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Journeys, Mobility and Flows: Accessibility Work in Berlin's Public Transport

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ABSTRACT

Demands for accessibility bring dis/abled bodies and in/accessible infrastructures together in mutually defining encounters. Through the case of accessibility in Berlin's public transport system, I explore how these encounters figure in practice. Specifically, I present movement through public transport as an object of knowledge and intervention in accompaniment services and advocacy for accessibility. I analyze three forms in which this movement figures: Journeys, Mobility and Flows. Each of these forms delimits bodies and infrastructure in specific ways. Their limits and capacities are thus not self-evident givens, but variously known and negotiated in the critical work of creating and maintaining accessibility.

RÉSUMÉ

Forderungen nach Barrierefreiheit und Zugänglichkeit setzen (nicht-)behinderte Körper und (un)zugängliche Infrastrukturen zueinander in Beziehung. Am Beispiel des Berliner öffentlichen Personennahverkehrs untersuche ich, wie sich dieses In-Beziehung-Setzen in der Praxis gestaltet. Insbesondere beschreibe ich Bewegung durch den ÖPNV als einen Wissens- und Interventionsgegenstand in der Arbeit eines Begleitservices und von Engagierten in Vereinen und Gremien. Ich analysiere drei Formen von Bewegung: Fahrten, Mobilität, und Fluss. In jeder dieser Formen von Bewegung werden Körper und Infrastruktur jeweils spezifisch in Beziehung gesetzt. Ihre Grenzen und Möglichkeiten sind nicht selbstverständliche Ausgangspunkte für die Umsetzung von Barrierefreiheit, sondern werden in verschiedener Weise gewusst und ausgehandelt.

KEYWORDS

Accessibility; movement; disability; infrastructure; ethnography; public transport

The accessibility of public transport was put on the local political agenda in West-Berlin by a movement of disabled activists that gathered force in 1987, reacting to severe budget cuts to the special transport service for disabled persons. In claiming their right to mobility, these activists interrupted infrastructure. They did so literally, on one occasion blocking the flow of bus traffic at the traffic node Bahnhof Zoo to draw public attention. But they were active in other venues as well, working through numerous protests and continuous political engagement. One person who was engaged in the protests recalled:

> Really, whenever there was any kind of [public] event, we'd protest. We'd always rain on the mayor's parade, back then (Laughter). He all but winced whenever he saw us . . . and then they started making it accessible. [Interview 19.12.2017].

The political mobilizations of the late eighties in West-Berlin were part of a broader paradigm shift in both disability activism and theory. In academic research this shift is epitomized by the so-called social model of disability. This posits that disability is constituted through environments that are unfit to accommodate

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Media Teaser: The limits and capacities of dis/abled bodies and in/accessible infrastructures are variously known and negotiated through efforts of making public transport accessible.

bodies with impairments and are therefore disabling. (Oliver 1990). Consequently, rather than diagnosing societal exclusions as natural effects of individual bodily difference, the social model of disability mobilizes bodily difference in order to call environments into question in terms of their accessibility. While the social model has been debated and further nuanced within disability studies, its proposed shift away from disability as individual medical defect and toward person-environment interactions has been influential in many policy arenas, such as the crafting of the UN Convention on the Rights of Persons with Disabilities (Degener 2016). The CRPD is central to a disability politics in which persons with disabilities appear as bearers of human rights and states as responsible for guaranteeing these rights, which include the right to mobility. Next to the general accessibility of the built environment, disabled persons have the individual right to adequate measures providing access, and to additional benefits and services to enable personal mobility. In Germany, there is a legal mandate to make public transport accessible by 2022, albeit with discretionary space for implementation by public transport providers (DIfM 2018: 11). Next to a complicated and patchy web of (partly) subsidized alternative transportation possibilities, Berlin also provides an accompaniment service exclusively for public transport, organized through the public transport association VBB. This service offers door to door accompaniment, in which employees assist customers while using public transport.

In this article, I analyze different strategies and techniques with which activists and organizations in Berlin, among them the VBB Begleitservice, worked to make movement through public transport available, 30 years after the initial protests. My principal concern is how body-environment interactions figure in their work of identifying and removing barriers. Specifically, I explore movement through public transport as a body-environment interaction which assumes various forms in accessibility work. While often taken as a matter of course, movement is actively made available through this work, which comprises practices such as demonstrating, sharing, describing and planning movement through public transport. Movement thus becomes an important object of knowledge and intervention. I aim to show how the work of making movement available curates encounters between bodies and infrastructures, while also delimiting them in specific ways. To do so, I present three forms of movement in accessibility work, as outlined below.

First, journeys, as a form of movement, are made available through practices of planning, routing and the sharing of embodied experiences. Mobility, second, changes and challenges the distribution of tasks and abilities between equipped bodies and infrastructural environments. And lastly, flow positions the movement of disabled persons among a multitude of flows within infrastructural arrangements. Analyzing these different forms of movement, I join what Hamraie has termed critical access studies. This is to complicate the idea of access as "a self-evident good" and investigate accessibility as a contingent field of knowing and making (Hamraie 2017: 13) in which bodies and infrastructure come to matter in various capacities.

Constitutive interrelations, critical encounters

Material-semiotic analyses of dis/ability emphasize the specificity of heterogeneous socio-material arrangements within which disability and its constitutive other, ability, are produced, including assistive technologies, adaptive design, and social relationships. Examining the work of producing persons-as-able, scholars such as Winance (2006) and Moser (2006) argue that ability is distributed and achieved, rather than naturally given in a single body. Shildrick describes the heterogeneity of enabling assemblages to demonstrate how "the body can no longer be understood as natural, distinct, or universal" (Shildrick 2015: 29). These analyses trouble and blur bodily boundaries and show capacities as relationally constituted rather than essentially predefined. Transport infrastructure, however, often enters these accounts not as part of an enabling assemblage, but is encountered as inaccessible environment. Moser, for example, points out that while everybody depends on diverse socio-material links to be in place in order to perform autonomous movement, these are foregrounded in the case of disabled persons. In moving through standardized environments, she states, the relations

which disabled persons depend on to perform autonomous movement are "constantly problematic" (Moser 2006: 384).

The disabled body here becomes a vantage point through and on behalf of which infrastructure is known. The accessibility of public transport has received most ethnographic attention within mobility studies and disability studies, where the disabling effects of inaccessible environments are brought into focus. This is done through recording and recounting the embodied experience of moving through an environment, pointing out barriers and obstacles, and delineating their impact on the lives of disabled persons: such as reduced mobility or the development of specialized skills in navigating these environments (Bissell 2009; Imrie 2000; Parent 2016; Sawchuk 2014).

Body-environment interactions have the potential to generate transformative knowledge when they take the shape of critical encounters. Disability studies scholar Garland-Thomson has captured this critical potential through her concept of mis/fitting. "When we experience misfitting and recognize that disjuncture for its political potential," she writes, "we expose the relational component and the fragility of fitting." (Garland-Thomson 2011: 597). Moments of misfitting, in other words, render the constitutive interrelations of dis/abled bodies and infrastructures visible. Through the case of accessibility in Berlin's public transport, I explore empirical moments in which research participants made such encounters explicit in order to identify and/or remove barriers.

Importantly, in these moments, infrastructures, like bodies, are not naturally given, distinct, or universal. The accessibility measures which followed from the protests in 1987 and ensuing political engagement illustrate this point. The most notable changes for public transport are the gradual rebuilding of stations to equip them with elevators, ramps and tactile guiding systems on the ground, and the conversion of the bus fleet to low-floor buses. While the latter was completed in 2009, the rebuilding of train stations is still ongoing (IMEW 2011). Even at a cursory glance, the implementation of accessibility in public transport encompasses various projects and timelines. Infrastructures do not enter accessibility work as self-evident givens, but are variously known and negotiated in the critical work of creating and maintaining access. Instantiated through standards and visions of future progress, the attribute of accessibility can become a desirable infrastructural quality and marker of modernity, quite independent of present bodies. In her ethnographic analysis of wheelchair ramps in Petrozavodsk, Hartblay shows how their installation produces value by representing accessibility, despite being dysfunctional for actual use (Hartblay 2017). A similar observation is made by Friedner and Osbourne, who state that in Indian cities "disability accessibility functions as a sign of modernity" (2015: 13). They argue that many of these disability mobilities and accessibilities exclude a lower-class majority of disabled persons (Friedner and Osborne 2015).

Accessibility, I argue, calls for analytical tools to examine how bodies and infrastructure come to matter when barriers are identified and removed, without quelling the critical potential that comes from their encounter.

Methods: accessing infrastructure

Between August 2017 and March 2018, I conducted ethnographic research on accessibility work in public transport in Berlin, comprising participant observation and interviews. My interview partners were 10 stakeholders who were either involved as managers, lecturers and customers in the work of the accompaniment service VBB-Begleitservice, or who were active in accessibility work pertaining to public transport through activism, political lobbying and NGO work. The exception to this selection of interview partners is the commissary for accessibility at one of the two major transport operators, whom I talked to in the beginning of my research. She provided valuable assistance in directing me toward the VBB-Begleitservice. Yet she could not think of a way for me to conduct research on accessibility within the company: accessibility was a cross-cutting issue, she explained, not the concern of one single department. In my notes from this meeting, accessibility is strewn over events and organizational levels ranging from EU guidelines to brochure arrangements in the walk-in offices for

costumers. This echoes a set of general methodological issues in studying infrastructure and mobility ethnographically.

Commonly understood as large technological systems supporting the movement and distribution of water, waste, electricity, data, and persons, infrastructures as a distinct topic of study have received growing attention in recent years (Harvey et al. 2017; Jensen and Morita 2017; Larkin 2013; Niewöhner 2015). Yet they are highly embedded and as such often unremarkable in daily life (Star 1999), while spanning a wide range of scales, locations, functional interrelations and temporalities. As Niewöhner writes, "The spatial distribution and simultaneity of infrastructural phenomena challenges the revered ethnographic principle of co-located i-witnessing." (Niewöhner 2015: 124). Ethnographic studies of infrastructures require methodological choices about what to observe and with whom to speak. Different emphasis between these possibilities are often tagged as centered and de-centered approaches in ethnographic studies of infrastructure (Larkin 2013; Niewöhner 2015). These methodological choices are informed by, and amplify, assumptions about what infrastructures are, what they do, and what is interesting about them – in this sense, methods are performative of infrastructure (Law 2004).

In this article, I follow a praxiographic approach (Mol 2003), asking how infrastructure is enacted in different practices of accessibility work. The people whose practices I followed and who told me about events I could not be present at myself (Mol 2003: 15) were those whom I knew, through desktop research and later recommendations by interview partners, as centering accessibility in some of their practices. This lateral approach to infrastructure brought me to headquarters, to learn about training and planning processes, made me come along on journeys with public transport, stopped me at a bus depot to learn to handle buses' wheelchair ramps, and made me sit down in homes, cafés and, again, in headquarters, to talk about issues and experiences in accessibility work.

An important part of my research was conducted with and at the VBB-Begleitservice. This service, organized through Berlin's transport association VBB, has its own headquarters, and employed 88 persons on average in 2016, financed through governmental subsidies to reduce unemployment. It offers door-to door accompaniment through public transport for persons with mobility impairments upon request, free of charge and without formal requirements. This made for approximately 13,000 accompaniments in 2016 (DIfM 2018: 54). At the time of my research, the VBB Begleitservice had a customer base of about 5100 persons and was not widely advertised because of limited capacities. In this organization, I undertook participant observation, following the planning of accompanied journeys in their headquarters, joined their training for new employees, and in a few cases went along with employees accompanying customers (Parent 2016).

Making journeys available

The VBB-Begleitservice has its headquarters in an office building in the district of Berlin-Wedding. Here, a lot of work goes into the production of a specific form of movement. I will call this form a journey. Journeys started in the telephone service room, where several employees were busy taking phone calls from customers. To book someone to accompany them, customers were asked a series of questions: Where would the journey start and end? When would it take place? What mobility impairments did they have? Their answers were noted down on a job order card, which would become the cover page for a set of sheets that employees carried with them when they set out. As a tool to make journeys, the job order card provides a first characterization of the journey. It is a form of movement which has a defined start and ending point, both in space and time. A journey is, furthermore, taken by a specific person: The job order card asked for a name; it also asked, prominently, for the mobility impairment of the customer. The following categories could be checked: "Wheelchair, Walker, Walking impairment, Visual impairment, Blind, Insecure [Unsicher], Deaf, Electric wheelchair, Guide dog, Luggage, Ticket, Other."

Interestingly, these categories of mobility impairment are not alike in how they relate to the body. Some describe bodily abilities that are lacking, such as visual and walking impairments. Others

describe equipment, such as walkers and wheelchairs, which as mobility aids extend bodily abilities. Others make no direct reference to the body, such as Insecure and Luggage. What holds these categories together becomes clear once we follow the job order card from the telephone department down the corridor and to the routing department. Here, job order cards were taken up one by one, and provided with routes, using an online journey planner to produce printouts of maps and itineraries. On the wall, a poster displayed rules of thumb for planning routes. It took the form of a table, with the horizontal edge indicating "Type of impairment" and the vertical listing categories such as "Length of footpath," "Stairs," "Automated stairs" "Elevators" and "Transfer time." To read this table, you start from mobility impairment, and then move down the column to find information on, for example, how many meters of walkway should be included at maximum in the route, if you can or ought to plan a journey containing stairs or elevators, and how much time to calculate for transfer between stations. This table brings a kind of connectivity into view that is not the spatial connectivity usually associated with transport. One edge contains a list of attributes of a prospective customer. The other edge of the table contains a list of features that are typically found in Berlin's public transport environment. The attributes on the edges of the table can be connected so as to produce certain fits along the routes. I take the concept of mis/fit from Garland-Thomson:

> Fitting and misfitting denote an encounter in which two things come together in either harmony or disjunction. [. . .] The problem with a misfit, then, inheres not in either of the two things but rather in their juxtaposition, the awkward attempt to fit them together. When the spatial and temporal context shifts, so does the fit. (Garland-Thomson 2011: 592).

In the routing department, the journey to be taken curates body-environment encounters in order to avoid moments of misfitting. The precise route through public transport which is worked out contributes to shaping fits and misfits, calculating more or less time for transit, or routing around a missing elevator. The journey as a form of movement is a body-infrastructure interaction which is actively shaped – but as it takes shape in specific routes, the journey also gathers bodies and environments together through categories of impairment and in/accessibility.

These practices, tabulating impairment and public transport environment, drawing pathways into maps, and arranging the resulting pile of itineraries and maps into a chronological order, are techniques and strategies of making movement available. They make movement available in the sense of providing it to the service's customers, who will be able to take a journey. But it is also a question of rendering the activity of moving through public transport graspable, by making it present in the headquarters. In this sense, movement is not only made available to customers, it is also made available to employees and planners as an object of knowledge and intervention.

Before new employees of the VBB-Begleitservice start accompanying customers, they participate in several weeks of training. Accompaniment, as I learned through the trainings and on the road, requires strategies and techniques of relating to each other's movement. When I went along with Sara Becker,[1] an employee of the Begleitservice, to accompany Mrs. Huber, the following scene unfolded.

> From the bus stop, we walk slowly through a tree-lined neighbourhood, talking about how we all feel a change in the air, coming here from the city. Whenever we pass over stretches of small cobblestone, Mrs. Huber, Sara's customer, touches the handles of her walker as little as possible, pushing forward more carefully. It hurts in her wrists, she explains to me. The next time we reach the small irregular stones, she lets me push the walker for a meter, so that I can feel how the irregularities reverberate through the wrists and arms. It does not hurt me, but I can feel the impact. A bit later, we reach a small gradient in the street. "They have built a mountain there", Mrs. Huber jokes, telling us how when she was young, she did not even know there was an ascent here in the street. [Fieldnotes 30.08.2017]

Letting me push her walker, Mrs. Huber worked to make her movement available to me, to make me feel the irregularity of the pavement which slowed her. She also alerted us, jokingly, to how her environment had changed because her body had changed with age. Our joint movement, and the way we went about it, thus brought the body to the fore in a phenomenological capacity, as an embodied self, experiencing the world. Likewise, it brought the environment to the fore, as the world as it is

present to an embodied, moving self. Journeying thus introduces evaluations such as pain or the exhaustion that an ascending road has in store. Such evaluations, because they result from intimate links between particular bodies and environments, may appear too private to be amenable to collective practices (Thévenot 2001). With the phenomenological body and its world come limits of knowability – for example, even switching position with Mrs. Huber, I could not feel the pain she felt in moving over irregular pavements.

These limits of knowability are taken up by Mol and Law: "On the one hand there is an objective, public and scientific way of knowing the body from the outside. On the other hand there is a subjective, private and personal way of knowing the body from the inside." (Mol and Law 2004: 44). As they demonstrate, however, we only have to attend to a body in specific practices, to find that bodies do by no means have the impenetrable and stably defined boundaries that such a divide would presuppose. The same, I want to argue, holds true for bodies that journey. Neither what we tend to think of as private and unsharable sensations, nor the particularities of being in and moving through the world as a specific embodied self, are necessarily private. On the contrary, journeys enact these as collective phenomena. Dokumaci captures this possibility through the notion of people as affordances, to describe "how the coming together of the environment and more than one perceiver can bring into being affordances where none exist." (Dokumaci 2020: 107). This may involve sharing sensations between bodies, but also containing them in individual bodies.

The training for new employees prepares for the work of accompanying passengers, in a sense infrastructuring people as affordances. At the time of my research, this training included sessions with Stephan Fischer, a lecturer who had many years of professional experience in care work in medical settings. He talked about his experiences of becoming and being blind, while also teaching rules and techniques of accompanying well. I want to suggest the notion of *Gespann* to characterize this way of relating to each other in moving together. Gespann is a word Mr. Fischer used to describe the relation to his guide dog Nero, and it does not have an exact English translation. It denotes a team that fits well together, but it can also and even more commonly refer to a vehicle attached to something that pulls it, or a group of animals or vehicles that pull something together. The word it derives from is *spannen*, which ranges in meaning from attaching to stretching. Structurally, Gespann is similar to the relationship between a customer and the employee accompanying them in that it is made of connection and attachment with a measure of play, that is, a range for independent motion. In order to accompany well, employees learn different techniques of (not) touching and attaching, negotiating dis/engagement, and perceiving and acting with and for their customers.

Moving as a Gespann means making movement available to each other through material attachments between bodies, and through words. For example, the training for new employees features techniques of accompanying a blind person:

> "Why do I touch at the elbow? Like this, I notice how the ground changes", Mr. Fischer explains. "Could you quickly bend your knees?" Mrs. Rabe does so, and I can see that the angle in which Mr. Fischer's arm is attached to Mrs. Rabe's arm changes. "You can never describe as well how far away a step is, how high a step is, as I can feel it at the elbow." [Fieldnotes 23.10.17]

Touch here is a possibility to share in someone else's movement and perception more precisely than through words. Yet touch does not do away with the necessity to use words:

> Mr. Fischer says that touching someone's elbow also makes you notice when that person is insecure or agitated. So, if you as accompanying employee [Begleiter] are insecure, you should tell your client what is going on, because otherwise all they know is that you are being insecure about something. [Fieldnotes 23.10.17]

The connections that come with moving together require attention to what, how, and how much is shared between bodies. Techniques of forming a Gespann aim at introducing a range of free movement and the possibility to break away or disengage. When linking arms, it is to be done in such a way that the accompanied person is free to pull their arm away. And, as we were told, if you feel the urge to

smoke while accompanying, rather than wrapping the both of you into a cloud of smoke, ask and potentially step away while waiting for the bus.

Moving together requires boundary work. Toward the end of the training, experienced employees joined the sessions and discussed ways of gently refusing to accompany a customer into the doctor's office or assisting medical staff in filling out patient forms with their customer: "No, thanks, but my responsibility is public transport." The VBB-Begleitservice, as Sabine Rabe, the service's manager, told me, needs to have a distinct profile among other accompaniment services – thus, her repeated question: Is this still public transport? The making of journeys introduces gray areas. The doorstep, for example, is contested territory. As a rule, you do not go into a customer's home – on the other hand, you are to exercise your own good judgment. When I asked Susanne Schmied, one of the customers of the Begleitservice, what she needed mobility assistance for, a lot of it was located in this gray area:

> So the most important thing is that I need a few moves [Handgriffe] at home. Especially at this time of year: to put on a jacket, a scarf, close the jacket, put on boots. Help into the wheelchair [. . .]. To lock the door, since it is in a corner and I cannot reach there. And then of course in the S-Bahn, to push the buttons on the door. [Interview 09.03.2018].

When the question of access is directed at public transport infrastructure, the question of what that infrastructure is opens up as well. However, the form of movement that accessibility work aims at specifies this question. A journey opens up the question of spatial reach. It turns the doorstep into a contested area and, in the process, makes barriers such as unreachable door locks in a private house visible as a barrier to using public transport.

Through techniques of forming a Gespann, the journey materializes as a form of movement in which experiences and knowledges of an embodied self enter collective practices without being dislocated from particular bodies. These techniques also engage in boundary work, delimiting where one person ends and where another begins, as much as where one infrastructure ends and another begins.

Making mobility available

In 2021, new S-Bahn vehicles were introduced in Berlin. As had been done previously, disabled persons were invited to inspect a so-called mock-up, a wooden model of the vehicle, beforehand. I spoke about the new vehicles with four persons who use wheelchairs. They used drawings and in one case took a journey with me to convey the problems which came with these vehicles; most urgently, the spatial arrangements inside and the arrangements for entering and exiting. But they also conveyed a sense of dismay. These barriers were so obvious that it was hard to understand how someone constructing vehicles could not see them, and could have built them in the first place.

A journey affords the possibility to share evaluations of the environment by moving together as a Gespann. The second form of movement I want to present, mobility, is made available through different strategies and techniques. Mobility is, for example, worked toward in consultations when the built environment is changed, such as when new vehicles are introduced. Phillip Wolke, an architect working for the Association of Blind and Visually Impaired Persons in Berlin, explained how to do this well:

> You need to be able to put yourself into the position of others. You need to advise without assuming: 'This is ok for me – go ahead with it.' But instead, tell yourself: 'Alright, I would get by with this. But now when I think of this person, and that person, and that person, they are more impaired than me, they would probably not get by with this, so I better decline this.'[. . .] I told [representatives for disabled people]: You need to think with others in mind. [Interview 16.11.2017].

When the environment is to be intervened in and changed, not everybody concerned is present, at least not in the flesh. How then to share evaluations and turn these barriers into an object of collective practices, rather than an occurrence linked to a specific person?

> Interviewer: How do you learn this, to think with others in mind?

> Mr. Wolke: Hmm, no idea – through acquiring theoretical knowledge.[. . .] There is not incredibly much, but there is something. For example, our organization has published a few fact sheets, a brochure on high contrast design.
>
> Interviewer: [. . .] But why then is it necessary to involve affected persons [Betroffene], if in fact you need to specifically pay attention to norms?
>
> Mr. Wolke: Well, because the norms are always only examples. The norms often provide the rough structure for how something should be done. In the details, in the planning, there is always something where you cannot apply the norm one-to-one. [. . .] In addition norms are usually minimum compromises, because in their making, many groups are involved. [Interview 16.11.2017].

While during a journey, barriers enter collective practices without being dislocated from particular bodies, norms and standards do dislocate from particular bodies. They require abstractions, and they involve compromises with other concerns. Take another scene from the inspection of the mock-up, as one interview partner described it:

> There was someone from Stadler [the manufacturer] there. And we did ask him: "How is that, that the display for the stops is over there, and not over here?" I said: "Have you ever heard of a human being having a head with a ball bearing?" (Laughter.) [. . .] I said: "Have you never heard about the DIN standards?" And then he started with his railway regulations [Eisenbahnverordnung], and I told him: "Oh, you know, if you refer to this, I printed this out as well, [. . .]it says here that the wheelchair place should be as close as possible to the door . . . " [Interview 08.01.2018]

My interview partner came to point these barriers out by being bodily present at a wooden, live sized model of the vehicle and moving through it. However, to share these barriers, she did not share her particular embodied experience. Rather, she alerted the manufacturer to the (impossible) bodily consequences of the environment he proposed: a human head with a ball bearing ensues. She invited him to draw on his knowledge of human bodies to understand that they are anatomically incapable of performing the task he attributes to them. But she also drew on the authority of standards to insist that it is the environment, the vehicle, which ought to be changed. Her print of the railway regulation suggested a different problem description within it – it was not the display but the wheelchair place that was wrongly placed – but more importantly, it showed that two can play the game of standards. The work of accessing movement here thus hinged less on making design standards more inclusive (Hamraie 2017), but on mobilizing standards so as to lend authority where anatomy by itself was not a convincing argument.

To illuminate the stakes in this argument, it is helpful to understand that movement is a different kind of object here. What is worked toward is not a journey, but mobility. Mobility designates the capacity or ability to move. This capacity, however, is not a quality that inheres in a single body or object, but results from the relations these have to other entities (Law 1986; Moser 2005, 2006). Accessibility work addresses the interrelations between bodies and environments not only by curating how they come together, as is the case for journeys. It also changes bodies and environments to achieve better fits and, therefore, greater mobility. An example is this account by Phillip Wolke:

> Let's assume, at one station the [bus] 186 and the M48 stop. The blind person never knows which one is standing there, has to ask the bus driver. Who is of course annoyed then, and gives a rude answer. [Interview 12.11.2017].

This narration of interrupted mobility calls not for accompaniment, avoidance and time, but for technical intervention – as Mr. Wolke continued:

> We have been demanding for twenty years, that the buses speak. And now they started a project, there will probably be a test of different solutions next year [. . .] It was also one of our requirements for this project of the [operating company] BVG, that at least for the basic information, it must be solutions for which you do not need to have additional devices with you. But of course the BVG prefers apps, obviously. And if they have additional value, that is alright. But the basic information, which bus is there, which line, where does it go, it must be possible to get this without [an additional device]. [Interview 16.11.2017]

The barrier that Mr. Wolke describes here is a mis-fit between a person who cannot perceive visual information, and buses which do not speak. The question is, who or what will be changed in order to achieve a fit? In negotiating the construction of technological objects, Akrich argues, their boundary "is turned into a line of demarcation traced, within a geography of delegation, between what is assumed by the technical object and the competences of other actants" (Akrich 1992: 206). It is precisely this line of demarcation, distributing tasks between persons and buses, which becomes a contested area here. Like journeys, mobility asks the question: What is infrastructure? But the two forms of movement specify the question differently. A journey turns the doorstep into a contested area, asking the question of spatial reach. Mobility as a form of movement delimits the functional reach of infrastructures against the body, and vice-versa.

Importantly, this line of demarcation does not replicate or depend upon a distinction between human bodies and technology (Haraway 1991), or "flesh and environment" (Garland-Thomson 2011: 594). Both the speaking buses, and the persons using apps, would constitute a technological solution. The difference between equipped buses and equipped users is not readily visible as long as the scene remains static. Here, movement serves to distinguish between a moving subject and the infrastructure through which it moves. The stakes this has for accessibility work are clarified in Jain's critique of the "prosthesis trope" (Jain 1998). Either a specific "whole body" must be assumed, she argues, or all technology can be understood as prosthetic. It may foster strategic alliances to underline that we are all "prosthetic subjects," in that we all depend on technologies to move around (Langan 2001: 464). Yet, as Jain writes, "a prosthesis can fill a gap, but it can also diminish the body and create the need for itself" (Jain 1998: 44). Technology, even while filling a gap, can enact bodies as lacking sight, or an infrastructure as lacking voice. The question is thus not only if access is established, but also, how. Phillip Wolke explained the potential consequences of using an app:

> Not everyone can use a smart phone, and not everybody wants to. [. . .] The battery might be empty. Then I stand somewhere at a bus stop and the thing doesn't work anymore, battery empty. And of course I also forgot my power bank. So you need to take care of it, actively. [Interview 17.11.2018]

A specific delimitation of infrastructure thus also prescribes what a properly equipped user of that infrastructure looks like. This has consequences both in terms of what a "normal" or "whole" body is made to be, and in terms of responsibility for access, which is either distributed to a transport provider, or to an individual who has to actively take care of fitting equipment.

Consequently, working toward mobility involves a careful curation of the body-infrastructure encounters that this movement will generate. When I told Mr. Wolke that most of my fieldwork so far had been with the Begleitservice, he interjected:

> Yes, while, of course, if someone is traveling with the Begleitservice, he does not experience the same problems as he has when he is about on his own. [Interview 16.1.2017].

There is a significant group of persons who, in order to use public transport, have to enter multiple attachments to an assistance service. Yet because of these very attachments, some barriers disappear, which according to Mr. Wolke ought to be addressed through changing the built environment. Accompanied movement may thus produce unwelcome evaluations of infrastructures as complete and moving subjects as lacking accompaniment or assistive technologies. Sabine Rabe, the manager of the Begleitservice, explained:

> When we talk about accessibility [Barrierefreiheit], and European norms and standards, then everyone ticks "lowered platform edges" and the like. And self-advocacy groups say: We want to be completely independent of everyone – which I can very well accept, and not only accept, I say it is their right. But on the other hand, from the work that we do, I have gained the impression that there will always be people, you can put the most wonderful ramp in front of them, you can make access [Zugang] as accessible [barrierefrei] as possible for them, they have a barrier inside them.[. . .] And therefore I believe accessibility [Barrierefreiheit] is precisely many approaches, and we need to be more open to not only define this always via infrastructure, but also via personalized services. [Interview 29.08. 2017].

Making movement available through practices of accompaniment does not only generate journeys, it also makes it possible to imagine mobility as achieved through accompaniment. The idea of barriers inside people does not have to reintroduce a medical, or individual model of disability. It is a barrier, not the dis/ability, to use public transport that, by Mrs. Rabe's account, is located inside someone. She underlines that there are barriers for which adaptations of the built environment may not be a possible or desirable solution. A more fitting intervention, to her, is to include accompaniment in the infrastructural arrangement to achieve more mobility.

Making flow available

Asked about barriers in public transport, one of my interview partners recounted the following experience:

> Time and again, we have rail replacement service at a spot which is very dark, and without elevator.[. . .] People are then directed to a bus and it works wonderfully, but we have to get off one station earlier, it is a very far away station, and then drive [to the pick-up place for rail replacement busses]. And for ages I have been saying, this does not work. Me, with an electric wheelchair, I can still drive there, but it isn't the nicest. And she [the person responsible at the company] then said immediately, well, no bus can park there [at the earlier station with elevator], and so on. And now we took pictures: a minibus could operate there, which could also bring people to this place [where rail traffic starts again]. And this is what's been happening for years, and in fact nothing happens. There is nothing going to happen now either. [Interview 18.02.2017]

The form of movement addressed in this account, I want to argue, is flow, and this in two ways. First, it is the interrupted flow of moving with public transport. Second, it is the missing flow of a rail replacement service which is identified as a barrier in public transport infrastructure. When movement is made available as flow, barriers appear as problematic interrelations between different flows (Law 2006). One way of capturing this kind of barrier is to attend to emergent effects that infrastructures produce as experimental systems (dis)integrating all kinds of agencies, activities, and features (Jensen 2017; Jensen and Morita 2017). A decentered approach to infrastructure offers two strategies for this kind of analysis: it does not center on human beings as the sole actors, and it begins analysis somewhere other than centered headquarters (Jensen and Morita 2017; Niewöhner 2015).

A case which draws just this picture of infrastructure are the gaps between platform and train station in Berlin's public transport. These gaps, according to Jürgen Schubert, an interview partner who has been active in disability politics in Berlin for many years, are "a science in itself." Both the trains running at the S-Bahn in Berlin, and the platforms, have varying heights. As a consequence, the height difference between train and platform is insignificant to wheelchair users with some trains in some stations. With other trains in other stations, the height difference becomes a barrier due to which many wheelchair users need to enter at the first wagon, so that the driver can lay out a ramp. Mr. Schubert told me about the history behind these gaps:

> In East Berlin they once said: we can make the train platforms higher, and a big number of the train platforms was raised to 103 centimetres. And now here we are [. . .]
>
> You may not know this, there was a time before the Wende [reunification of East and West Germany] when East Berlin, which owned the S-Bahn, [. . . amidst] the political tensions, decided: "We stop service in West-Berlin." They were not interested anymore. And then the West Berlin public transport provider BVG took over the operation of the, by then defunct, S-Bahn in West-Berlin.
>
> But by that time, most platforms, most lines had not been used for a long time, so that it was all already completely grown over, with plants and such, the S-Bahn looked terrible, at Tempelhof, and the Ring, no train was going. [. . .] And so we said: "If you are going to restore the stations here in the West, then do it already like in the East, where they brought the platforms up to 103 cm, so that we do not have this high entrance step[. . .] And they did. [. . .] – Unfortunately, I'm annoyed with ourselves (laughter) – we did not, we could not have anticipated this development. The Wende came, and everything was turned back, the S-Bahn operators were re-united, suddenly 96 centimeters was general standard again, the ongoing renovation of West-Berlin platforms was brought to 96 centimeters. But the south ring is on 103, and many platforms in East Berlin. So that if I enter in Tempelhof, that is one of the 103, there's a step, I have problems there. While Südkreuz was built later, and there [platform and train] align precisely. Of course this back and forth is due to the political development. We have of course made mistakes, or rather errors happened [Irrtümer entstanden], or stayed, which then require years until they are removed. [Interview 12.03.2018].

Errors happened – and the way they happened shows the value of understanding infrastructures not as bounded systems: plants grow in and political tensions go through. And errors stayed – bringing infrastructures into view as the temporal paradox of having to build into a specific anticipated future, while working with decisions that have been made materially durable in the past (Howe et al. 2016). The gap between platform and train station complicates accessibility as a matter of linear, progressive change in built environments. Rather, different events and processes happen at various speeds, producing the irregular height differences between platform and train, which appear and disappear again as trains leave the station. In this instance of accessibility work, infrastructure does not feature as a static environment through which one moves – infrastructure is in motion as well.

There is no moving body at the center of this account which would define the spatial reach of public transport by taking an employee of the Begleitservice along, or against which the functional reach of public transport in interfacing with a moving body is defined. In contrast to the journey or mobility, we cannot discern a moving body at the center of what is happening. What we see is an effort to put a specific kind of body, a body moving in a wheelchair, at the center and to make other movements amendable to this movement. In this case, the effort fails, and platform and train align only irregularly to provide a smooth entrance.

Another example of de/centering flow can be found in a project of the Berlin-based NGO Sozialhelden e.V. They have made a website called brokenLifts.org which provides continuously updated information on broken elevators in public transport in Berlin. This is how my interview partner Felix Berger described their intervention:

> Why do you have to go to two subpages each time, you need to go here (he demonstrates how complicated it is to click your way to one elevator malfunction information webpage). Such an adventurous link, you need it every morning to look up which route to take.[. . .] The idea always was to take all this information, we take it from both pages [of the different transport providers in Berlin], standardize it, make it available on brokenLifts, and from brokenLifts you can retrieve this unified information in any format you need. [Interview 22.08.2017].

This project engaged in a kind of flow-work which aims to ensure a smoother flow, making it less cumbersome to retrieve the information one might need to plan one's journey. To do so, Felix Berger and his colleagues aimed to provide infrastructural arrangements that make this information available in a unified format.

Flow as a form of movement brings bodies and infrastructures into view as interrelating movements. Conceptually, we tend to think of infrastructure as the constitutive opposite of movement, as the stillness and stability which enables or hinders it. This is epitomized in Larkin's description of infrastructure as "matter that enables the movement of other matter" (Larkin 2013: 329). Where infrastructure appears as interrelating flows, however, the question is: Which movement is centered as the movement in relation to which other movements are evaluated and changed? In making movement available as flow, accessibility work shows infrastructures as sites which do not only come with centered and de-centered positions. They are also sites at which activities of de/centering take place.

Discussion: making movement available

The case of accessibility work emphasizes the importance of knowing movement not as a generalized given, but through different bodies and experiences of moving (Bissell 2009; Imrie 2000). Ethnographic methods are well suited to critically examine the promises of accessibility, and how and whether they materialize in the experiences of persons living with disabilities. In doing so, ethnography reaches beyond "a theoretical generic disabled body that can dematerialize if social and architectural barriers no longer disable it" (Garland-Thomson 2011: 592). Such an attention to everyday practice and experience likewise reaches beyond accessibility as being, in a binary fashion, either given or not. Instead, ethnographic methods can extend space to the gaps and confluxes, timing and detours, and the co-presences which shape diverse in/accessibilities.

In this article, I have proposed a specific approach to the study of disability and infrastructure. Attending to the everyday science and technology of accessibility work brings its objects and objectives into focus – such as movement through public transport. Such objects of accessibility work offer a venue into the study of disability as a question of "living with embodied difference" which does not compartmentalize disability as the experience of a specific group of persons (Rapp and Ginsburg 2012). As activities that are to be "accessed" are represented, planned, practiced and otherwise made present, what forms do they take and how do they make room for difference?

In presenting movement as journeys, mobility and flows, I have analyzed movement as achieved and worked toward in specific forms. In that sense, movement is an object of practices, it is worked upon. Yet movement is also productive. It dynamically interrelates bodies and infrastructures in specific ways, curating their encounters and affording to question them in different capacities.

This sheds light on the negotiations and stakes of the boundaries between moving subjects and the infrastructures through which they move, giving space to how these boundaries, while not essential, are still defining. Adding an infrastructural perspective to the question of access and accessibility also enables the question of how disability can transform the capacities of infrastructure, redefining what an infrastructural environment is and can do. Techniques of moving together, for example, while often making up for "the affordances that an environment fails to provide in the form of built objects, places, and socially recognized gestures" (Dokumaci 2020: 100), in another sense come to be infrastructural themselves, as they are systematically trained and performed by employees of the Begleitservice.

Exploring movement as a formed and formative object of accessibility work I have shown how accessibility work shapes body-environment interactions. As Titchkosky writes, "The fight for the right to access may get people in – but that is only half the issue. Developing critical relations to access that are committed to recognizing how it already interprets embodied difference is the other half." (Titchkosky 2011: 28). Attending to practices of making movement available enables such critical relations to access, while opening the question of how access already interprets infrastructure. It thus allows us to work in an analytical space in which bodies are not essentially bounded or to be rehabilitated to normative practice (Shildrick 2015), and in which technology and design could be otherwise (Fritsch et al. 2019), while following the critical tensions which animate accessibility work.

Note

1. I use pseudonyms for all research participants.

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