

Mapping Access: A Tool for Social Change

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Abstract

Access for disabled people can be mapped for several purposes, using different methods and tools. After briefly reviewing some of them, this article shows how mapping access can serve not only to provide useful information, or to delve into the complex meaning of access, but also as a tool for social change. Through the analysis of a case study – a collaborative, emancipatory action research, carried out by a group of disabled people – the main methodological issues to be considered in mapping projects are listed. The dilemmas discussed concern choices about the people to involve, the sample, the digital tools, the features to map, the tension between describing and evaluating access, and the role ascribed to access law. Through this discussion, useful guidance is provided for researchers who design mapping projects. In conclusion, this paper examines how the public display of maps concerning access can foster social change, engaging local media and politicians. In particular, it is suggested that the availability of data on barriers may influence the discourses about the feasibility of access.

1. Introduction

Mapping barriers to access for people with disabilities¹ is a challenging endeavour, undertaken periodically with different aims by various agencies: disabled people's organizations, researchers, public administrations, small start-ups and big tech companies.

Maps can be developed to help disabled people find accessible locations. This is the main function of dedicated apps and websites, like WeGlad or Wheelmap, but information about access is also included in mainstream apps, like Google Maps. These systems are based on crowdsourcing, but referring to a group of access experts is another option. This latter approach is used by organizations that produce digital or paper guides for disabled tourists, describing accessible attractions and tours.

Another potential aim of gathering data about barriers is preparing plans for their removal ("PEBA"). In Italy, municipalities should have been doing this since 1986, but provision is still widely disregarded. Nevertheless, there are some examples of administrations which have developed complex mapping systems for the PEBA's (Garofolo et al., 2022).

In some cases, mapping projects are carried out for research purposes. They can simply describe the current level of access in a defined area, or describe some categories of facilities

¹ Being fully aware of the evolving debate on person-first vs. identity-first language, I chose to use both interchangeably.

(Lewis et al., 2005), but they can also problematize the mapping itself, exploring and expanding the meaning of access and of disability. Hamraie, for instance, involved university students in assessing the accessibility of their campus, «not to produce an objective spatial representation but to enrol broad publics in the iterative, troubled work of defining and detecting access» (2018, p. 456). The author defines their work as differing from «compliance mapping»: while the latter only evaluates whether the laws on access are respected, the «socio-spatial practice» proposed in their study recognizes the expertise of people with disabilities, who may still encounter many barriers even in “compliant” spaces.

This article presents a mapping project that, while including some of the previous goals, is mainly aimed at something different: promoting social change. Namely, it pursues the removal of barriers by fostering the implementation of municipal regulation regarding access.

In fact, the city of Bologna (Italy) in 2021 updated its local building regulations with the “*Linee Guida per la visitabilità degli edifici aperti al pubblico*” (“Guidelines for the visitability of buildings open to the public”). The *Linee Guida* require all places open to the public to make some improvements to accessibility within two years. Mandatory improvements include small adjustments like providing entrances with ramps, or installing doorbells to ask for help to enter the building. The innovative part of this regulation is that it asks for action to be taken within a deadline, regardless of whether a renovation was already planned or not. In addition, non-compliance can be sanctioned by the local authorities.

As the implementation of the *Linee Guida* appeared to be slow, a group of disabled activists co-designed a study to both promote the knowledge of this regulation and to scientifically ground their claims. The group was initially made up of myself and a collective of disabled university students, and was later joined by other disabled and non-disabled people. Volunteers went door-to-door measuring the accessibility of shops, restaurants and other establishments. In the meantime, they informed shopkeepers about the obligations of the *Linee Guida* and offered access to a technical consultancy service.

The collected data were then used as tools for activism: maps filled with red markers representing barriers were presented in front of politicians and published by local newspapers; members of the local council asked to join the mapping process. This constitutes a form of «data activism», which employs data to fulfil aims of social justice (Lehtiniemi and Ruckenstein, 2019).

This mapping can also be framed as a collaborative and emancipatory (Stone & Priestley, 1996) action research (Stringer, 2007), involving people with disabilities as co-researchers. During the collaborative process, a mapping method was co-designed, applied and adjusted. The purpose of this paper is to discuss the methodological issues emerged in this co-design process, providing an in-depth, non-exhaustive discussion of the questions and dilemmas to be considered in this specific kind of accessibility mapping. These issues are analysed alongside the literature concerning the concepts of access, disability and emancipatory research: it enters into dialogue with the choices of the group of co-researchers and the practical problems encountered on the field. To ensure a clearer connection between all these aspects, the needed theoretical references are presented together with each question, and not in a dedicated theory section.

To sum up, this paper 1) provides a useful guide for designing participatory studies concerning barrier mapping; 2) shows how mapping barriers can promote social change. Rather than suggesting a ready-made recipe on ‘what to do’, however, it offers guidance on

‘what to wonder’ while mapping accessibility. This approach draws on feminist disability studies, calling for a methodology of questioning (Kafer, 2013: 18) which «asks difficult questions but accepts provisional answers» (Garland-Thomson, 2002: 28).

The discussion section provides a list of core questions to consider. It shows how the methodological choices are influenced by various factors, including the practical goals – like the need to gather data suitable for «data activism» (Lehtiniemi and Ruckenstein, 2019), rather than for a mere description of the environment – and the researchers’ disability, which could «crip the methodology» (Price and Kerschbaum, 2016).

2. Method

As this paper does not present the results of the action-research (likely to be published elsewhere), the “data” discussed here are those concerning the mapping process, and not the mapping results. The “method” described in this section is, consequently, the method used to collect and analyse information about the process of co-designing the mapping.

This process took place between September and October 2022 and included a lot of meetings and communications between me and the co-researchers, as well as a focus group. I took notes on the meetings and the other communications, while the focus group was recorded and transcribed with the help of NVivo software. The focus group transcript and my notes were later coded using NVIVO. 78 codes were found. 19 of them described methodological issues of the mapping process, and were therefore considered relevant for this paper and analysed.

These data were integrated by my experience as a disabled researcher, using an auto-ethnographical approach. To ground it, a careful consideration of reflexivity is needed (Cardano, 2001). Being a wheelchair user, I am in the hybrid position of scholar and activist, as typically happens in action research (Brydon-Miller et al., 2003). My knowledge of access issues comes from a mix of personal experience, study and years of activism. On the one hand, this allows me to have an in-depth understanding of some of the technicalities which might be relatively obscure for an outsider. Also, it has granted me the privilege of being viewed as a peer by members of the student collective. This has allowed me to listen to some very honest opinions, like the straightforward comments of some volunteers about the risks of involving non-disabled volunteers in the research (see *infra*).

On the other hand, I am aware that I do have my personal view on access, which is influenced by my individual needs. Some features of the mapping method that will be discussed in this paper, like the co-design of the research with a group of disabled people and the reliance on access law, are intended to mitigate the effects of my possible bias.

3. Discussion: The question(s) of mapping access

3.1. WHY mapping access? Defining the goals and the method

In the autumn of 2022 I was contacted by a collective of students with disabilities who wanted to map the accessibility of bars and study areas in Bologna, in order to help disabled students enjoy the city. They asked for my help. At that moment I was working on my Phd research about the implementation of the *Linee Guida*, so I proposed to join the efforts and co-design an

action research. The collaborative method and the presence of a practical aim, in fact, seemed to constitute the right ingredients for that kind of study (Brydon-Miller et al., 2003).

As Stringer (2007) points out, the first step in action research is to define the problem experienced by the community involved. To this end, in the early stages of the project the group consulted an expert disabled activist and professional. He dampened their enthusiasm about mapping: barriers had been mapped several times without obtaining their removal. Furthermore, the resulting maps remained mostly unknown among users and quickly became out-of-date. In the end, several scattered maps of access existed, had required a significant effort to be created, but their usefulness appeared questionable.

This narrative is a good starting point for understanding how this study's aims were defined – and changed. These issues were discussed in the student collective; in addition, I informed the group about the *Linee Guida* and its slow – if not absent – implementation. They were not aware of this regulation and learning about it changed the discussion. The definition of the problem we wanted to address quickly changed: from “We need a map of accessible places” to “We want more accessible places” and finally to “There is a regulation (the *Linee Guida*) which could massively increase the number of accessible places, but it is still unknown and ineffective: we want it applied”.

In this way, an aim of social change (*making* places accessible, not only mapping them) was added to the project. Now, two practical goals coexisted: 1) helping disabled students to find accessible places; 2) fostering the implementation of the *Linee Guida* (and therefore better access).

The group defined a primary research question which pursued both goals: “To what extent do places open to the public in the city centre of Bologna comply with the *Linee Guida* requirements on access?”. Answering this question was needed to 1) create a map of (in)accessible places, and 2) provide data to be used as a tool for activism, grounding the request for implementing the *Linee Guida*. The social change aim was also pursued by adding some actions to the mapping method not specifically designed to collect data but rather to inform and help shopkeepers improve accessibility.

3.2. WHO collaborated in the collaborative research?

The mapping was carried out by a group of about 20 volunteers with and without disabilities (members of the collective or recruited through social networks). They attended a two-hour online training session to discuss and improve the research method, then they were divided into groups of three, and each group was assigned a street. Each member of the group chose one of three roles: 1) Measurer, who took pictures of the establishments and filled in a Google form with measurements; 2) Informer, who talked to the shopkeepers to explain the study and the *Linee Guida*, and to offer a technical consultancy service provided by a non-profit organization; 3) Observer, who took notes on the shopkeepers' reactions. The latter role was introduced to complement the larger research I was carrying out for my PhD, concerning the shopkeepers' perception of access.

Introducing a discussion on the problem of “who” participates in the research, it is important to first consider the role of the researchers. The strong involvement of disabled people as researchers and co-researchers makes the mapping closely aligned with the principles of emancipatory research. According to Zarb (1992), in this kind of research the «participation»

of disabled subjects is not enough: the emancipatory model requires that the research participants with disabilities have full control of the means of research production. Priestley and Stone (1996), drawing on the work of scholars like Touraine, Zarb, Hunt and Oliver, propose six criteria to define emancipatory research. To sum up, it must be «committed to a social analysis of disablement and to the development of the disabled people's movement», requiring researchers to ask themselves: «What will the research achieve in terms of improving the lives of those whose selves become 'sources' and whose meaning becomes 'material'? Will it achieve any more than furthering academic careers and publication lists?». According to Oliver (1992), the relevance of a study about disability should be judged by considering whether it helps to identify and remove social and physical barriers: this is exactly the kind of relevance that the mapping was seeking.

Normally, the importance of an emancipatory paradigm is emphasized as it challenges a situation where the non-disabled researcher is in a privileged position, compared to the marginalized group, which is treated as a passive object of study.

In this case, however, the context was slightly different. Firstly, being disabled myself, like some members of the student collective, the power and privilege imbalance was smaller. I still had a privileged position because of my role of researcher and my previous knowledge of the *Linee Guida*: this gave me some leadership in guiding the process. At the same time, though, I totally needed the cooperation of the collective to carry out my study (they would have been perfectly able to do a probably different, but equally valuable, mapping project on their own). For this reason, they did have a significant amount of power in the negotiating the goals, the sample and the method of the study. They were not involved though in analysing and interpreting data, or in writing about the results: therefore it could be more correct to define this mapping as collaborative instead of participatory.

The possibility of including non-disabled people is another important issue. The student collective had only 4-6 active disabled members living in Bologna. So, in the first meetings the opportunity to involve other volunteers was considered.

The most discussed topic was how to manage the presence of non-experts, and especially non-disabled people, among volunteers. Non-disabled people were needed because of the practical help they could provide and to increase the number of volunteers. But they were accepted with scepticism, and someone raised the need to exert some control over them. During the meetings I noted down sentences like these:

«If they are alone, they do damage, but if they are with some of us, there are not many problems».

«What role do we give them?» «Just a physical one... ok, maybe also say one or two words to get the person [the shopkeeper] out, if I cannot get in. He or she must be able to at least say the first part of the speech».

This way of describing non-disabled people recalls the «reverse commodification» advocated by Ramcharan and Grant (1994). As disabled individuals have been «commodified», i.e. marginalized by powerful individuals and institutions speaking on their behalf, they might want to reverse the power unbalance by turning the privileged researcher into «a resource for their new employer» with disabilities (op. cit.: 297). Other volunteers noted that, if a non-disabled person got in touch with our project, he or she probably already had some level of awareness: «If they come with us, they will be able-bodieds who are slightly more educated than the average».

We identified two main risks of involving non-disabled people. The first was related to the level of knowledge about access. Looking more closely, it was a problem not only attributed to non-disabled people, but to non-wheelchair users in general. A disabled – but walking – member of the collective raised the issue:

A: «We, who do not have a wheelchair, cannot understand if it's ok [accessible]... so what should we do?»

B: «It's only about filling the form, whether there's a wheelchair user or not».

So, the first risk was managed through the provision of a form to collect measurements and not to carry out subjective evaluations of access. This choice will be justified more thoroughly in the following paragraphs.

The second risk concerned how interlocutors relate to volunteers. Firstly, it was noted that «people always talk to able-bodieds and ignore me», as a wheelchair user said. Also, nondisabled people could take up too much space:

«We must tell them that they need to give the floor to those who know. If there's a disabled person, they need to leave the floor to him or her. Otherwise... [able-bodied] people can need to be the centre of attention».

At the same time, it was repeatedly noted that not only the presence of a disabled person but of a wheelchair user was needed to make the barriers evident: «If I am a shopkeeper and I see the wheelchair, I say ok, I'm listening».

The experience in the field seemed to confirm this concern. A group of volunteers who went out mapping without any wheelchair users complained about being very quickly dismissed by the shopkeepers: they barely listened and did not understand what they were talking about. Obtaining attention from busy workers was difficult for every group, but it was commonly recognized that the mere presence of a wheelchair helped a lot. It functioned to provide a concrete, real-time example of the problem that volunteers were bringing to shopkeepers' attention. Some shopkeepers who initially claimed to have a totally accessible establishment were proven wrong by the mere presence of the wheelchair user, who could not manage to get in.

On the other hand, the presence of non-disabled volunteers in the groups helped when places were not accessible. In these cases, the only way to start the interaction with the shopkeepers was for a walking member to enter the place and ask the employee to come outside and speak to the rest of the group. This process had been designed to enable the whole group to observe and participate in the interaction, but was not always successful, as expressed during the focus group:

«When [a wheelchair-user volunteer] approached [the places], obviously nobody came to speak to her and to ask what she needed, so I had to go inside. And even then they wanted to talk... I mean, I said that there was a person outside who wanted to enter, and they kept talking to me, "But what does she need?", and they didn't want to go to her».

«Being in a wheelchair, for me it's difficult to fully play my role. Some [shopkeepers] had no interest in coming out of the place [...]. It was complicated to be the "informer" in a wheelchair».

To sum up, some issues about the involvement of disabled and/or non-disabled mappers should be carefully considered. Firstly, if an emancipatory framework is followed, disabled people are supposed to exert significant control over the research: the presence of non-disabled mappers should be managed in a way that is perceived as helpful, and which does not threaten

that control. More importantly, this “threat” should be assessed considering not merely the level of awareness or goodwill of the non-disabled mappers, but the contextual and social factors which might give more power to the non-disabled mappers, regardless of their actual behaviour.

Secondly, the relevance of having disabled people on the field seems more related to their kind of disability, rather than to the mere belonging to a minority «identity», in the sense proposed by Siebers (2008). In fact, not every person identifying as disabled felt equally “useful” in the mapping context. When measuring a certain kind of barrier, the presence of people who are disabled by *that* kind of barrier is what makes a difference in the interactions with the shopkeepers, because this presence shows the effects of the barriers in a direct way.

3.3. WHERE to map: The sample of places

Defining the sample showed the tension between the need to follow the preferences of the collective and the need to choose a representative sample.

The collective was mainly interested in bars and restaurants in the city centre, and had already selected some street according to an online survey on the establishments preferred by students.

The availability of accessible alternatives was also proposed as a possible criterion: a volunteer considered the exclusion of pharmacies saying that «pharmacies are more or less all accessible... then if you can't enter one, you can go to another one». According to this volunteer, the same could not be said about restaurants and pubs, which apparently were not deemed as interchangeable as pharmacies. They also considered shops and supermarkets, while did not mention other facilities like post offices, banks or doctor's offices.

As a researcher, I believed that a larger, representative sample could provide the collective with a more powerful activism tool, enabling them to publicly present stronger data. I therefore proposed to systematically map some street in different neighborhoods, including every category of establishment.

However, this plan was time-consuming. A volunteer said: «Let's see how it goes with the resources we have, if the first month works, it would be ideal to also map the suburbs. But let's do it step by step ».

The principles of emancipatory research required me to design a research that addressed the priorities chosen by the disabled people involved (Stone and Priestley, 1996), so we compromised on systematically mapping all the places in the seven streets that they had selected, in the city centre².

Mappers were instructed to visit all the establishments one after another. However, some places were skipped for various reasons: they were found closed, the shopkeeper did not allow the volunteers to map, or there wasn't enough time to complete the longest streets. In the end, 175 places were mapped.

During the focus group and the informal discussions, various strategies were proposed to reduce the issues mentioned. First, the same street could be mapped at different hours of the day to find more places open. Second, it would be possible to map without the shopkeeper's

² After the preparation of this article, the mapping was actually extended to a larger sample of streets.

permission: several apps for the mapping of access (see *infra*) already work in this way. However, taking precise measurements secretly could be a bit more challenging, although in our study some volunteers autonomously decided to do that.

Lastly, a small problem slightly modified the sample. Despite the fact that it concerned a very small number of places, it is worth mentioning it because the incident sheds light on some larger issues. While in the field, two groups stopped the systematic mapping required by the method and started choosing the places to map. This happened because they remained with few copies of the brochures and wanted to make the most of them

Interestingly, the two groups relied on different criteria. One of them prioritized the diversification of the sample: «If there were many bars, and one of them was accessible, instead of mapping another bar we mapped the bookstore, for instance». He wanted to do something useful for people with disabilities, following the emancipatory aim. If an accessible bar had already been found, mapping other bars was less urgent than providing information on other facilities.

The other group prioritized the expected effectiveness of the contact with the shopkeepers, in terms of barrier removal. The volunteer considered the linguistic barrier predictive of failure, so prioritized Italian shopkeepers.

«In a couple of cases, it happened that foreigner shopkeepers, who didn't speak Italian well... they approached us with a lot of fear because they didn't really understand who we were, what we were telling them... I mean there was just this factor, and so sometimes there were maybe establishments that we skipped for this reason. Because we knew that nothing would come of it and that the brochures in the end would not actually be used. Because they would not really understand the importance of the project, of what we were doing. We didn't have many brochures, so we decided to use them this way».

Whereas the challenges of communicating to foreign shopkeepers is out of the scope of this article, it should be noted how the mappers' beliefs and feelings impact their ability to interact with the shopkeepers. Similarly, I observed another volunteer considering skipping a shop because the employee, visible from the outside, had a disturbing, creepy expression: the volunteer suspected he might be drunk or drugged and was afraid of getting a bad reaction.

In light of these observations, it could be advisable to discuss with volunteers in advance how to deal with similar situations.

3.4. WHICH maps? Some considerations on digital mapping tools

The collective explored the possibility of using existing digital maps. The options considered were found through internet searches or were already known by the collective. WeGlad, WillEasy and the accessible places feature of Google Maps were selected, and their pros and cons were discussed. Despite not being analysed in detail – a thorough review of digital tools for mapping was out of the scope of the research – it seems fruitful to outline here the themes that emerged while discussing them, as they reflect some of the problems to be considered.

WillEasy was quickly excluded because 1) descriptions of access seemed extremely detailed, too complex for the skills and time available to inexperienced volunteers; 2) mapping seemed reserved for registered users and it was not easy to understand how to join this group. Also, the time needed to be accepted as mappers and see the results published was not clear.

WeGlad was more thoroughly analysed because some of its features seemed to fit our needs. In particular, anyone could quickly download the app and immediately start mapping. The interface was simple and enabled the mapping of the same elements that we wanted to measure: entrances and toilets. It was also heavily based on the uploading of pictures, a feature that we found useful because it allowed the end users to evaluate the level of access themselves. Nevertheless, some limitations were pointed out, like the impossibility to edit data or to see the date of the mapping. Also, the visualization of the map appeared confusing because it was not possible to apply filters: the map was filled with different icons indicating both obstacles in the streets, mapped establishments, accessible and inaccessible places. There were no filters to search for accessible places only, so it was difficult to answer questions like: “Where is the nearest accessible toilet?”: the user needed to tap on every mapped place in order to discover information about access.

Another issue raised about dedicated apps was their limited diffusion among users. Google Maps certainly doesn't have this problem, and therefore seemed a very attractive solution. In Google Maps settings, any user could activate the visualization of “accessible places” through the menu “accessibility settings”. At that point, most places showed the icon of a wheelchair in their description (if they are accessible) or a crossed-out wheelchair (if they are not). In the “info” menu, other synthetic details about access are available. However, textual descriptions of access or pictures showing possible barriers were not available. Also, while anyone could edit access information, it was not clear if and when the user contribution would be published. In fact, the app returned a message which thanked for the contribution, but information did not change, and we did not receive any feedback about if and when it was going to happen. For this reason, Google Maps did not fit our needs.

In the end, we agreed on collecting data through a Google form which included fields for every feature to be measured: height of steps, width of doors, presence of handrails in the bathrooms and so on. Fields for free additional notes were included too. The spreadsheet with the results was later used to create a Custom Google Map. This system did not allow the direct publishing of results by volunteers, but was highly customizable: every single piece of information we collected – including specific measures, pictures or textual comments – could be published. In addition, it was possible to filter places according to predetermined accessibility levels, identified with different colours³.

This choice seemed quite effective for the social change purpose, as it made (in)accessibility visually apparent, which was useful for public presentations and activism. However, we cannot be sure about its actual usefulness for people with disabilities searching for accessible places. In fact, the created map was not advertised much, and there are no data available about its usage by people with disabilities.

3.5. HOW to map: Describing vs evaluating access

³ In a subsequent phase of the research, a new map was published on the student collective website, using a dedicated Wordpress plugin. As opposed to the Custom Google Map, this plugin allowed to filter the research according to any number of criteria, therefore disabled people were able to select, for instance, only restaurants whose step was lower than 5 cm, or only the establishments where the bathroom had two handles.

«The issue is not only if we can go up the ramp or not. We measure and provide objective data about the steepness. For instance, if I can go up a ramp with my powered wheelchair because my wheelchair is made in a certain way, and another powered wheelchair cannot, is the place accessible? Personally, I'd say no. Because for another wheelchair it is not. [...] I'm a big fan of objectivity. In any case, let's measure this ramp!»

This strong statement was made by a member of the collective during a discussion about the mapping method. Someone else had just proposed to simplify the data collection by not taking the measurements of the ramps which appeared blatantly inaccessible, but the proposal was dismissed due to this intervention.

The discussion reflected the difficulties of deciding what can be defined “accessible”, the problem of the generalizability of the experience of individuals with disabilities and the tension between valuing this experience and providing “objective” measurements. All these problems might come up while designing a study on access.

In general, a mapping project can describe some features of the built environment or evaluate its accessibility. By “describing” here I mean reducing subjectivity to a minimum level (although avoiding the illusion of eliminating it), for instance systematically tracing the presence (or absence) of specific features and taking measurements with appropriate tools. Descriptions do not define a place as accessible or not: final users of the map will have to decide whether the described features fit their needs or not. On the contrary, an “evaluation” expresses a judgement on access. It can be a mere classification, where the mappers insert a place into categories like “accessible” and “not accessible”, or may include more detailed comments reflecting their personal experience of access.

These were presented as ideal distinct categories, but obviously the distinction is not sharp, and many projects include both elements. For instance, Willeasy.net is thoroughly descriptive: it never defines something as “accessible” or not, but provides extremely detailed measurements for several elements, as well as pictures of different parts of the building. In contrast, Wheelmap.org offers an evaluation, showing a quick classification of access through “traffic light” colours. However, it also briefly describes the meaning of the different colours and shows pictures of the places. In this way, the evaluation is complemented with a written and visual description, although very limited. Similarly, Google Maps uses just the symbol of a wheelchair to mark accessible places. The additional information offered in its «accessibility» section are pure evaluations: «wheelchair accessible bathroom» «wheelchair accessible parking», and so on. A difficult search on the internet is needed to find out what Google means by these definitions.

Both strategies have strengths and limitations, which were considered during the initial discussion with the student collective.

The descriptive approach may fit the needs of people with different disabilities. Also, taking measurements overcomes the problem that not every person equally perceives barriers. It avoids the slippery topic of defining what should be classified as “accessible”, which can be controversial (Hamraie, 2017; Iwarsson and Ståhl, 2003). This opens the experience of mapping to volunteers who are non-disabled, or who are disabled but not particularly expert of a specific kind of barrier: mappers are not supposed to decide which elements are barriers and in what conditions, they only have to measure them.

Descriptions can be based on an immediate sensorial observation (“Can I see a step here?” “Can I smell strong chemical scents?”) but can benefit from using measuring tools (“How high

is this step?”). This point is important because, for instance, answering the question “Can I see a step here?” implies having decided what constitutes a step. Some shopkeepers that we met did not perceive a threshold of few centimetres as a step.

These complexities emerged in our mapping project. Some members of the collective were confident that wheelchair users would be able to recognise when a threshold is a barrier at a first glance. «A wheelchair user knows what is accessible», said a volunteer. Being a wheelchair user myself, I partially disagree, and this study further convinced me to question the excessive reliance on our individual sensorial perception. For instance, when I was on the field I noticed a volunteer, who had been using a powered wheelchair for several years, who looked at an entrance and declared that it was «ground-level», implying that it was not a problem. But, when she tried to enter it, her front wheels got stuck and she was not able to get into the place. The step was 4 cm. If our mapping were only based on visual observation, that barrier probably wouldn't have been detected. On the other hand, if classified according to Italian law, it would be considered a barrier as it was over the limit of 2,5 cm stated by the DM 236/89.

Of course, I acknowledge where the assertion «a wheelchair user knows what is accessible» comes from. As disabled people, we are surrounded by non-disabled “experts” who create sometimes absurd, dysfunctional designs (Hartblay, 2017) while claiming to know accessibility better than us. The need to directly rely on disabled people to understand what is accessible for them has been recognised since the first studies which laid the foundations of the first laws on access (Hamraie, 2017). Several studies on access directly involve disabled people and affirm the importance of their point of view (Agarwal et al., 2015; Barnes and Burke, 2012; Eskytè, 2019; Hamraie, 2018; Lewis et al., 2005; Lid and Solvang, 2016; Pretto, 2020; Pritchard, 2021; Rieger and Strickfaden, 2016).

I totally support their point. What I am highlighting here is that the simple observation of a possible barrier and the actual attempt of overcoming it can provide different results, even when the observer is an experienced disabled person. Therefore, checklists and procedures to take measurements may help to focus attention on elements that might be overlooked at a first glance.

Evaluative approaches also have their benefits. They may produce a classification of accessibility, which avoids verbose descriptions and can be easily readable, especially when used in a map: people can understand in few seconds where to find an “accessible” place. However, the conveyed message is only immediate for the type of users which the evaluator(s) had in mind. The «unimagined type» (Titchkosky, 2011) of disabled person may find the map useless, especially when no information is provided about the criteria used to define access.

Another reason for evaluating access is that labelling places as “accessible” or not, although questionable from a theoretical point of view, can be a powerful tool for advocacy. In fact, it enables quantitative analysis in answering questions like “How many accessible places are there?” in a defined area, which can form the basis for planning improvements. Also, relying on a definition of “accessible” is often necessary for activists in order to report to the press, or to the judicial system, that something is “not accessible”.

Moreover, an evaluative approach can be used by researchers aiming to understand the lived experiences of disabled people, or to problematise our idea of access. When mappers with disabilities judge whether a place is accessible for them, our notion of access might expand

and include unexpected elements. This approach particularly suits studies aimed at problematising the concept of access, like Hamraie's (2018).

In our study, we tried to make the most of both approaches. During the mapping process on the field, we chose to be mainly descriptive: mappers were asked to take precise measurements, not to judge accessibility. They were instructed to measure steps, even if they seemed extremely low, ramps, even when they looked very accessible, and doors, even when they seemed wide enough. However, volunteers were free to add their evaluation of access in the "notes" fields. Also, the "observer" in every group took notes about the experience of the wheelchair user in accessing the place, and sometimes the notes included judgements on accessibility. The qualitative comments provided context which helped in the interpretation of data.

The collected data were available for different uses: they could be disseminated in their original form or subsequently classified by levels of access, according to definitions of access which could be defined later or even change over time. We opted to work on a classification, both to create a user-friendly online map and to have percentages of "(in)accessible places" to communicate to the public and policymakers. However, in the map we tried not to hide the detailed nature of the gathered data: we compromised on marking the level of access on the map through "traffic light" colours, while leaving all the measurements available via clicking on placeholders. Similarly, in presentations for policymakers we always specified exactly what we meant by "accessible" and the reasons for our choice.

Obviously, this process entailed some important decisions: 1) what elements to describe or measure and 2) which criteria to use in order to define places as accessible or not. These questions will be discussed in the following paragraph.

3.6. WHAT to measure and what is "accessible": A defence of compliance mapping

The group discussed which features of the buildings had to be measured: several dimensions of access relevant to different types of disabilities could be potentially considered. A selection was made according to the following criteria: the human resources available for the mapping; the emancipatory nature of the research (which had to consider the needs of the disabled people involved), and the practical aim of the study (social change).

Firstly, due to the co-presence of people with different abilities and expertise, the chosen features had to be easy to notice and measure for everyone. Furthermore, directly showing the disabling effect of a barrier on a volunteer seemed a good strategy to get shopkeepers' attention (see par. 3.2). Thus, as most of the disabled people available were wheelchair users, it was more appropriate to focus on barriers affecting them.

Secondly, the priorities of the student collective had to be considered, due to the emancipatory nature of the research. At first, I developed a first version of the Google form used to gather data in a way that reflected the requirements of the regulations. However, it was discussed in detail and integrated with some items which were not strictly related to the *Linee Guida*, like those concerning bathrooms⁴. Also, the discussion served to identify priorities

⁴ The regulation includes requirements about the bathrooms, as well as about the furniture and other aspects of the establishments, but these requirements are not included among the adaptations to be done in all existing places by a deadline.

among the several technical details that could be measured – for instance, the group asked to distinguish between toilets which had either one or two handrails. Other options were considered, like adding a field to indicate the height from the floor of the doorbell used to ask for the ramp, but were discarded due to the need for synthesis or left for the mapper to choose, who could decide whether to indicate them in the “notes” field. This process was inherently subjective and reflected the access needs, knowledge and priorities of the disabled people involved. It is to be expected that a different group of disabled people would have made different choices on some details. Nevertheless, the presence of some core items, such as those concerning steps and ramps, appeared quite obvious due to their connection with the *Linee Guida*.

Thirdly, the study was aimed at fostering the implementation of the *Linee Guida*: we needed to take the measurements useful to evaluate the level of compliance with *those* specific regulations. The *Linee Guida* established a deadline for removing barriers for wheelchair users at the entrances to places, so these barriers were chosen as the main objects of the mapping. These data could potentially be used for evaluating the regulation’s impact through a *pre* and *post* study (Altieri, 2009). In addition, as previously discussed, being able to show the percentage of places that needed adjustment to adhere to the new regulation could be useful for policymakers and activists. In fact, the dissemination of the results appeared to have some impact on local politics (see *infra*).

A similar strategy entailed sticking to what the legal norms, and especially the *Linee Guida*, consider a “barrier”. All the elements that we chose to measure were subject to regulation: it was possible to compare the measurements we took with legal standards and state whether the visited places were compliant with them or not. We followed the same method to produce the map and the presentations for the policymakers: when we had to decide what to define as “accessible”, we selected some legal norms as criteria⁵.

This constitutes an example of «compliance mapping», whose limitations have been widely described by disability studies. First of all, this type of mapping is not helpful in describing the barriers which remain out of the scope of the norms. Lajoie (2022) highlighted that the law presents a narrow understanding of access, being mostly focused on physical access for people with mobility impairments. Also, a legalistic approach cannot grasp the relational dimension of access, nor its shifting nature: barriers are not stable entities (Boys, 2014; Price, 2017). In addition, a superficial compliance with the standards may generate the illusion that access was granted, when actually barriers are still in place, like in the case of poorly designed ramps (Hartblay, 2017).

Furthermore, the validity of the standards themselves could be questioned. Notwithstanding that the «access knowledge» stemmed from the experience of disabled people, and was later transformed into legal standards (Hamraie, 2017), it should be considered that access needs were rarely studied at a population level (Iwarsson and Ståhl, 2003), and therefore standards might have been developed to fit the needs of a non-representative, small sample of people with disabilities. Overall, it was pointed out that the taken-for-granted nature of technical standards and guidelines about access poses many problems, including the risk of reinforcing privileged groups instead of valuing the embodied experiences of disabled people (Rieger and Strickfaden, 2016).

⁵ Namely, in the map “accessible places” were defined as such if the step at the entrance was maximum 2,5 cm high, according to the standard set in the DM 236/89.

Why keep relying, then, on legal standards to design a mapping project about access? This decision appears justified by two main reasons related to the specific nature of this study. In addition, it was balanced by some methodological choices aimed at integrating the “pure” compliance mapping with some qualitative content.

Firstly, classifying the level of access of places through newly-defined accessibility standards would have required a whole study just in order to define those standards⁶. In particular, a much larger, diverse and representative group of disabled people would have needed to be involved. Legal norms, on the other hand, provided a ready-to-use set of criteria defining at least a minimum level of access. Furthermore, as our study showed, even that minimum level is far from being reached in our city. Whereas the UN Convention on the Right of People with Disabilities may depict that minimum level as an outdated goal, surpassed by higher standards, the realization of the simplest accessibility requirements still appears distant, and therefore in need of studies to assist their implementation.

Secondly, as stated before, compliance mapping seemed useful to pursue the specific sort of social change (implementation of regulations) that we were seeking. It could be argued, though, that other strategies could aim for an even broader level of social change. For instance, engaging in critical conversations about access with a vast range of disabled people sheds light on barriers not yet included in the law, enriching our definition of access. This «critical accessibility mapping» might help some kinds of disabilities to emerge from invisibility, and in the long run could foster the inclusion of further accessibility features into legal standards.

However, the «restless, iterative conversations about the complexities of access» raised by studies like Hamraie’s (2018) could be more difficult to use for a practical purpose on a local scale. In order to ask for all kinds of barriers to be removed from places open to the public – from inaccessible furniture to loud noises, from inappropriate illumination to excessive scents and confusing information – activists would have to sustain the whole process of 1) legitimising the qualification of such obstacles as barriers; 2) finding an either ethical or legal basis to request their removal; and 3) if the legal way was chosen, problems like defining these barriers precisely enough, setting technical standards and solving conflicts of interests should be addressed⁷. In other words, activists would have to build «the discourse in which such rights can be justified, established, clarified and elaborated», a process which is still ongoing for disability rights in general (Grue, 2015). This effort needs to be considered in a context where not only newly defined barriers, but even the most obvious ones, described in the law 40 years ago, are still widespread and go mostly unnoticed by the general public.

In a project aimed more at social change than at building theory, then, it seemed reasonable to focus on a limited but well-defined and (relatively) attainable goal – especially for a small, local group of young activists. The group decided to make the most of the results, although limited, obtained by those activists who had that regulation approved less than two years before, instead of starting another fight from scratch.

Moreover, the theoretical interest in problematising the concept of access should not overshadow the role of the law in granting an acceptable level of access – and quality of life – to people with disabilities. This role was recognised even by those who pointed out its

⁶ A study sorely needed, considering that our accessibility standards date back 40 years, especially in the light of technological development.

⁷ A process which would bring us back to the initial situation: a selection of priorities would be made, something would remain outside it, and another «critical accessibility mapping» would be needed...

limitations: without legal standards to be applied, large-scale accessibility would not be possible (Price, 2017). Therefore, the problem of effectivity of access laws seems still crucial for disabled people.

Lastly, the limitations of compliance mapping were balanced by the qualitative content included. Volunteers were explicitly instructed to largely use the “notes” field, describing whatever they considered relevant. Any kind of obstacle perceived as a barrier could be mentioned, regardless of its legal status. However, few volunteers used this opportunity. As one of them stated during the focus group,

«usually [...] when they had an accessible entrance, or it was entirely accessible, or it wasn't at all. It never occurred to me to write other notes, but it's right to have that option, because it can be useful».

Statements like this clearly refer to a specific idea of what access is, an idea taken for granted by the volunteers and reinforced by the whole design of the study, focused on a specific set of barriers. It does not appear as a limitation, given the purpose of this project. Anyway, it could suggest that, when the purpose is the production of thick descriptions of access, a different mapping method should be designed⁸.

3.7. WHEN will we get access? Maps as a tool for activism

A comprehensive evaluation of the impact of the project in terms of social change would be premature at this stage. However, it is possible to trace some direct consequences of this study in local politics, providing a basis for further analysis.

Our mapping project was first publicly presented during the “Disability Pride” taking place in Bologna in October 2022. Some members of the local council attended the event and one of them posted a picture of the presented slides on her social networks. In particular, she circled the percentages of steps whose height was lower than 10 cm, commenting: “Only 10 cm of separation between accessibility and exclusion”.

Two months later, I briefly mentioned the mapping project during an institutional meeting on accessibility organized by a city councillor. He showed interest, sent a colleague to attend a presentation of the mapping scheduled a few days later, then asked us to repeat the presentation during the following meeting of the group on accessibility. Immediately after that, a local newspaper interviewed us and published an article titled “Two out of three shops are inaccessible. The city centre prohibited to the disabled”. The article also explained that there were 9 months left to comply with the *Linee Guida*. The day after, the newspaper published a response by the shopkeepers’ organizations, titled “The disabled and the inaccessible shops. Tight timeline, extension needed”. The municipality did not make any statements to the journalist. However, following the newspaper articles, the topic was raised by three councillors during the question time in the local council.

In addition, I was invited to a meeting by the shopkeepers’ organization. They had my contact as I had already tried to seek their cooperation during my research. While at that time it was not easy to get an appointment, this time they set an urgent meeting during Christmas holidays. They promised to inform their associates about the *Linee Guida* – something we had

⁸ An interesting strategy could be the one used by Hamraie (2018), who involved mappers in learning activities on access, before sending them into the field.

already asked them months before – and informed that, thanks to their effort, a €200,000 fund was going to be made available to the shopkeepers who removed barriers.

Some days later, national television broadcasted a report on the accessibility of Bologna. Despite it did not focus on the *Linee Guida*, it began with screenshots of the newspaper's article and of the online map we had created.

In March 2023, a local association organized a fundraising party to improve the accessibility of its establishment. On that occasion, the results of the mapping project were presented again. Three local councillors attended and one of them approached us, at the end of the presentation, proposing to involve the local councillors in the mapping. Thirteen of them offered to volunteer and some of them actually did the mapping.

In the meantime, the event had raised new enthusiasm to continue the mapping, so new volunteers were involved and hundreds of new places were mapped.

The events briefly outlined represent only a part of the consequences of the project: another newspaper article was recently published and then commented on in the local council; one of the councillors mentioned above claimed to have fostered the implementation process, influencing some internal meetings; etc. While a deep analysis of these processes is out of the scope of this paper, they were described in order to exemplify how disseminating data about access can engage policymakers. The student collective, in fact, followed a definition of action research: «taking action through doing collaborative research and using the results to promote social change» (Schneider, 2012, p. 1).

It is notable that both the newspaper and the councillor's post on social media emphasised "numbers". The journalist actively asked to see our Excel sheet and published detailed data in the article. The councillor who published a post on social networks chose to emphasize a percentage. This attention to quantitative data may further sustain our choice of a sort of «compliance mapping» based on measurements.

Conversely, the lack of data can be a problem. For instance, during my larger PhD research, concerns emerged about the fact that the municipality itself would risk non-compliance, because adapting all the public establishments would have posed an unbearable burden on its coffers. However, the same people expressing this fear could not quantify that cost, even approximately: apparently, there were no data at all on the accessibility of public buildings. These conversations showed that the lack of data can make a problem totally invisible but, at the same time, enormous. If you do not know the boundaries of a problem, it can seem boundless.

The councillor's post, on the other hand, showed how the data can be used to challenge what can be defined a "discourse of impossibility". The post consisted of a picture of one of our slides, showing that the majority of the steps were lower than 10 cm, so relatively easy to overcome with ramps. The post emphasised that «only» 10 cm separated accessibility and exclusion. In few words, this message expresses both that the obstacles addressed by the *Linee Guida* create «exclusion» – making the discrimination visible – and the relative feasibility of overcoming them. In some way, it replaces the discourse of invisibility/impossibility with a discourse of visibility/possibility.

A similar transition is observable in conversations with stakeholders. At the beginning of the mapping project, it was common for them to take for granted that the deadline of the *Linee Guida* would be postponed, that it was just one of the several deadlines and norms that did not have real cogency. Later on, the same people claimed that their political position was to

maintain the deadline, because only the presence of a deadline would have motivated shopkeepers to begin the process of removing barriers.

Obviously, promising to maintain the deadline could be a symbolic move (the promise could be later broken; or the municipality could do nothing after the deadline, making it useless). However, the fact itself that this (symbolic?) action was needed says something about a change in what is «sayable» (Titchkosky, 2011) about access. At a certain point, the *Linee Guida* became something which could not be just blatantly ignored: a local community had been informed and empowered on this topic, therefore their requests had to be managed, at the very least, by the policymakers.

4. Conclusion

This paper examined a case-study on a collaborative and emancipatory action research, based on mapping barriers to access for people with physical disabilities.

Firstly, problems of reflexivity and of the collaborative and emancipatory nature of the research were addressed. The roles played by the main author, the disabled and non-disabled volunteers in designing the research were analysed, concluding that the mapping project fits the requirements of emancipatory research (Stone and Priestley, 1996).

Secondly, methodological issues of collaborative mapping projects were discussed. The main dilemmas to be addressed can be summarized as follows:

- WHO collaborates in the mapping? Choices about the involvement of disabled/non-disabled people (and with which disabilities), expert/non-expert volunteers.
- WHERE to map? Handling the tension between the need for scientific rigour/being representative of the sample and the needs of disabled people; identifying criteria for including or excluding some places, also depending on issues encountered in the field.
- WHICH digital maps? Considering the pros and cons of using existing mapping tools vs the creation of a new tool; dealing with conflicting needs for synthesis and completeness.
- HOW to map? Balancing descriptions/measurements and subjective evaluations of access; comparing methods based on observing, measuring or experiencing access.
- WHAT to map? Choosing the features to be measured, in line with our definition of access, the purpose of the mapping project and our position about access law (debate on «compliance mapping»).

This list of issues may guide researchers in designing collaborative mapping projects in line with their aims.

Thirdly, this paper showed how mapping projects can be designed not only to help disabled people in navigating spaces, or to extend the notion of access, but also to promote social change. Although it is premature to evaluate the effectiveness of the project (in terms of barrier removals or actual implementation of the *Linee Guida*), the public presentation of data on access showed the potential of influencing policymakers.

In addition, it could enrich the public discourse on the feasibility of access. It was noted that this discourse generally emphasizes factors hindering the removal of barriers, like conflicts with aesthetics (Imrie, 1996), preservation of historical places (Pretto, 2020), fire safety

(Nordgren, 2009) and other competing interests which are prioritized over access (Egard et al., 2021).

This “discourse of impossibility” appears problematic not when it raises actual issues that need to be addressed, but when its claims become so taken-for-granted that its foundations – and the possible solutions – are no longer discussed. In other words, it seems legitimate to explore and question the *ordinariness* of this discourse. Where does it come from? Is it grounded on experienced failures and unsolvable dilemmas? Or is it resulting from «avoided tests» (Weick, 1993), that is the tendency not to try something because of imagined constraints, whose existence was never proved? Or maybe a mix of them? Also: what role is played by implicit assumptions about whose interests are prioritized? And what about assumptions on the imagined type of disabled people (Titchkosky, 2011), on what spaces they are allowed to navigate, and who can legitimately decide the acceptable boundaries of their freedom (Goffman, 1970)?

Answering these questions is out of the scope of this paper. However, this study showed how data on access can challenge the ordinariness of the “discourse of impossibility”, allowing its claims to be discussed based on information strongly grounded in material reality.

Keywords

disability, access, accessibility, barriers, maps, mapping, emancipatory, participatory, action research, social change

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