta 2018 v prostorih UIC (italijanske zveze slepih) v Trstu. Obravnavali smo izhodiščno dojemanje prostora kot celote, orientacijo s procesom oblikovanja slike o prostoru in vlogo arhitekturno-prostorskih elementov oz. povezav kot pomoč ali oviro pri tem (npr. zasnova prostora; zvok, barve, materiali, osvetlitev – v povezavi z vremenom; specifični elementi, npr. stopnice). Ugotovili smo stične točke in razlike med slepimi in slabovidnimi, kot zelo heterogeno skupino z vidika interakcije z okoljem. Med skupnimi izkušnjami obojih sta iskanje možnosti avtonomnega gibanja v prostoru, velik pomen prostorskega spomina pri tem, negotovost (presenečenja v že znanih razmerah), pa tudi indiferentnost drugih uporabnikov prostora, ki se ne soočajo s podobnimi težavami. Po drugi strani pa so npr. slepi s svojimi potrebami v prostoru očitni, medtem ko se slabovidni soočajo s skritostjo svojega stanja. Z rezultati študije želimo spodbuditi raziskovalce k razmisleku o bogastvu izkušenj, ki ga ponujajo specifični uporabniki prostora, ter o vlogi teh izkušenj v snovanju prostorskih rešitev.

Ključne besede: slabovidne osebe, ciljna skupina, orientacija, iskanje poti, miselni vzorec, čitljivost, celovitost, domačnost

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