OUR VIEW ON THE COLLABORATION BETWEEN BLIND AND PARTIALLY SIGHTED PEOPLE AND DESIGNERS AND WHAT WE CAN ACHIEVE TOGETHER

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Abstract

In this paper, Tomaž Wraber shares his personal and engaging experience of visual impairment and blindness and systematically demonstrates the importance of accessible design through his experience of serving on a number of national and international bodies. His story begins with the early discovery of his low vision and with his parents, who allowed him to be educated in the mainstream system. This gave him a broad cultural and intellectual base that helped him to cope with his sight loss later in life. He points out that rehabilitation is crucial for people with sight loss, but also attaches equal importance to the role of society in ensuring accessibility. The author looks in detail at various aspects of accessibility, from architectural adaptations to the design of digital content, and is critical of the lack of inclusive design. He pays particular attention to the design of visual communication, signs, and typography, pointing out that designers should also take visually impaired users into account when designing. Using a number of examples (tactile communication in space and on products, adapted keyboards, and audio-descriptions), the paper shows how thoughtful design can improve the lives of people who are blind or visually impaired. The author concludes with the idea that designing accessible environments is not just a technical issue, but a reflection of society's empathy and willingness to include all people equally in public life.

PERSONAL STORY

Deviating from conventional norms of academic articles, I want to begin my contribution with a particularly personal touch. Shortly after my birth, my mother, a defectologist, observed that as a baby I did not respond to her presence in the room, but only to the sound of her voice. Naturally, my mother immediately suspected something was very amiss. Shortly after I turned one, an ophthalmologist examined me, discovering that my vision was less than 50 per cent. Due to severe myopia, I was prescribed glasses with a dioptre of approximately minus five before I was even two years old. At that time, I was supposedly one of the youngest people in Ljubljana wearing glasses. Back then, children were not individually assessed and placed, but were categorized either for mainstream or special education schools. As my mother was a teacher at a special education school, she was not only a member of the categorization commission, but served as its head for an extended period. Her significant contribution involved the introduction of a process for re-assessing, re-evaluating and re-categorizing children assigned to special education schools just before they commenced their education. Through her observations, she discovered that some of these children could overcome years of developmental delays within a short period, as brief as half a year or less, and demonstrated the necessary abilities to be enrolled in mainstream schools. I am unaware and do not recall whether I was assessed by such a commission, but I do know that the 'school system' decided to enrol me at the Institute for Blind Youth on Langusova Street in Ljubljana. In response, my mother, a defectologist, my father, a biologist and internationally renowned scientist, and his grammar school classmate and close friend, esteemed psychologist Prof. Dr Anton Trstenjak, formed an *ad hoc* commission specifically for my case, which is today known as the Commission for the Placement of Children with Special Needs. The specifics of my evaluation process are unknown to me, but after the assessment and a thorough deliberation, the commission arrived at an unambiguous conclusion: my parents were to enrol me in a mainstream primary school.

At that time, terms like 'integration' and 'inclusion' had not even been dreamed up, let alone was the school system prepared for such an 'oddity'. Only decades later, did I realize how much my parents had really risked and what I truly gained by receiving my education in a mainstream school. This insight came when I was a member of the governing board of the Union of the Blind and Partially Sighted of Slovenia (UBPSS), where I was responsible for education, rehabilitation, and matters concerning children with special needs. I came to understand that, in many ways, the Institute for Blind and Visually Impaired Youth focused on teaching its students 'how to be blind' rather than equipping them with the skills to lead their everyday lives as normally as possible. I became aware of the immense favour my self-appointed 'commission' had granted me. Looking back, I recalled a series of struggles and doubts my parents had endured, which I, as a snot-nosed carefree child, was blissfully unaware of and which they had chosen to keep from me.

Not wanting to lag behind my older brothers and sister, I enrolled in the classical class of Prežihov Voranc school after completing the fourth grade of primary school in Spodnja Šiška, and then continued my education at the former classical grammar school on Šubičeva Street in Ljubljana. Throughout those eight years, from the second half of primary school to the end of grammar school, I was fortunate to be surrounded by an incredibly stimulating environment, filled with incredibly positive challenges on a daily basis, thanks to the diverse array of classmates. Needless to say, we did not avoid any of the adolescent foolishness, but we also pushed each other to absorb as much knowledge as possible about a wide range of subjects, especially about literature in all its forms, music, fine arts, film, theatre, and all that Ljubljana had to offer. Contrary to popular belief today, cultural opportunities in Ljubljana were far from scarce during my youth. We visited almost all the theatre performances, exhibitions, and concerts, and we watched most of the films that were new in cinemas. We never ran out of time for cultural events, and even for us, tickets were not too expensive back then. Alone or with the scouts, we roamed

the hills and the Slovenian countryside. Vinyl records of classical music were too expensive that we could borrow from each other, but the situation was different when it came to fine art. The Italian publisher Rizzoli was publishing a large collection titled *I Classici dell'arte Rizzoli – Opera completa*, which featured the complete body of works by some of the most important painters in the history of art.[1] These books were probably cheap for Italians (1000 lire each), but for us they were relatively expensive. Therefore, we co-ordinated our purchases to avoid duplicates presenting the same artist. In the end, our combined collection included about a hundred books with the works of the most important painters in art history. We would lend each other books and then engage in discussions on the individual artists and their works. I soon built an almost complete art collection in my mental library, and over the following decades, when I visited the majority of the world's most important galleries and museums, I rarely encountered a prominent work of art that I had not already formed a vivid impression of before seeing the original for the first time. Among these, I was most impressed by the original of El Greco's *The Burial of the Count of Orgaz* in a Toledo church. Its grandeur left a profound impression on me that few other works of art have ever matched. As our exploration of visual art was complemented with the study of general history, music, literature, films, and a few foreign languages, all of which we absorbed so effortlessly during our secondary school years, we built an extensive mental library of ideas, images, concepts, and connections, granting us unhindered access to all the diverse realms of human culture.

During the end of my adolescence, and even a bit beyond, my dioptre rapidly increased, and by the time I was around 20 years old, I wore glasses with a prescription of minus 20. The lenses were so heavy that my nose had blisters and so thick that they left abrasions on my cheeks. My eyesight slightly deteriorated every winter,

1 Each large-format book contained at least about 50 full-page colour reproductions of the painter's most significant works, along with black-and-white reproductions of their other pieces in the final section. Basic information about all the works was also added.

improving to some extent during spring. Despite this, I could read, go to the cinema, even drive a car … Until one spring, when my vision did not improve, nor did it get better the following year, and, what is more, every winter it worsened more than the previous. What followed was the onset of a severe and rapid crisis, during which my vision deteriorated daily, and shortly after turning 30, the ophthalmologist estimated that I had only 1.8 per cent of vision in my better eye. Any residual vision below 30 per cent is defined as partial-sightedness, while any residual vision below five per cent as blindness. This categorization is also in line with the International Classification of Functioning (ICF).

> I am sure you are already wondering why I am bothering you, my readers, with this story.

Firstly, because it is important to know that not all blindness is the same, nor is partial sightedness. The reason for this may not necessarily stem from the five distinct categories used to classify the conditions of individuals according to the *Definition of Blindness and Partial Sightedness of the Republic of Slovenia*. This classification is very important in practice. The cause and the modality in which someone lost (or was progressively losing) their sight and the length of the deterioration process, as well as the age at which vision loss occurred or began, are elements which significantly influence how the individual will navigate everyday life. In addition, personality and other individual traits can also be the underlying factors determining whether someone faced by partial or total sight loss either becomes truly incapable of confronting the challenges of everyday life when or is able to function in life as if nothing special has changed, even in the case of total blindness, seemingly overcoming almost every difficulty.

Today, I am aware of the extraordinary privilege of being sent to a mainstream school by my parents, where I encountered outstanding individuals who—much like my home environment—held a deep appreciation for art, science, culture, education …

I am grateful for having retained a significant part of my sight long enough to read most of the world's most important works of literature, become acquainted with the majority of works by the world's most renowned classical composers, engage with a significant portion of creations by the world's most important dramatists, and explore the art of almost all of the world's most prominent visual artists. There are likely few individuals with such a robust spiritual foundation and a vast library of concepts from which to draw the immeasurable spiritual riches accumulated over millennia of human civilization, as I have been extremely fortunate to do.

And again, you might ask, why the need for this explanation? Within the UBPSS I founded the Blind and Visually Impaired Intellectuals group and served as its chairperson for several terms. The group's primary objective was to meet the exceptional demands for knowledge and, in particular, culture among its members who harboured such desires. Visits to museums and galleries were one of the frequent forms of our activity. The exhibition of Leonardo da Vinci's technical inventions at the National Museum of Slovenia was enriched with reproductions of his masterpieces to offer a more comprehensive insight into his genius. After an excellent guided tour with detailed verbal descriptions of the exhibits, the guide led us to the last room and said: "And here is Leonardo's famous Mona Lisa!" One of the older members, an educated and knowledgeable man who became blind as a child during the war, surprised us by asking: "What type of painting is that? Is it a nude, a portrait, a full-figure painting or something else?" This question made it strikingly apparent how significantly the perception of images differs—not only of paintings, sculptures, and artworks but also of the real world—depending on whether one is blind from birth, has lost their sight as a child, or became visually impaired as an adult. The Mona Lisa, an undeniably recognizable icon for a sighted person, held no reference for him until the guide provided him a very detailed and truly illustrative description of the face, the posture of the hands, the visible part of the sitter's figure, the sfumato background in which the landscape behind the figure is

lost, and, naturally, the enigmatic smile. I have not the slightest idea what mental image this gentleman formed in his imagination or how he interpreted the famous enigmatic smile in the portrait. However, after the guide's vivid description, he was evidently content and undoubtedly enriched by a concept that had previously been unknown to him.

This instance serves as compelling evidence that it is possible to make visual art accessible to the blind and partially sighted, presenting it in a way that enables them to form their own interpretations and probably also experiences of the artwork. It is irrelevant that we do not know what this mental image is really like. Do we truly know what form a visual artwork takes in the mind of a sighted person? Did they truly perceive, recognize, and comprehend the elements of the painting in the same way as someone else with equally good eyesight? The vision of one sighted person differs from that of another and, even more so, the image constructed by brain based on the optical signals received from the eye. Trust me, I have plenty of experience with how relative the sense of sight is, and how people with perfect vision can perceive, for example, the same work of art in completely distinct ways, to the point of noticing and recognizing very different elements in the same piece.

BLINDNESS AND PARTIAL SIGHTEDNESS

The percentage of blind people with total vision loss unable to even perceive light (amaurosis) is relatively low. Most individuals classified as blind according to the definition of blindness and partial sightedness retain at least minimal residual vision, and many even have residual vision that can be very useful (under the right conditions). It is widely accepted among the professionals in the field that for every person who is blind (by definition) there are at least ten people who are partially sighted. However, the general public remains unaware of this fact as blindness and partial sightedness carry a strong social stigma, compelling the majority of people with severe visual impairments to frequently conceal their condi-

tion even to those around them (whether it is partial sightedness, let alone blindness). This decision subjects them to a range of daily challenges. In my four decades of engagement in this field, I have witnessed and experienced much, but public attitudes towards blindness and partial sightedness in Slovenia have not significantly improved (much like in other parts of the world). Many still conceal their partial sightedness, which, to be honest, is considerably easier to hide than total blindness. And you will not believe this: I am familiar with a case from Slovenia where a family kept their blind son hidden at home until he was 42 years old, fearing that he would bring them shame.

This does not mean that there have not been considerable improvements in many respects, or that the current circumstances are the same as they were a hundred years ago. While enormous progress has been achieved, there is still room for further improvement.

After partial or total loss of sight, the most pressing need for an individual is rehabilitation. Rehabilitation has to be comprehensive; to reintegrate into daily life, a person needs to learn and develop such a vast range of practical abilities and acquire so many new social skills related to various situations that the majority would be unable to achieve these goals without assistance. But before all else, they need psychological support to come to terms with their new condition (which is not easy, I assure you) to the point that they view life as worth living and find the strength to try to stand on their own feet once again. This requires a considerable effort on the part of the rehabilitation team, which requires an interdisciplinary organization; however, it is the individual themselves who bears the greatest burden of effort in the rehabilitation process. The rehabilitation can be successful only if the rehabilitee (i.e. the person who is yet to be rehabilitated) is willing to invest the effort—which can sometimes be immense—to acquire the necessary skills to become a rehabilitant (i.e. the person who has been rehabilitated). Nevertheless, this represents just a part of the efforts involved.

The second, equally important aspect referred to as 'accessibility' is the responsibility of a society striving for welfare and inclusivity.

MY VIEW ON ACCESSIBILITY

Many people associate accessibility only with lowered pavement kerbs or ramps, sometimes accompanying staircases. While high kerbs, steps, and similar features do pose barriers to wheelchair users, they are far from being the only elements that hinder accessibility. Due to my personal experience, my perspective on accessibility is very clear.

Above all, I view accessibility as the possibility for everyone to have physical access to all private and public areas in both buildings and outdoor spaces. Physical access is a prerequisite for enabling any other forms of access and fostering inclusion in all the social processes that occur within these spaces—whether temporary or permanent—as part of everyday social life. I am not referring to various social events (though not excluding them), but rather to all the fundamental processes in which we, as members of society, engage on a daily and permanent basis. What often goes unnoticed is that many of these fundamental processes remain inaccessible to a significant portion of society. This is particularly true for the blind and partially sighted, but also the deaf and hard of hearing, as we experience the greatest level of discrimination when it comes to inclusion in this aspect of social life. Finally, accessibility also encompasses equal possibilities of access to all the information that, in modern society, is essential to receive education; acquire training for various jobs and professions; acquire training for performing essential daily tasks; make everyday or vital decisions; or simply navigate urban environments.

All of this, and probably more, constitutes accessibility, and I believe that design is closely linked to it or can sometimes even be a prerequisite for ensuring equal access.

THE BROAD FIELD OF DESIGN AND USER EXPERIENCE

I would like to share some of my thoughts on design in different areas, providing examples for clarification.

Design can be a very broad concept. For millennia, we have transformed untouched nature by designing our dwellings through interventions in the landscape, creating urban environments that enable planning. We (re)design nature to facilitate our activities and establish equal relations with other people, plan and design a range of everyday objects, and design communal buildings that house various human endeavours, such as educational, economic, scientific, cultural, and more. For these purposes, we design spaces, objects, and relationships essential for seamlessly performing countless human activities, ensuring they bring benefit to humanity. We design and plan groups perceived as optimal to carry out various processes, as well as the skills deemed essential to achieve the desired outcomes. It may be slightly confusing to some readers that I am equating planning and design; I do so not only because the term 'design' can encompass both concepts, but also because I believe these two ideas share the same origins in the distant history of civilization. I will not speculate on which came first: planning or design. Many experts, far more qualified than myself, have likely explored this question. If design planning indeed pre-dates design, I believe that human civilization made a significant leap forward when design extended its influence to planning for the first time, regardless of the underlying cause.

I am also convinced that design should be an indispensable component of the purely technical aspects of any creation. Considering the denotation, I assume that already the ancient architects viewed load-bearing elements as a 'necessary evil' in contrast to non-load-bearing elements, and yet both types received equal attention in their design (think of the ancient columns). This attention should be sustained even in some contemporary, purely technical planning. Initially, this might seem unnecessary, as the technical aspect remains largely hidden. I am referring to the sub-

optimal accessibility of most websites, which incorporate both visual and technical design. A limited number of websites support Slovene speech synthesis, and even on those that do, blind users often have to wade through a mountain of clutter before accessing the desired text.

As millions of people use Microsoft computer programs, this software has established a somewhat monopolistic presence. The desire to stay connected compels those of us who are blind and partially sighted to use these programs as well. However, their usage is not accessible to us because they were not planned and designed with the needs of blind and partially sighted users in mind. We have to purchase additional software that allows us to work with Windows. Personally, I use ZoomText, which costs almost EUR 1000. Annual updates cost me approximately EUR 100, and after five or six years, I have to repurchase the base software as well as updates for the following four years. But that is only the financial side of the problem. The other, perhaps even more frustrating aspect is that Windows software is developed by one company, while the programs that render them accessible to blind and partially sighted users are created by several other companies. As a result, despite the rapid progress of information and communication technologies (ICT), compatibility issues between the two essential types of software are a persistent problem for us. We encounter these issues daily when working on a computer, sometimes multiple times a day. For instance, conflicts between Windows and ZoomText (or other adaptive software) commands often lead to computer freezes or failure to execute the command. While I have complete confidence that an expert computer engineer confronted with such a situation would be able to ingeniously resolve these issues, we often find ourselves in predicaments, leaving us unsure of how to proceed. This occurs because software designers overlook the needs of those who are blind or have low vision.

Similar challenges are experienced by those of us who, due to blindness, can use a personal computer only with the assistance of the Slovenian speech synthesizer *Govorec* ('Narrator')

and its add-on, *eBralec* ('eReader'). One of the authors of Govorec explained to me that Windows is like a castle with five hundred rooms, and that the programmers (planners, designers) who developed Govorec can only access about a hundred of these rooms. This limitation allows for only partial adaptation and leads to unexpected bugs, which can hinder or even prevent smooth operation. While it is worth noting that these issues are becoming less frequent, speech synthesis can still come to a sudden halt during reading. Occasionally, the software 'takes a few minutes off' before resuming its function, and in some instances the computer simply freezes, requiring a force quit and reboot. This can result, for instance, in the loss of a significant part of a just written text or a number of other problems.

Word offers features intended to make work easier or possible for people from 'vulnerable groups' as individuals with disabilities are sometimes referred to. I have tried to use these features myself and I have found it impossible to work with them. What is more, I do not know any blind or partially sighted person who can confidently say that these tools are sufficient for their computer work. This makes me wonder why Microsoft did not hire the same developers who created ZoomText, for example, to integrate it into Windows, which would enable seamless functioning and performing simultaneous updates with the operating system. Is this ignorance or profiteering at the expense of disadvantaged groups?

This situation is similar to the practice, only recently changed, of first constructing high staircases and then adding ramps (at substantial additional costs) to enable various groups to overcome the height difference. However, this approach completely overlooks the fact that stairs (whether leading up or down) in most cases also pose a serious mobility barrier for the majority of blind and partially sighted people.

Although modern legislation (including Slovenian) has contributed to a significant reduction of architectural barriers compared to just a few decades ago, it has by no means eliminated them entirely. For this reason, even in architecture, which is un-

doubtedly one of the most important areas of human design (involving public and private spaces), issues persist, despite architects having generally shown an inclination towards designing spaces accessible to all groups. In Slovenia, one of the first to systematically address architectonic accessibility, was the architect Marija Vovk, but her work has been largely overlooked. I found particularly informative my discussions on accessibility in architectural design with Prof. Stanko Kristl. I could listen for hours to his calm and particularly quiet explanations about designing fluid spaces in buildings that seamlessly flow into each other, serving their various purposes without creating barriers for anyone, regardless of their condition. He also provided observations regarding efficient transportation of patients in emergencies to places where medical teams can help them survive. What I do not know is whether he put these valuable observations and insights in writing.

In contrast to architecture, industrial design tends to be less noticeable, despite its constant presence in our mundane and complex daily tasks. Poor industrial design is probably not just visually unappealing to the sighted but can also create challenges for people with disabilities, who may find it very difficult or even impossible to perform a certain task.

Many still remember Iskra's black Bakelite telephones, which were first replaced in the 1970s—a period marked by significant development in Slovenian design—by the ATA 20 and ATA 60 models. These new telephones, made of lightweight, multicoloured plastic, featured rounded sides, gently softening their angularity. They were a real hit, both at home and around the world. But towards the end of the 1970s, Iskra introduced an even greater achievement, the ETA series, which offered several telephone models.[2] I was most impressed by the ETA 85, which, instead of a rotary dial, had a 12-key keyboard, on which

2 I have seen ATA and ETA series telephones in museums in the US, Amsterdam, and elsewhere, so it is unsurprising that fakes of these two series were being produced all over the world.

I instantly learned to type accurately. I also found the aesthetics of the model to be superb, with the handset fused with the telephone base as if it were its integral part. Since the headset was always black and the body was typically red or yellow, I could always locate the headset easily, as I still had some residual vision at that time. I was surprised, however, when one of our top designers responded to my compliment by commenting that the handset should be fully exposed, preferably as in the telephones from the interwar period where it was mounted on a high fork. The headset was separated in a way that made it nearly impossible to miss with a sweep of the hand. It took me some time to grasp the correctness of this assessment. The keyboard, which eliminated the need to painstakingly count the holes on the rotary dial with a finger (to find the right number), was undoubtedly a significant improvement, but the headpiece fused with the base actually proved to be a disadvantage in terms of accessibility.

One major problem that sighted people may not even notice is the inconsistency between numeric keypads. The layout of numbers on computers is, in fact, inverted compared to phones, with the exception of zero, which is located at the bottom in both cases. In other devices with physical or tactile keyboards (such as ATMs and credit card terminals), the number arrangement may follow either that of a computer keyboard or mirror the layout of a telephone keypad. This inconsistency is a source of significant and unnecessary confusion, in particular for blind and partially sighted people, and cannot be justified on either economic or design grounds. Even sighted people have complained to me about this issue. Despite years of drawing attention to this situation, there has been no interest in addressing it seriously and working towards a uniform and universally binding layout for all numeric keypads in the world. Imagine if the hands on some clocks ran in the current direction while on others in the opposite direction! Or if municipalities had the power to independently decree whether traffic runs on the right- or left-hand side of the road.

It is also worth mentioning that tactile keypads without audio feedback are becoming an increasing problem. A decade ago, I successfully convinced the Slovenian expert committee to vote at the EU level against adopting new standards for control panels in lifts. Our position prevailed, preventing the EU from introducing into its legislation tactile control panels for lifts without audio support. What is more natural for a blind person than to slide their fingers along the wall of a lift until they feel the control panel? If the physical keys lack markings, a blind person can still attempt to find the key corresponding to the desired floor by counting. On the other hand, if they touch a tactile keypad the lift might take them to a completely unfamiliar floor. How can a blind person handle such a situation?

A visit to the toilets in the European Parliament in Brussels was a particular experience. When I wanted to wash my hands, I carefully felt the entire water tap, including the spout and the sink, as well as its immediate and less immediate surroundings and even the wall behind it, searching for a lever or buttons to turn on the water. There weren't any. Then I searched all around the tap for a sensor that would detect my hand's proximity and automatically open the water. Nothing! I used my shoe to check if there might be a pedal under the sink counter that would activate the water flow, but again, there was nothing! I repeated the process a few times, my nervousness growing. As I still had not left the toilets, a partially sighted colleague, who had seemingly guessed the reason for my delay, came in and said: "Tomaž, you turn on the water by twisting the very top of the tap," saving me from this situation. At the end of a very long spout there was a tiny piece that could be turned in either direction to control the flow of cold or warm water. This little component could not be distinguished from the spout as there was no discernible visual contrast or dilatation that could be seen let alone perceived by touch, neither was there a texture that was different to touch. In other words, even for the normally sighted it was probably insufficiently identifiable. The designer, carried away by the desire to achieve the perfection of form, failed to consider other aspects.

In the past, the design guru Jacques Séguéla caused a real cultural scandal in France. In an advertising campaign for an old-fashioned upholstered armchair (Vaterstuhl), in which you can easily fall asleep, your arms draping over the armrests as your head remains supported by two side headrests, preventing any wobbling, he chose the slogan: "Merde au design!"[3] His aim was not to denigrate design outright but rather to emphasize that design has sense especially when it also serves a practical purpose. What actually sparked a revolution was the use of the word 'shit' in advertising, which caused countless controversies. Due to the polemics, the chair became known to virtually every person in France. The effect, probably multifaceted, was achieved.

VISUAL COMMUNICATION DESIGN AND THE CONCRETE CHALLENGE

The terms 'graphic design' and 'visual communication' have a wide range of meanings. Reading, which is one of the most complex functions the brain performs, is among the initial and most significant challenges that individuals face when experiencing progressive vision loss. However, by using an appropriate font this problem can be reduced for an extended period. Dr John Gill, who for many years headed the RNIB's[4] Scientific Research Unit, and his colleagues developed the Tiresias family of fonts, which are specially adapted for the blind with residual vision and partially sighted. As it has not yet been widely adopted, the European Blind Union (EBU) recommends the use of Arial or Verdana, in bold and sizes 12 or 14. It is crucial that the text is in an upright and sans serif font (italics and serifs are to be avoided as they significantly hinder the recognition of characters). Moreover, the text has to be reproduced on a matt (never glossy) background with maximum contrast. Nonetheless,

3 The sense of the slogan can be translated as: "Screw the design!"

4 RNIB – Royal National Institute of the Blind People is not a scientific institute, but the largest organization for blind and partially sighted people in the UK and one of the most important in the world.

through serious commitment and by incorporating user testing, designers can likely provide a better solution.[5]

In addition to signs, many symbols assist us in navigating both outdoors and in buildings, but their design is frequently neglected, making them challenging for the blind and partially sighted to notice and even harder to read—an issue that affects a growing population of older people as well. One such symbol, which I believe is best adapted to the environment and its purpose, is the Slovene inventor Alojz Knafelc's trail blaze invented more than a hundred years old. Its simplicity and colour contrast, tailored to its surroundings, make it an almost unmistakable guide, even along intricate mountain or forest paths. I am almost certain that more people get lost in public buildings than in the mountains. Is it really impossible for a designer to create something similar to the Knafelc trail blaze that would be comparable in function but adapted to the conditions of urban space?

Although the design of corporate identities, logos, and various other symbols has become a real science, it appears to me that no designer or design team has considered the possibility of incorporating tactile elements into, for example, a logo, making it as easily recognizable as the Mercedes star. Would this really be a too daunting task for the myriad of Slovenian studios?

A few years ago, I was surprised when some members of our Union proposed that we should work towards a uniform toilet label as well as separate labels for men's and women's toilets. As bizarre as it may sound, this proposal stems from the numerous experiences of blind and partially sighted people, who have wandered around bars without assistance, struggling to find their way and ultimately make the correct choice between two separate toilet spaces.

5 Some projects in this area actually already exist: for the Braille Institute of America, Studio Applied Design Works from New York designed the Atkinson Hyperlegible font, which is freely available on the Google Font platform. For more information on legibility in typography, see the article by Černe Oven in this publication (ed. note).

What I described above usually involves a reduction of all non-essential elements, purification, and simplification; conversely, illustration (regardless of its nature and purpose) allows for much more artistic freedom. The minimalism of logos, for example, gives more scope for spatial and tactile representations than illustration. Most would throw in the towel simply stating: "That's impossible!" Aleš Sedmak proved otherwise by proposing his idea that inspired a group of students and, subsequently, professors from various art academies abroad, realizing the impossible: a publication with tactile illustrations of birds, which was followed by two publications featuring insects and marine organisms. I cannot confirm if he was the first in the world, but he must have been among the pioneers in this field and more importantly: his experiment succeeded! And then there was a second attempt, followed by a third attempt, and it can be concluded with certainty that each one of them represents a significant improvement from the previous. Experience with issues always led to new and better solutions. I am both hopeful and confident that this project and its vision will endure, which instils optimism for even greater achievements.

A few years ago, I became friends with Dr Joel Snyder from the USA, who is one of the leading experts in audio description, i.e. the process of providing descriptive narration for films, theatre performances, gallery and museum exhibits, cultural monuments, etc.[6] I invited him to deliver a presentation on the fundamentals of audio description for Slovenian national television. The event was aimed at a broad professional audience and took place over the course of an afternoon. Later, I persuaded him to come to Ljubljana for a whole week, during which he conducted basic training for audio description providers. An increasing number of Slovenian films and TV shows are now equipped with it this type of audio narration. What if, in collaboration with Dr Snyder, we also attempted to offer audio descriptions for the

6 Films pose the greatest challenge, as the description of the shot and its action has to be very accurate and inserted into the very short pauses between dialogue, allowing blind and partially sighted people to follow the action of the film.

blind to accompany works of design and other visual pieces (in addition to providing tactile copies, descriptions in Braille, and enlarged print)?

I have already mentioned the encounter with the Mona Lisa. All sighted people or those who had retained their vision for a sufficient number of years have a mental collection of artistic icons (the Venus of Willendorf, the Pyramids of Giza, the Acropolis of Athens, the Venus de Milo, Michelangelo's David, the Eiffel Tower, Munch's The Scream, Guernica, etc. to name just a few that immediately come to mind). This mental repository accompanies us throughout our lives, providing the basis for making connections, evaluations, and metaphors. But, as I have mentioned before, in this regard, I consider myself immensely fortunate in life! Why not try to make these cornerstones and treasures of human culture more accessible to those who have been blind since birth? And also: why not extend this approach to artworks that are not immediately recognizable or instantly memorable? Moreover: why not expand it to encompass as much as possible of the artistic wealth created by painters and sculptors over more than two millennia? Nevertheless, in all these scenarios, it is crucial to always consider and respect the unique starting point of each individual.

All this is yet to be realized, and although it may seem impossible, the results of Aleš Sedmak's efforts prove that it is worth making an attempt. Nothing is impossible.

> In an attempt to synthesize these somewhat unsystematic reflections, I can derive a few insights.

Design holds a significant, albeit sometimes unnoticeable, presence across a vast array of human activities, such that its contributions often remain overlooked. It is likely that much of this has already been widely explored and clarified within the professional field and potentially even systematically categorized. Even though design is present in our everyday life, from mundane tasks to the heights of human culture, we lack familiarity with this systemati-

zation and therefore fail to appreciate or recognize contributions that are a result of good design. In general, we only become aware of design when faced with frustrations as in the case of a spoon that is uncomfortable to hold or makes ladling soup a challenge; a frequently used object with an irritating handle; an environment that complicates our search for something essential; an object we deem aesthetically unappealing, etc. In other words, we are quick to notice shortcomings but have difficulty identifying good solutions. If theoretical reflections on design (in the broadest sense of the word) were more present in the public consciousness, a sensitivity to a more accurate distinction between good and bad design would develop as well. In addition, systematic categorization makes the problems in this area of human creativity clearer. Once the problems have a name, we usually realize that they have already been solved, at least partly, or the solution no longer seems distant. Theoretical research contributes not only systematics and order (not in a negative sense) but also connections, which can generate new and higher value and often pave the way for designers to develop better solutions.

What conclusions can be drawn about design that enhances accessibility, promoting the highest degree of inclusive equality of blind and partially sighted individuals in private, professional, and public life? The situation in Slovenia is not optimal, yet it could be considerably worse. Traffic lights are increasingly equipped with acoustic signals, and the Tactile Floor Guidance System is becoming more prevalent on the pavements of Slovenian cities and towns. It is true that the Tactile Floor Guidance System is not always implemented according to standards and professional norms, and it is also a fact that bars and restaurants often obstruct these guided pathways by placing tables on them, but it is equally important to recognize that many blind and partially sighted individuals still lack adequate knowledge about the straightforward rules of the Tactile Floor Guidance System, which is designed for easier and safer navigation. However, it is here and its presence continues to expand.

The biggest issue might lie in the fact that, in practice, we as a society are hardly aware of the importance of 'creating a society for all'. Consequently, the initiative is driven almost exclusively by empathetic individuals or, more concerningly, those who may have a financial stake in it, which unfortunately, is not uncommon.

The only long-term approach could be offered by increased theoretical research targeted at detecting and identifying the challenges that blind and partially sighted people encounter across various aspects of life in order to inform solutions, which can be achieved through design and planning. This would also improve the quality of life for the large population of elderly people in Slovenia, which is in rapid growth and is typically affected by vision problems.