Technopolitics as a Sociomaterial Process

An Infrastructural Study of the Berlin Wall

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Master Thesis

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Summary

From its initial construction as a barbed wire barrier and the following development into a heavily fortified cordon sanitaire, to wall remnants turned into memorial sites, the Berlin Wall evolved materially significantly over time. Despite this transformation, the Berlin Wall is often framed as a political instrument. This thesis examines what kind of understanding of technopolitics is offered if the Berlin Wall is considered an infrastructure instead.

Approaching it as infrastructure helps to understand how it paradoxically appears as both an impenetrable barrier, capable of determining people's lives and as a fragile structure. It is shown that the Wall's materiality and symbolic meanings are not historically fixed but evolve as a fluid amalgamation with engineering considerations, government decisions, economic requirements, military techniques, environmental constraints and cultural elements. This process of ongoing sociomaterial change also suggests that the perceived impenetrability or porosity of the Berlin Wall is not just defined by clear-cut material-scientific terms but instead is located on a technopolitical spectrum that shifts in time and space.

This infrastructural analysis highlights that the Wall's poetics are a crucial aspect when trying to understand how it developed, how it was capable of affecting people's health leading to so-called wall disorder, or of reappearing as memorial infrastructure. In each of these different aspects, the same dynamic is uncovered: technopolitics as emerging from sociomaterial interaction. The Wall's continuous evolution makes evident that technopolitics is not something stable but evolves together with the sociomaterial processes that give rise to it.

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1. Introduction

During the night of August 13, 1961, a massive military operation started that reinforced and barricaded the border between East and West Berlin and Germany. The Berlin Wall was being built. 28 years later and again during one single night, the Wall fell and with it the East German regime. While the Wall had initially appeared as an unsurmountable barrier, able of oppressing an entire people and as an irrevocable fact of everyday life for East and West Berliners, it now stood for the freedom gained by the people capable of peacefully overcoming it, thereby revealing the fragility and permeability of the Wall and making possible that its pieces could proliferate into the entire world. Despite this remarkable transformation, the Berlin Wall is predominantly portrayed in historical or political literature as part of a system that consisted of an architectural structure, people that guarded it, and laws that regulated the operations around it. Oftentimes, it is just described as "an instrument to stabilize the East German government's power," as done by one of the leading German historians of the Berlin Wall (Sälter, 2007, p. 5). Popular media similarly depict the Wall in this way, claiming that its sole purpose was to prevent East Germans from fleeing to the free West (DW News, 2009), thereby characterizing the Wall as a static artifact and simultaneously revealing a western bias. This instrumental view of the Wall as political tool is often coupled with deterministic positions that point out the harm and misery that was caused by the Wall. Adopting a somewhat different perspective, many contemporary border studies scholars conclude that border walls ultimately never fulfill their function of blocking flows of people or goods (Brown, 2017; Chaichian, 2013; Jones, 2012; McGuire, 2013; Saddiki, 2017), implying that there must be other reasons for the act of walling that go beyond the technical. Together, these views paradoxically suggest that the Berlin Wall was both an impenetrable barrier, capable of determining people's lives and a very fragile structure that required constant maintenance and improvements and that still could be crossed as continuous successful escapes suggest.

Such contradictory views of how the Wall was seen, felt and eventually overcome provoke questions over how to conceptualize the Berlin Wall from a philosophical point of view. How can one approach a wall that on the one hand appears as a mundane construction ready to use and on the other hand seems to encompass much more than just barbed wire and bricks as it also includes military engineers, socialist party leaders, violence, health issues, escaping citizens, or symbolic meanings? Should the Wall be seen as more than the sum of its material and symbolic parts—as a manifestation of technopolitics?

One way to approach these issues is to conceive the Wall as an infrastructure. Infrastructures are both a thing and a relation between things (Larkin, 2013), they govern the flow of people, goods, energy or ideas, and their materiality and symbolic meanings mutually evolve with society (Edwards, 2003). Due to their complex entanglements with society, they

can serve as a heuristic to investigate processes of different scales of social organization and material engagement. These features make them an ideal vantage point for exploring the various and often paradoxical facets of the Berlin Wall. Its varying degrees of permeability similarly structure the flow of people, goods, or ideas in Berlin's borderscape. Like infrastructures, the Wall importantly influences how people relate to each other and their environment. As infrastructures are omnipresent components of modern societies, contributing significantly to our ways of living while at the same time being be shaped in doing so, they inherently have a cultural and political character. These hybrid, sociomaterial processes also take place at and around the Berlin Wall, making infrastructures a suitable vehicle for examining how the Wall's multifaceted nature and politics or social life are interrelated.

The guiding research question is thus: Which kind of understanding of technopolitics can be revealed if the Berlin Wall is viewed as an infrastructure? I argue that technopolitics emerge from sociomaterial interactions that take place in the various ways of making, using, repairing, even deconstructing infrastructures. Technopolitics are more than politics embodied in technology or technology affecting politics. One could rather say that it is through the complex entanglements of social and nonhuman relations that politics emerge. Adopting such a hybrid perspective means stepping beyond the traditional dichotomy of humans and nonhumans. Similar to ethnographers closely observing people to produce descriptions that are *thick* with every little detail of social interactions in order to make sense of customs, traditions or cultures, seeing the Wall as an infrastructure and recounting the various interactions with it can be understood as a thick thing description, a story of sociomateriality.

In the following section, I provide some brief historical context of the Berlin Wall. The events along the rich history of the Wall that will be picked up by the subsequent parts of the thesis are presented here in a chronological manner. To lay the foundation for my approach, I then introduce infrastructures by starting out from the conventional view of infrastructures as mundanely invisible. Broadening the view to include poetic functions of infrastructures as well as paying attention to how different scales of time or social organization reciprocally influence each other, a more nuanced picture of infrastructures is developed. This approach will help to establish a more hybrid understanding of the Berlin Wall that is decentered from overly instrumental or anthropocentric narratives.

1.1 Historical Inventory

The Berlin Wall's rich past can be recounted from many different angles, making it worthwhile to include a short historical inventory of important events and developments that will form the background for the following discussions of the Wall's becoming. Although the subsequent chapters will come back to some of these historical developments in even

greater detail, it is helpful to have them available in one coherent section, placing the Wall in its historical context and offering the reader with some overview.

After the end of the Second World War, Germany was divided into Soviet and Allied occupation zones. The tensions of the developing Cold War led former British prime minister Winston Churchill in 1946 to speak of a Soviet "iron curtain" that had been closed before the Western Allied countries (Müller, H. M., 1990). The direct confrontation of these two superpowers in Germany led—amongst various other reasons—to the formation of two separate German states, the Federal Republic of Germany (FRG) in the West and the German Democratic Republic (GDR) in the East. The political systems differed considerably and so did some of the living conditions, leading to mass escapes into the West. In the years before the building of the wall, 100.000 people fled the GDR on average per year, rising to a maximum of over 330.000 in 1953 (Nooke, 2011, p. 163). To stop this exodus, the inner-German border was closed off in 1952, although with little effect on the number of escapees (Nooke, 2011; Zentrum für Zeithistorische Forschung Potsdam e.V. et al., 2019).

On 15 June 1961, Walter Ulbricht, the then Chairman of the State Council of the GDR, announced in a press conference that "nobody had the intention of building a wall" between the Soviet and Western Allies' controlled sectors of Berlin (Zolling, 2005, p. 275). As one of the reactions to that statement, the numbers of refugees attempting or succeeding to make it to the West increased dramatically (Müller, H. M., 1990; Schmidt, 2011). The idea of being walled-in seemed apparently so suggestive that the public started to see a wall where there was not any. Yet, only less than two months after Ulbricht's rejection of such an intention, the construction of the wall began in the night from 12 to 13 August 1961 (Zentrum für Zeithistorische Forschung Potsdam e.V. et al., 2019) to bring the recent months' mass escapes to an end.[1] This sudden intervention hinted at the acute state of emergency, that however was framed entirely differently by the East German regime. In order to protect the young socialist state from the fascist West, it was affirmed, an urgent action was necessary. Accordingly, the Wall was not allowed to be called "Wall" publicly, but instead was officially termed "antifascist rampart" (Schmidt, 2011, p. 458). In addition, any other picture of the Wall than the official one with the closed Brandenburg Gate was prohibited.

The concrete wall segments that dominate today common conceptions of what the Wall looked like did not appear before 1977 (Sälter, 2011a). Instead, the first cordoning off was achieved by laying out barbed wire, installing fences and bricking up windows (Henke, 2011; Sälter, 2011a). It was not before 18 August 1961 that a wall made of bricks was started being built. Although commonly referred to as the *Berlin Wall*, it should be remembered that the largest part of the border's course was for most of the time fenced, as was especially the case for the Western border of West Berlin with what is today the state of Brandenburg. The

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[1] Throughout this thesis, I will refer to the attempts to cross the Wall and move towards the West as *escapes* (instead of more neutral terms like migration or movements). This use of vocabulary is consistent with the literature on the Berlin Wall. However, I do not intend to give the impression that this Western perspective is *objectively* true.

barrier between East- and West-Berlin consisted—after what one might call an initial phase of improvisation—of a wall made of bricks. These fortifications soon developed into a modern and deep border strip with several lines of barriers, including watch towers, signal fences that would set off silent alarms upon touch, vehicle barriers, and dog runs where dogs chained to long wires patrolled the fences.

From 1977 on, the *Grenzmauer 75* (border wall 75), also known innocently by its technical name *Stützwandelement* UL12-41 ('support wall element'), replaced older brick wall sections of the Berlin Wall to give it a more friendly external appearance (Sälter, 2011). It consisted of prefabricated concrete slabs that allowed the border troops to place them rather easily in almost any terrain. The outer wall could thus also be opened and closed without large difficulties, which was occasionally made use of for maintenance and repair activities on the western-facing side of the Wall. In its third generation, it included the outer front wall facing West Berlin, called *Vorderlandmauer* (Sälter, 2007, 2011a), a deep, flood-lit border strip, and the so-called hinterland wall that blocked off the entire strip towards the East. Escapees from the East would first have to jump this wall to get access to the cordon sanitaire and before eventually having the chance to climb the outer wall. In other words, what is today referred to as "the Berlin Wall" consisted in fact of different walls—and depending on the side one was living, only one was known.

The mere existence of this wall (or set of walls) and the change of living conditions it brought about for people on both sides were related to various forms of anxiety or depression in many of the affected. These symptoms could often not clearly be associated with a particular disease or mental disorder and thus led psychotherapists soon to address these mental and physical conditions under the term *Mauerkrankheit* or wall disorder.

The Berlin Wall as it stood thus was more than a plain wall—it was a complex and continuously evolving structure. Development plans of the Wall's future existed, intending to have it recede more and more into the surrounding landscape by increasingly relying on covert technologies like acoustic and seismic sensors or microwave surveillance (Sälter, 2011a). Despite these far-reaching plans, the Wall as a physical object was suddenly rendered obsolete in 1989.

Following a press conference on new travel regulations, the spokesman of the SED Central Committee, Günter Schabowski, replied to the question when the regulations will be in force, "As of now; immediately!" ("Chronik der Mauer,"). What followed is probably best described by the "word of the night of November 9, 1989"—"Wahnsinn" (mind blowing) (Leuenberger, 2014, p. 26). In a collective engagement of both citizens of East- and West-Berlin, passive GDR border security soldiers, the Wall was being broken apart, people climbed it to celebrate on its coping, border stations were flooded with people.

During the following winter months, more and more people from both East and West —armed with chisels, hammers and other tools—treated the Wall relentlessly. The many people chiseling off pieces of the wall were soon known as *Mauerspechte* (wall peckers) and

often tried to make some money by selling Wall fragments as souvenirs to tourists and those who wanted to own material proof of its demise (Bach, 2016; Klausmeier & Schmidt, 2011). Within 48 hours after its fall, the first wall chunks had not only been shipped to North America but were already available for sale in stores (Turner, 1990). Wall fragments continue to be sold at Berlin flea markets and internet platforms.

A couple of weeks after the initial opening, engineers of the National People's Army (NVA) with the aid of private demolition companies removed large sections of the Wall in a more coordinated manner (Klausmeier & Schmidt, 2011; Sälter, 2007). For the most part, the front wall, the hinterland wall, and other border fortifications like towers or maritime barriers within the rivers and lakes of Berlin were started to be scrapped soon after the border had opened. It still took almost two years to shred most of the 45.000 concrete slabs of the 184km of the Berlin Wall in large crushing machines and recycle the resulting rubble in the construction of new road beds (Haase, 2010; Sälter, 2007).

Not all of the 'border wall 75' segments were destroyed in the wake of removing the barrier. Some were presented as official gifts to governments around the world or purchased by various individuals or institutions. During at least two occasions in 1990, more than 80 complete concrete wall slabs were auctioned off. The largest auction was held in June 1990 in the Metropole Palace Hotel in Monte Carlo where 70 segments were sold for charity purposes (Zentrum für Zeithistorische Forschung Potsdam e.V. et al., 2019), further helping to disseminate the Wall remnants across the world. Today, one can find more of these— meanwhile deemed iconic—segments distributed throughout the world than have remained in Berlin, making it the most widespread architectural structure in the world (Klausmeier & Schmidt, 2011; Oltermann, 2014). For example, New York City features Wall segments in several public parks, but also the George H. W. Bush Presidential Library, the City of Ottawa, every German Land government, even a theme park in South Germany, and countless museums hold and exhibit at least one of these segments (Bloedner, 2014; Farber, 2013; Oltermann, 2014; Sälter, 2007).

Although these proliferated Wall segments are today remembered everywhere as the Berlin Wall, possibly because of the extensive media coverage of its fall in November 1989, they in fact show only the Western view of the former border. As far as is known to me, neither watchtowers nor parts of the hinterland wall have been exported or put up for display at locations other than their original ones. From the original border strip construction, only a tiny section has survived at the location where today the official Wall memorial site in Berlin at Bernauer Straße can be found. In the district of Friedrichshain at the border of the river Spree, several hundred meters of the hinterland wall have been preserved thanks to their eye-catching graffiti paintings. Having been painted excessively with large murals during an organized event in 1989 by more than one hundred, in parts internationally known artists like Thierry Noir (Barthel, 2017), the so-called East Side Gallery has since become an icon recognized all over the world and a major tourist attraction.

1.2 Multiple perspectives on infrastructures

Infrastructures are ubiquitous mediators of modern existence. They are networks that enable the flow and exchange of materials, people, energy, or information. One can find a wide variety of elements—that could range from water pumps and pipes to aquifers, withdrawal rights, water bills, or activists—incorporated in infrastructures, whereby they not only provide amenities for everyday life but also the basis for other technologies to function. This diversity suggests that they constitute the underlying fabric of our contemporary lifestyle. Recently, infrastructures have attracted increasing attention within the social sciences, history, and science and technology studies (STS). This growing interest in infrastructures has resulted in a more nuanced and detailed view of them and their effects on culture, society, politics and what it might mean to live a modern life.

A common view of infrastructures is that they operate largely unnoticed and become visible only upon breaking down. The claim that technology is brought to our attention only through breakdown has prominently been argued for by Heidegger, for example in *Question concerning technology*. The idea that during its use technology recedes into the background and is "ready-to-hand" and becomes noticed or "present-at-hand" (Heidegger, 1977) only if it ceases to function properly has also been adopted by much early thinking on infrastructures (Star, 1999) or post-phenomenology (Ihde, 1990). More recent humanist scholars have begun to argue that not only breakdowns make infrastructures visible but that many infrastructures also function on a symbolic level, conveying for example the hopes and beliefs of participating in the progress of modernity by the construction of new roads and bridges in Indonesia or the introduction of nuclear energy in Africa (Edwards & Hecht, 2010; Larkin, 2013). These studies point out the cultural character and visibility of infrastructures. Likewise, their inherent socio-technical nature has been a focus of recent research, bringing to the fore that infrastructures not only require the appropriate materials and technologies, but equally depend on social organizations, accessibility, regulations, or knowledge and practices for making and using infrastructures (Anand, 2011; Edwards, 2003; von Schnitzler, 2008).

Going even further, others have highlighted how infrastructure studies can reveal the "other-than-human dimensions of political relations" (Harvey et al., 2016, p. 11), suggesting that the world we live in is quintessentially a technopolitical one. Consider for example how the introduction of prepaid water meters in South Africa highlights the ways a technology can improve living standards by providing water access and thereby help calm social tensions. At the same time however, it also works as a disciplinary device by automatically cutting the water connection when consumers fail to pay in advance. The water meters thereby establish a material connection between the state and its citizens right into their homes (von Schnitzler, 2008, 2013). Another widely cited study from the intersecting fields of technology studies and ethnography focuses on how Mumbai citizens becoming technically connected to water infrastructure also fundamentally affects their political connection to the city's

infrastructure (Anand, 2011). These new perspectives have provoked critical questions about what it means to be modern or to live in modernity and how the traditional distinction between technology and politics might not be as clearcut as oftentimes believed. They also suggest that neither technologies or infrastructures nor politics or other social arrangements possess fixed meanings across time but rather evolve and reconfigure in respect of each other. This mutual influence could be called with a nod to Andrew Pickering a "dance of agency", describing an ontological perspective in which agency is seen as a process, situated between in the interplay between humans and non-humans—recognizing it as "open-endedly becoming" (Pickering, 1995, 2008).

Inspired by the work of Paul Edwards and Brian Larkin, I will draw upon methods that are employed in the emerging field of infrastructure studies to analyze the Berlin Wall as an infrastructure and the political environment and the practices with which it is entangled. In other words, by conceptualizing the Wall as infrastructure, a sociomaterial world unfolds that allows us to cast a different perspective on the technopolitical dance of agency that has characterized the Wall and its mutual relation with individuals and societies at large over time. Before I can do this, some key aspects of infrastructures need to be introduced.

1.2.1 Multiple scales of and on infrastructures

In his contribution to an edited book on the relation between technology and modernity, Edwards finds that most studies focussing on technology remain stuck on disparate levels of magnification or what he calls scales. According to him, analyses of user-technology relations most often confine themselves to a micro-scale analysis of individuals or small social groups as is the case for studies on the social construction of technology (SCOT). By contrast, meso-scale analyses emphasize the sociotechnical nature of large technical systems or networks, highlighting that it is not merely the achievement of supposedly bright-minded individual inventors like Thomas Edison or Elon Musk that significantly shape technology but importantly social institutions, ranging from standardization associations, land registry offices to financial institutions. However, this focus on large social institutions and the power resulting from their use of large technical systems reifies the trope of modernity (I will address this point in more detail in section 1.2.3). When focussing on technical functions and less on technological form, then a macro level perspective is most commonly adopted. Prominent examples of this view would be Heidegger's *Question concerning technology* (Heidegger, 1977) or Ellul's works on technological order (Ellul, 1962). Just like social constructivist accounts of technology and micro-scale analyses often appear to go together, macro-scale perspectives and a rather deterministic view of technology seem to pair up as well.

One of the problems is, however, that an analysis based only on a micro scale cannot adequately address a user's relation with larger schemes, e.g. of modernity, possibly even omitting the possibility that one is dealing with an infrastructure in the first place. Only

by calling to attention the effects of large sociotechnical systems or infrastructures can a more comprehensive picture be drawn. Likewise, exclusively focussing on social or historical macro-scales skews the understanding of how technologies take up particular forms in different contexts of use. One issue with this categorization into micro-, meso-, and macro-scales is that it might automatically exclude or at least make less visible other possibilities of addressing infrastructural processes. What, for example, are the relations between these scales, are there intermediate scales, or should one better speak of a continuous spectrum instead of distinct scales? These are important considerations and I am painfully aware that they deserve to be addressed in much greater detail. For the purpose of this thesis, however, I will continue to use these standard and rather coarse scales.

To avoid a too narrow view of infrastructures, Edwards proposes to employ a multiscalar approach that—by traversing the different scales—avoids being caught up in single explanatory concepts like social constructivism or technological determinism. Being more than simply a matter of analytical scale, his approach also allows to describe the process of mutual orientation across scales. As an example, he describes the development of an automatic air defense system for the US Air Force in the early Cold War era. In this project, individual engineers were being informed and oriented by large scale military requirements while the same engineers simultaneously oriented an entire Army branch towards the (for the military at that time) novel idea of computerized command and control. The multiscalar perspective can be used not only for including different scales of social organization as in the previous example but also to address multiple scales like those of time or force.

As a result, Edwards' approach does justice to the mutual formation of infrastructures and society. It is not only apt for studying infrastructures, but also for using them as a heuristic to investigate different scales of time or social organization. Likewise, from a temporal perspective, large infrastructures may appear as solid building blocks of our current lifeworld if observed over short time periods. At this temporal micro-level, infrastructures seem to shape and control time rather than being subject to it—think of railroad systems decreasing the travel time between cities or border walls appearing as impenetrable. But when increasing the time scale, they present themselves as fragile—rail tracks and bridges deteriorate or fail by becoming victims to earthquakes, material fatigue, or wars.

1.2.2 Infrastructures and/as environment

This latter observation points towards another fundamental assumption about infrastructures. As much as infrastructures are subject to change and decay due to external influences like weather, so-called natural disasters,[2] or historical upheavals, they offer "systemic, society-wide control over the variability inherent in the natural environment" and

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[2] The term 'geo-physical event' would seem far less value-laden than speaking of 'disasters' but would also be less likely understood immediately.

(at least to some extent as I would remark) confer the "control of time and space" (Edwards, 2003, p. 4). As an essential part of today's modern world, infrastructures not only enable the flow and exchange of a plethora of things but also keep the mostly unpredictable variability of the natural surrounding within limits (think of Dutch dikes or weather satellite systems). They thereby provide a "sense of <u>stability</u>", the "feeling that <u>things work</u>" (Edwards, 2003, p. 189, original emphases) and significantly influence how we experience our natural environment. I propose to broaden Edwards' conception of environment as our natural surrounding to also encompass built, urban environments as well as social milieus. In this sense, infrastructures seem to separate us from these environments by influencing them and how perceive them significantly. But infrastructures also transcend this view as they are subject to multiple influences from these environments.

The inherent entanglement of the technical and the social within and around infrastructures allows the social sciences to use them as a method of inquiry capable of revealing the intersections of technical networks with what they conventionally would be distinguished from, such as ecologies, politics, aesthetics, or social life. As a result, infrastructures themselves come to be seen as an environment. They are parts and forms of society and even the currently predominant way of living.

1.2.3 Transcending modern binaries

These intricate relations let Edwards note that all infrastructures "are in fact <u>socio</u>-technical in nature" (Edwards, 2003, p. 3, original emphasis). He sees the picture that we have of infrastructures—how we think about them and how we design and use them—as an expression of modernity. Other contemporary scholars of infrastructures similarly contend that to be surrounded by and being part of networks of infrastructures means to be living a modern life (Harvey et al., 2016; Larkin, 2013).

Bruno Latour has called the common perspective in which we conceptually and rhetorically separate society from nature or technology the "modernist settlement" or the "modern Constitution" (Latour, 1993, p. 13). This binary split that comes in many forms and shapes—be it the dualisms of human/nonhuman, social/technical, natural/artificial, or mental/material to name just a few—is not merely a matter of rhetoric, simply using language to tell these categories apart. It is also a conceptual split that paradigmatically shapes our picture of the world and our place in it. By continuously believing in the modernist split, we create and explain the world in the same breath. One of the paradoxes of this modern Constitution becomes apparent in the difficulty to properly define these dualisms. If one believes that society is distinct from nature and also that society is distinct from technology, then how are nature and technology related to each other? Are they to be treated interchangeably, as part of the same opposition to society? Or is one rather looking at a "ménage à trois"? Clearly this is not the case. Technology, and more specifically infrastructures exemplify probably better than any other perspective how the modernist

settlement is not only paradoxical in itself but how it also fails to provide a plausible account for the multiple interactions and complexities that arise out of the close relations between humans and things. A hybrid account is better equipped for such undertaking—but represents exactly the kind of "blurry" assemblage that modernists reject. The modernists' trick, Latour explains, is to invoke nature's *and* society's transcendence while simultaneously holding that they are both human constructions. To avoid any contradiction, they must be kept absolutely separate. Without contradicting ourselves we either use the fundamental universality of nature's laws to explain why there are definitive limits to our actions and freedom or we use the certainties of society's laws to criticize the natural sciences for being ideologically biased by overly limiting the apparent domination of humans (Latour, 1993, p. 36).

Following Edwards, meso-scale analyses with their focus on large technical systems and social institutions as their main development drivers strongly frame infrastructures in accordance with Latour's "modern Constitution." Infrastructures are seen here as creating their own, artificial environment, acting together with bureaucracy in opposition to society and nature. Thomas Hughes' notion of "technological momentum" of large technical systems (Hughes, 1987), holding that infrastructures can evolve autonomously and eventually escape society's influence, prominently exemplifies the view in which technology, nature, and society are kept separated.

Although Edwards identifies macro-scale perspectives of infrastructures as obscuring the processes of how infrastructures develop, are used, or what role materials play and thus are susceptible of invoking a rather deterministic view of technology, he also defends the value of including attention to macro scales of force (Edwards, 2003, p. 7). This perspective, he explains, reveals how infrastructures and environment are entangled in various ways, up to a point where they come to be seen as one. Think for example of the large forces of wind and water that can make dikes break. Macro scalar views can reveal that such disasters actually signify the close interrelation between infrastructures and "nature", questioning once more the modernist constitution. Similarly, a focus on micro-scale perspectives—either of individual users or short time periods—brings to the fore the multistable[3] nature of technologies by analyzing how they are put to use, appropriated, or re-used. This multiscalar vantage point invites us to conceptualize infrastructures beyond modern binaries—as also inherently non-modern. If to live in and with infrastructures is to be modern, Edwards concludes, then constantly traversing the scales that make infrastructures tangible must be modern, too. Intriguingly, this view questions at the same time what it means to be modern. In other words, as infrastructures are an expression of modernity and

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[3] The concept of multistability, as introduced by Don Ihde, is a well-established component of technological mediation theory or postphenomenology. It describes the various meanings a technical artifact can have depending on its context of use and an individual's relation to it. For example, a fork can be a means to eat food, it can also be a weapon to kill, or an art object (see for example: Ihde, 1990; Verbeek, 2005).

simultaneously transcend this worldview, they manifest themselves as inherently paradoxical.[4]

1.2.4 From multiscalar to multi-level

Adding to Edwards' already quite comprehensive and challenging view of infrastructures, Brian Larkin has argued that to approach them solely as fulfilling certain social and technical functions ignores the important symbolic role they also play (Larkin, 2013). Challenging the traditional assumption that infrastructures operate usually invisibly, he points out that what he calls the poetic form of infrastructures may often be more important than their technical function.

Infrastructures are capable of mobilizing "affect and the senses of pride, desire, and frustration" (Larkin, 2013, p. 333) by materially embodying the experience of aesthetics. What Larkin calls the "poetic mode" puts particular emphasis on the material qualities of an infrastructure. A building's smooth and shiny surface is not required for its function as office space—it will even make additional cleaning and maintenance tasks necessary. But the sense of affluence, success, or transparency that it projects can be more important than its instrumental function. The poetic thus prioritizes the form and materiality of an infrastructure over its other functions. By emphasizing the importance of this mode regarding infrastructures, Larkin performs a similar move to Bernward Joerges in his critique of Langdon Winner's question if artifacts had politics (Joerges, 1999). Joerges' response that politics have artifacts is consistent with Larkin's attention to technologies' poetic mode. Here, they create a "politics of 'as if'" (Larkin, 2013, p. 335), whereby the aesthetic dimension of technologies represents certain ideals or narratives, as seen already with the picture of modernity. In other words, the first multilane highways in Pakistan were not built to decrease traffic jams and reduce travel time but embodied an attempt to be modern by copying what was seen as a modern infrastructure. Similarly, the widespread enthusiasm amongst nations to have their own space program is an expression of spaceflight's symbolic power. If a society can build and launch a rocket, then it is technologically potent, the belief might go. The culmination is then the experience of the rocket launch as a massive group erection.

To capture these important meanings, Larkin proposes a multi-level analysis of poetic and technical forms—in addition to Edwards' multiscalar approach. This does justice to the fundamental relationality of the social and the material, able to see aesthetics not as an idealized and exclusively human experience but rather as the result of sociomaterial interaction. The term multi-level makes clear that there is not just a "political", "performative", or "poetic" function but that these necessarily come hand in hand with the materiality and technical functions of infrastructures.

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[4] A multidisciplinary group of scholars has suggested that paradoxes play an important role when trying to understand infrastructures (Howe et al., 2016). According to these authors, the three paradoxes "ruin, retrofit, and risk" are particularly insightful.

The poetic mode of infrastructures finally points to the last concept that I need to establish, that of the combination of politics and technology, although it should be clear after the discussion of the link between infrastructure and modernity that by no means do I intend to suggest that there are definitively such disparate categories to begin with. Instead, in a "*recursive* relation between the making of infrastructure and the shaping of society" (Harvey et al., 2016, p. 20, original emphasis), they co-constitute each other, making it impossible to tell origins and effects of this evolving relation apart.

Larkin assumes the concept of technopolitics to be among the most promising approaches for studying infrastructures. On the one hand, they can reveal underlying political principles informing and shaping technological projects; on the other hand, they illustrate the formation of government systems or political agendas. Timothy Mitchell's work on the technological and governmental co-transformations in twentieth century Egypt (Mitchell, 2002) or the sociomaterial agencies of coal and oil and their mutual shaping with different forms of democracy (Mitchell, 2009, 2011) are excellent examples of this approach. Because of their multi-perspective approaches, both technopolitics and infrastructure studies address similar issues of the intersection between the social, political, and the technical. Both concepts also transcend the modernist Constitution, making them an interesting methodology for analyzing a border wall. By being paradoxical concepts, they help underscore a border wall's various paradoxes.

1.3. Thesis outline

In the following chapter 2, this nuanced view of infrastructures serves as a vehicle to elaborate on the combined evolution of the poetics and materiality of the Berlin Wall. Viewing the Wall as an infrastructure allows to examine the ongoing processes of mutual orientation between micro- and macro-scales of temporal or social organization and thereby make clear that common causal and anthropocentric explanations of historical decisions are not the only way to describe sociotechnical change. Instead, the understanding that infrastructures are important parts of society illustrates how technopolitics emerge from sociomaterial with the Berlin Wall.

The view of the Wall as sociomaterially intertwined infrastructure invites to ask how deep this entanglement goes. Chapter 3 concerns with health conditions like depression or anxiety that—termed by East German psychiatrists as *Wall disorder*—were thought to be related to the Wall. The notion of infrastructural violence helps to understand how the Wall and the *urbicide* of divided Berlin could materially manifest itself within people's bodies. Seeing infrastructures as environments, this analysis unveils how deeply humans and the material world are intertwined, putting into question the modern, binary worldview.

Contrasting this focus on human bodies, chapter 4 traces the Wall's material remnants through time and across the world. In three different cases, the processes around

deconstructing, appropriating, preserving and repairing its remains are analyzed. Emphasizing infrastructures' temporal character and how they are always in the making, this chapter shows that materiality and poetics of the Wall co-evolve together with social relations and thus offers an idea of how material culture might be understood beyond its conventional meaning. Out of this complex and hybrid formation, technopolitics are revealed as a dynamic process that emerges from sociomaterial interaction.

The thesis concludes with some suggestions for further analyses of the various manifestations of technopolitics and how these hybrid processes provide an idea of what it means to live in a material culture.

2. The Berlin Wall as paradoxical infrastructure

2.1 Introduction

In this chapter, I will elaborate on the perspective of the Wall as infrastructure and focus on the importance of its poetic functioning in order to highlight the multiplicity of the Wall's entanglements with its sociomaterial environment. The process of mutual orientation helps to reveal the temporal nature of the Wall's poetics and materiality, showing that the Berlin Wall functioned on many, sometimes paradoxically contradicting levels. By tracing the Wall's material changes over three phases of its construction, from the first barbed wire to a more permanent brick wall to the final concrete design in which it fell, a process of ongoing sociomaterial change is revealed. Its materiality and symbolic meanings are not historically fixed but evolve as a fluid amalgamation with engineering considerations, government decisions, economic requirements, military techniques, and cultural elements. From this dynamic, technopolitics emerge as a sociomaterial consequence.

2.2 Approaching the Berlin Wall as infrastructure

Just like infrastructures induce "massive ordering effects across multiple scales" (Harvey et al., 2016, p. 21), the Berlin Wall, too, shaped and still shapes individual lives, communities, cities, industries, nation states, international relations, and global history.. At the same time, the Wall—like infrastructures—has experienced ongoing change in various ways. Approaching the Wall as infrastructure highlights its paradoxes, such as simultaneously blocking the view and drawing attention to what lies 'on the other side', responding to a crisis by walling and thereby creating new ones, and, notably, that between the Wall appearing both as a solid barrier capable of determining individual lives, urban environments and international relations, and as a fragile, evolving participant in an ongoing process of open-ended becoming.

2.2.1 The Wall's infrastructural poetics

Border walls never fulfill the intended function of blocking flows across borders. This is the predominant conclusion of contemporary border studies and Berlin Wall scholars alike (Brown, 2017; Chaichian, 2013; Detjen, 2011; Henke, 2011; Jones, 2012; McGuire, 2013; Saddiki, 2017; Sälter, 2011b). At the Berlin Wall, escapes from the GDR dropped with the erection of the Wall but they never ceased (Sälter, 2011b). Thus, in addition to instrumental functions of separating areas with great economic disparities, of a protective barrier, or the control of population movements, other functions should be taken into consideration as well. Drawing attention to infrastructures' poetic mode reveals these functions. The poetic mode

emphasizes how an infrastructure's materials and form give rise to symbolic meanings through sociomaterial interplay. According to Larkin, these can often be more important than technical functions. In this way, a focus on poetics reveals a connection between material, social, cultural and political elements.

What then are the Berlin Wall's poetics, how have they changed in the course of time, and how do they depend on context or perspective? First, let us consider why approaching the Berlin Wall on a poetic level—to use Larkin's term—is justified and promising. Rather than being an invisible part of everyday life, the Berlin Wall was highly visible—or, better, perceivable. As East Germans were usually not allowed to come close to the Wall unless they officially had been found trustworthy enough, many actually could not see the Wall but felt it nonetheless. Everybody knew that there was a fortified border and although it was to be called an antifascist rampart, many understood it as a prison wall as the high numbers of escapes, failed attempts, and deaths[5] at the Wall hauntingly suggest. For West Berliners, access to their side of the Wall was usually not restricted and many felt invited by the giant concrete canvas it provided to create street art of all sorts. One could see here a first poetic paradox, with the Wall symbolizing unfreedom on the one hand while on the other offering a large space for the freedom of expression. Regardless of this liberty on one side of the Wall, reports about the perceived imprisonment in the divided city suggest that it could be felt on both sides. Issues of visibility and poetics are closely connected. To argue that infrastructures become visible only upon breakdown completely misses their symbolic function.

Of course one should note that the events of November 9th, 1989, are easily characterized as an infrastructural breakdown. And certainly, this breakdown increased tremendously the visibility of the Berlin Wall. I will show later that different levels of breakdown should be distinguished. However, for those living *with it* (or against it—a matter of perspective), the Wall did not emerge from the invisible upon falling down; it was highly perceivable the entire time.[6] This high degree of perceptibility calls for a focus on its poetic function.

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[5] During the Berlin Wall's 28 years of existence, at least 5.075 successful escapes of GDR citizens are known. However, the number of failed escapes (aside from the ones ending deadly) remains unknown till this day. In the same time period "at least 140 people were killed at the Berlin Wall or died under circumstances directly connected with the GDR border regime. In addition, at least 251 people from East and West died before, during or after controls at Berlin border crossings while travelling" (Zentrum für Zeithistorische Forschung Potsdam e.V. et al., 2019). These numbers also include people who killed themselves upon being caught attempting to jump the Wall and border guards killed on duty.

[6] In this regard, I prefer perceivable over visible to do justice to the many ways, the presence of the Wall could be felt. It could be perceived as living under the impression of being imprisoned or hearing the West Berliner subway rattling under East German ground, unable to reach or ever see. To establish an easily graspable connection between the discussion of predominantly (in)visibility within infrastructure studies, I will nonetheless often make use of this term, but invite the reader to understand it in a broader sense.

The GDR's official framing of the Berlin Wall emphasized its *protective function*. This needs to be understood as much from a poetic as from a technical-functional perspective. Understanding the erection of the Berlin Wall as a matter of poetic construction entails emphasizing the Wall's materiality—contrary to what one might expect when trying to move the discussion away from any technical function that commonly is more easily associated with passive materials. Building a border wall may be a sign of technological and economic capability but it is foremost aimed at expressing a state's strength both internally and externally. Fortifying its borders, the political philosopher Wendy Brown argues, is ultimately a state's attempt to restore or reinforce its sovereign powers (Brown, 2017). The construction of the Berlin Wall expressed this power towards the West and solidified the GDR's claim of being a sovereign, socialist state. Simultaneously its construction revealed the Eastern state's weaknesses. Being incapable to otherwise reliably ensure its citizens of its powers and crucially of the socialist endeavor's attractiveness, closing the border seemed the only option to stop mass escapes during the 1960s (Sälter, 2011b).

Brown's thesis that walls and other border security efforts are first and foremost a piece of security theater strongly underlines the importance of considering the Wall's poetic function. Yet, the Wall's technical capacity to actually control and significantly limit the flow of people should not be overlooked. The Wall worked by means of various technical and poetic functions, both expressions of the Wall's sociomateriality. In fact, the assumption that walling is primarily a performative act crucially rests on the image of an unsurmountable, strong wall material that can transport such expressions of sovereign power, political determination, and military strength. The Wall thus appears as a hybrid structure.

To understand the symbolic values of the Wall, as Brown suggests, requires reading such material texts. In other words, the poetics of infrastructures only emerge if there are readers who are fluent in the languages of materiality and if these materials actually contribute to the symbolic meanings. Applied to the Berlin Wall, this means that the materiality of a brick wall embodied such significations more forcefully than the original wire fence, while the final concrete wall projected the image of an impenetrable barrier even more so. We shall see later in more detail that these considerations contributed significantly to the material and technical evolutions of the Berlin Wall and, importantly, how poetics and materiality co-evolve with each other over time.

2.2.2 Poetic paradoxes

The Berlin Wall was created out of an emergency. Whether framed as a necessary "antifascist rampart" against the Western capitalist value system that was seen as the origin of the Nazi terror or as preventing too many East Germans from leaving the country for the West, in the eyes of GDR leaders an infrastructure to minimize these threats was needed. One can regard many infrastructures as a response to particular (perceived) threats or risks, be it the security infrastructures to keep nuclear reactors safe from natural disasters or willful

manipulation (Winner, 1980), or prepaid water meters to help calm social tensions around public services in economically disadvantaged communities (von Schnitzler, 2008).

Such a perspective on infrastructures and risks also raises the question if attempts to mitigate certain risks are not likely to give rise to new ones. The Berlin Wall can be seen not only as a response to mass escapes that were threatening the economic stability of the young GDR, but also as answering a felt need to keep out Westerners and hide from their eyes the rather unfortunate living conditions in the East. Yet, the act of walling drew more attention to these issues—the exact opposite of what the Wall was intended to do.

This is a poetic paradox. On the one hand, there is the enactment of 'security theater' (making unmistakably clear that it is primarily the poetic mode in which such walls function), featuring an allegedly impenetrable, protective wall (Brown, 2017). On the other hand, this infrastructure increases the visibility of what it is supposed to obscure or guard against, thus also functioning on a symbolic level but with a contrary effect. A similar process can be currently observed in the debate around the US-Mexican border wall as envisioned by Donald Trump. For those literate in the requisite language, the discussion there similarly highlights the migrant's problems and importantly the humanitarian issues in their countries of origin and along their paths—exactly the issues that the prospective barrier is supposed to wall-out. Thus, at least two paradoxes come together in this perspective on the Berlin Wall's infrastructural poetics. First is the act of walling-out while simultaneously increasing the visibility of what is behind the wall. Second, seeing the Wall as an emerging infrastructure to respond to threats makes evident that new threats are created in its wake.[7] The act of walling-out relies both on a narrative of the Wall as strong or unsurmountable and the associated material qualities like hardness or impenetrability. At the same time, this border fortification works as a lens, concentrating attention of observers on the conditions behind the Wall in the attempt to find reasons for the apparent state of emergency out of which it suddenly developed.

2.2.3 Mutual orientation—Poetics across scales

These manifestations of the Wall as an infrastructure should make it possible to approach it from the perspective of different scales. Every successful escape, and every failed attempt resulting in the death of the escapee refocused attention on the Wall, making it more visible again and giving it even more prominence. The images of 18 years old construction apprentice Peter Fechter left bleeding to death in the shadow of the Wall quickly became famous, showing how both sides did not come to help him out of fear to provoke each other. His case in 1962 or the young student Dieter Wohlfahrt who similarly died in 1961 after being shot while trying to cross the Wall exemplify how individuals attempted to negotiate the claimed impenetrability of the Wall. Both young men were left bleeding to

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[7] These threats could include the increased attention of the West to the conditions in the East or the large financial spendings to build and maintain the Wall that now were not available for other issues.

Fig. 2.1 Official street sign "Straßensperrung versursacht durch die Schandmauer" (road closure caused by the Wall of Shame), Berlin, 1961. (Stiftung Haus der Geschichte der Bundesrepublik Deutschland, https://www.orte-der-repression.de/einrichtung.php?id=41)

death as Western police, British and US military refused to intervene despite facing outraged crowds of Berliners who demanded them to help (Lehmann, 1986; Zentrum für Zeithistorische Forschung Potsdam e.V. et al., 2019). Likewise, successful escapes through carefully dug-out tunnels, crawling through sewer systems, or by literally jumping the Wall drew attention and increased the Wall's visibility. These micro-scale events in terms of social organization informed macro-scale framings of the Wall.

In the West, people invoked the Wall as a symbol of oppression and brutality of an, in Western eyes, illegitimate regime. Each escape, each additional *Mauertoter* (Berlin Wall casualty) was proof enough to use the dysphemism *Schandmauer* (Wall of Shame), which was even used officially by the city of West Berlin for the many new cul-de-sac signs now necessary (Figure 2.1). It also characterized the state of despair out of which the GDR seemed to act and this state's deep mistrust towards its own citizens. By contrast, the escapes and deaths of the so-called *Sperrbrecher* (barrier breachers) (Henke, 2011, p. 18) were framed by the East German government as attempts of subversive elements to undermine the young and still fragile socialist enterprise, further underlining the importance of a deterring bulwark. In this view, only a strong and impenetrable barrier could protect the young state. Not only on a micro scale of individual occurrences like the failed escapes of Fechter or Wohlfahrt did the materiality of the Wall appear as an almost unsurmountable, solid barrier. It did so also for both sides of the Wall if looked at from a macro scale

perspective of entire states. Yet, the poetics—that is the meanings conveyed by these material qualities—obviously differed considerably between East and West.

A similar conclusion regarding the contradiction between the apparent impenetrability of the Wall and its volatile, fragile material nature is offered by a look across temporal scales. As Edwards points out, a broad historical perspective lets infrastructures appear as unchangeable bedrocks of modern society. The Berlin Wall may have appeared for many in a similar fashion—as an unchangeable reality to which people finally had grown accustomed, as phrases like "mit der Mauer leben" (living with the Wall) suggest (Lehmann, 1986).[8] When looking at events like individual escapes or, even more interestingly, the Wall's initial construction or its fall, then a micro-scale perspective with respect to time needs to be adopted. The Berlin Wall's initial appearance came literally overnight as, within a few days after the first barriers had appeared, relevant houses were cleared, windows bricked-up and barbed wire replaced by brick walls. Just as quickly, the Berlin Wall came down. Not in its entire material composition but in its symbolic function as the ultimate barrier between East and West, it fell during one night. The concrete structures required a bit more time, but wall peckers and destruction companies managed to make it almost completely vanish within only a couple of months.

These short term events inform macro-scale depictions of the Wall. The Wall appeared quickly, its materials changed at a fast pace towards solid bricks and concrete, as I will discuss in more detail in the next subchapter, and thereby left on a large time scale the impression that it had come to stay. Likewise, the sudden fall conveys on a temporal macro scale the image of a fragile structure that quickly crumbled away once people started attacking it. By comparing micro and macro scales of temporal and social dimensions respectively, the diverging poetic and material modes of the Wall come to the fore, making clear that these not only always evolve with each other but depend on cultural or political interpretations as well.

2.3 A dance of materiality and poetics: The Wall's becoming

The poetics of the Wall and its materiality co-evolve over time, meaning that the material properties of the Wall and its symbolic meanings are different facets of the Wall's becoming. To better understand this process, different stages of the Wall's construction are considered. The discussion is organized around three phases of the Wall's becoming that I propose to address as follows. The first phase of emergency and improvisation in August 1961 exemplifies how poetics emerge from the use of different materials. The second phase of

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[8] In the eyes of this author it had taken almost 26 years for people to get used to the Wall as he explains in an equally titled essay published in the official West German civic education journal 'Aus Politik und Zeitgeschichte'. At last, he concludes, West Berliners had accepted this 'concrete' reality, with some even making a living of it thanks to the tourists that wanted to see the uncanny structure (Lehmann, 1986).

determination and fortification, starting a few weeks later, helps to highlight how designing and resisting the Wall co-shape each other. Finally, during the third phase of what I propose to call appeasement and modernization, starting in the mid 1970s, the ongoing temporal co-evolution of wall design, poetics and materiality come to the fore. All three examples show that poetics and materiality of the Wall emerge as a fluid hybrid from the dance of design, resistance, and material affordances.

2.3.1 Emerging poetics and barbed wire

This section describes the situation of an emergency and the poetics that emerged from the use of barbed wire and starts with the appearance of low barbed wire fences. In the night from 12 to 13 August 1961, thousands of East German police and military forces started to tear up Berlin's cobbled roads, roll out barbed wire and install fence posts. Within a few days, a total of more than 470 tons of barbed wire had been laid out and 48.000 concrete fence posts had been planted (Henke, 2011, p. 17). Together with the complementary wire fencing, the NVA considered this type of barrier the most effective one in terms of inhibiting people's movements across the demarcation line (Schmidt, 2011). The military seemed to prefer a more flexible solution that could be easily relocated, opened or closed over a more permanent structure that would not only be more laborious to erect and maintain but also did not grant the border guards the level of oversight that a light wire barrier provided.

Looked at from a more poetic level, a barbed wire fence quickly rolled out over torn up cobblestone streets appears as a fragile and rather improvised solution. Being easily removable and jumpable, as the so-called "leap into freedom" of East German soldier Conrad Schumann on 15 August 1961 shows (Figure 2.2), it did not leave the impression of the city's permanent division. The laying of barbed wire is part of the emergence of an infrastructure. Building the Wall in response to a perceived state of emergency offered enough support to justify its construction. The atmosphere of an acute emergency continues to resonate across time, granting the Wall politics in its own right. Without wanting to stress the meaning of the word too much, it is no coincidence that border walls often *emerge* out of states of *emerge-ncy*.

Being hastily assembled, with barbed wire that out of the sudden need ironically mainly originated from West German production (Henke, 2011), the Wall's first phase was a makeshift one. Without doubt, people were terrified by the imagined future "promised" by the barbed wire. The stories of relatives having to return from their way to a wedding, or a mother handing her child over the barbed wire to its father in the West are well known. But this barrier did not appear as a definitive blockage meant to last for decades. The meanings of improvisation and emergency—being easily installed but also removed—were co-shaped by the material properties that a wire barrier seemed to have. It is malleable and can be brought into different shapes not only by its builders but also by those confronted by it. Yet,

Fig. 2.2 East German soldier Conrad Schumann leaping into West Berlin, 15 August 1961. (International Center of Photography, https://www.icp.org/browse/archive/objects/east-german-soldier-hans-conrad-schumann-jumping-barbed-wire-barricade-to, last accessed 20.05.2019)

being rather porous and penetrable—as the still high numbers of successful escapes across the barriers in 1961 make evident—is not the result of an exclusively techno-scientific definition, as the opposing opinion of military planners suggests. Instead, both the Wall's materiality and its poetics are located on a technopolitical spectrum that is constantly under negotiation between its builders, those walled-in or -out, and its materials.

2.3.2 Fortification: The becoming of a death strip

Infrastructures are always in the making, constantly evolving and being tinkered with, and so is the Berlin Wall. In this section, the increasing fortification of the Wall comes to be seen as the manifestation of an ongoing dance of agency between humans and nonhumans, helping to refocus from anthropocentric causal explanations of historical developments.

As the quickly laid out fencing was not seen as conveying the intended message of determination and sovereignty, planning meetings were held by the central staff of the GDR roughly one month after the first fortification efforts to determine the future design of the new border. Although military planners decisively opted for a barbed wire barrier, arguing that it

was "both more durable and effective to prevent border breaches" (Schmidt, 2011, p. 457, citing from the records of the central staff meeting on 20.09.1961; my translation), the decision was made that a fortified brick wall was to be built. Construction workers and soldiers soon started to replace the barbed wires by a brick wall. Houses that were standing too close to the newly fortified border (some of them so close that the pavement in front of the door was *on the other side* in West Berlin) were cleared and torn down.

As a response to ongoing escapes, the side of the outer wall facing eastwards was painted completely white (Frank, 2016; Sälter, 2011a). This material change, introduced by the engineering corps responsible for construction and maintenance of the Wall, was supposed to make escapees spottable more easily. The tinkering of individuals with the Wall oriented military organizations towards specific design decisions. These decisions' material manifestations would in turn orient those attempting to leave the GDR towards different escape strategies. But also Berlin's wildlife was taking part in this process. Other than the officially and disparagingly called *Republikfeinde* (enemies of the Republic) that under no circumstances were allowed in the border strip, entire armies of rabbits and other rodents enjoyed free movement there. In order to prevent them from setting off the silent alarm of the signal fences, its wires were moved higher up and the concrete foundations were equipped with holes just wide enough to give rabbits unhampered border traffic. Successively, the open space behind the Wall turned into a heavily fortified *cordon sanitaire* with several lines of fencing, vehicle barriers, alarm wires, watch towers, and floodlights, giving guards an unobstructed view and free field of fire, even at night (Figure 2.3). It would become known as the death strip.

These infrastructural developments are often interpreted in the form of a causal argument by pointing out that these material changes were meant by the East German government to realize a more powerful statement of decisiveness and permanence (Sälter, 2011a; Schmidt, 2011) and more generally by Brown's idea of border walls as the staging of "an aura of sovereign power and awe" (Brown, 2017, p. 26). In this view, the border wall poetics can be said to have trumped pragmatic considerations like the economic costs entailed by the construction works or the military or technical disadvantages of an actual wall. Bricks obviously stand more easily as a symbol of impenetrability than a wire fence.

I propose to adopt a more hybrid perspective in which the design decisions appear as manifestations of the intricate entanglements of military planners, GDR leaders, guards, resisting citizens, rabbits, and the affordances of wire, fences, white paint, or concrete. The rabbits' compulsion to move and the GDR citizens deciding to turn into *Sperrbrecher* forced the Wall to be modified and fortified. In turn, a death strip free of predators that allows rabbits to roam freely lets their colonies thrive even more. Modified escape techniques using tunnels, trucks, or higher ladders also confront border guards and engineers with new

Fig. 2.3 The border strip at night, Berlin 1979. (http://www.mauer-fotos.de/fotos/, last accessed 20.05.2019).

challenges to adapt the Wall to.[9] Despite these efforts, escapes continued to happen on a regular basis.[10]

Such struggles between the environment, materials, engineers, and users are typical for infrastructures.[11] Seeing these struggles as the result of an ongoing process of mutual accommodation and resistance (Pickering, 1995) that takes place across different scales— from micro-scale individuals or rabbits, meso-scale military corps, to macro-scale political decision makers—reveals the Wall as the stage of an ongoing dance between design, resistance, and material affordances.

2.3.3 Appeasing the West: Technopolitics through co-evolution

In this final section, the further development and reshaping of the Western appearance of the Wall is described. The design choice of a smooth concrete wall highlights once more the temporal character of the Wall—how it continuously evolves through a composition of

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[9] A good overview of the diversity of escapes can be found at http://www.chronik-der-mauer.de/fluchten/ (only in German, last accessed 29.05.2019).

[10] Between 1961 and 1989, almost 5.000 people managed to escape across the Berlin Wall. Along the entire inner German border, an additional 40.000 successfully breached the barriers (Zentrum für Zeithistorische Forschung Potsdam e.V. et al., 2019).

[11] See for example Andrew Pickering's discussion of the construction of levees along the Mississippi River, where rising water levels forced levees to be build higher which in turn made the river's water level rise even further. This flood protection infrastructure provides the stage for Pickering's famous notion of a "dance of agency" (Pickering, 2008).

design, poetics and materiality. Finally, it gives us an impression of the scope of the technopolitics of a border wall.

From the mid 1970s on, two significant changes in the Wall's built structure occurred. The bricked *Vorderlandmauer* (front wall) was replaced by the so-called *Grenzmauer 75*, a design of prefabricated concrete segments lined on top with a concrete pipe. Secondly, the death strip was sealed off towards the East by the so-called *Hinterlandmauer*, meant to drastically decrease possibilities of escape from GDR across the intra-German border. I will refer to this entire system as the Wall.

The rationale for the new concrete front wall seems driven again by the border infrastructure's poetics. Following the decisiveness and rather coarse military appearance of the concrete brick wall topped with barbed wire, the Wall now appeared as a genuine national border. Using tall concrete slabs with a sleek surface, it was hoped that the unfortunate impression that the aggressive border fortifications had left internationally could be improved (Sälter, 2011a). For a regime eager to be internationally recognized, the public appearance of the deterring border strip seemed more and more unfit. In addition to the novel and even more permanent concrete wall, the border troops were ordered to give the Wall a more friendly image. This meant that, for example, vehicle barriers and dog runs were relocated further into East-Berlin. Ubiquitous large concrete flowerpots served a double purpose—they prettied up the depressing grey hinterland wall while also being vehicle barriers. Whether a mere coincidence or not, it is during the period of this new concrete wall that reports about the everyday life (Figure 2.4) with the Wall can be found (Lehmann, 1986;

Fig. 2.4 Everyday life close to Potsdamer Platz, West Berlin, 1981. (http://www.mauer-fotos.de/fotos/f-015518/, last accessed 20.05.2019)

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Moran, 2004). The everyday cruelty of the death strip was hidden behind a sleek concrete surface without barbed wire, providing a clean "modern" image suitable for a nation's capital. Nonetheless, the Wall's violence remained visible and perceptible as will be seen in chapter 3.

Considering this infrastructure's changes over time begs the question if its poetics and ultimately its politics undergo temporal changes as well. As we have seen already, the complex of poetics and materiality changed considerably over time. To underline this point, consider what often (and wrongly as I will argue in chapters 3 and 4) has been called the final material transition of the Berlin Wall—its fall in November 1989. The fact that the Wall miraculously opened in a peaceful way made for an equally profound poetic transition. Overnight, it changed from a detested symbol of oppression to one of freedom and liberation, recognized and adopted all over the world. Simultaneously, its materiality changed from being hard and impenetrable to a quickly crumbling concrete. Materiality and poetics not only change over time, they change together in an entangled evolution.

Consider how at one stage the Wall's poetics as an impermeable, protective barrier, symbolizing sovereign determination (what Brown or Virilio call theatric effects) and its hard, strong materiality convey particular pictures of the Wall. Yet, materiality itself is an enactment, too. The impression of an impenetrable, unchangeable wall is formed and reinforced by the poetic mode that framed the Wall's construction and existence. Thus, the impenetrability of the Wall and its (for many Berliners both East and West) perceived unquestionable existence[12] is not a border wall's material property per se. Rather, this quality emerged out of the technopolitical negotiations that took place on various levels and both sides of the Wall. In chapter 4, this point will be picked up once more to show how the Wall's solid, impenetrable character not only co-emerged along its poetic function but also how it shifted to a complete different set of poetics and materiality with its fall and how it continues to evolve even today.

Seen from the perspective of the Wall, the importance of the Wall's poetic mode manifests itself in the choice of the building materials. Following the barbed wire fences, a barrier appearing more permanent and more deterring and a less malleable construction material was chosen. From the mid 1970s on, a wall more representative of a government seeking international recognition was desired and concrete—although from a technical, scientific point of view even harder and less penetrable than bricks—became the material of choice. To the outside, the new concrete slabs were believed to have "a less martial appearance" and so hoped to reduce the international image damage done by the death strip and its many victims (Sälter, 2011a, p. 132). This is an example of the Wall's technopolitics.

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[12] Many people may have learnt to tolerate it and include it in their daily routines, but it is doubtful that they had ever accepted it.

I propose to understand technopolitics as the manifestation of the symbolic meanings that the Wall afforded and how these meanings in turn were shaped and interpreted by East German leaders, escapees, or the Western public. The Wall's continuous developments suggest that such reciprocal processes go hand in hand with technical and material changes. These co-evolutions emphasize that technopolitics are not politics by means of technology but instead are better understood as politics that simultaneously inform and emerge from the design, use, or resistance of infrastructures and the possibilities opened up by their forms and materials. Thus, we come to see that over time, materiality and poetics of the Berlin Wall changed considerably and that this change was not only due to different building materials used. Instead, the degree of the Wall's perceived impenetrability depended on social and political as well as military, environmental, and technological conditions.

2.4 Conclusion

Describing the Wall as an infrastructure helps to emphasize its manifold paradoxes and to understand how it can be seen as an impermeable barrier *and* a fragile construction. Conceiving it as infrastructure also allows to underline the Wall's poetic functions in addition to its instrumental ones. With the continuous evolutions of the intertwined material and symbolic aspects of the Wall that I have traced over three phases of the Berlin Wall's construction, the important aspect of infrastructures' temporality has been brought to the fore as well, eventually revealing the Wall as an evolving participant of an ongoing process of becoming.

The decisions to develop the barbed wire fences into a brick wall with a death strip and ultimately into a more innocuous-seeming and clean concrete wall are not taken as the historical causes of the Wall's becoming. Instead, I have proposed to adopt a hybrid perspective featuring an ongoing dance between design, resistance, and material affordances. Finally, the way in which the poetics and materiality evolved simultaneously with these decisions gives a clear answer to both Winner's and Joerges' questions: Yes, politics have artifacts have politics—let's call this process *technopolitics*. However, these are not politics attributed *on top* of infrastructures but emerging from the various interactions and tinkering *with* infrastructures.

3. From Bricks to Pain: Infrastructural Violence and somato-politics

3.1. Introduction

This chapter is dedicated to the kind of violence arising from daily interaction with the Wall. People fell sick, resisted or domesticated the Wall, identities were influenced. Soon after the Wall had been built, the term *wall disorder* appeared to address the various mental and physical symptoms shown by those who did not cope well with their new living conditions. I trace this term, its use and the health and living conditions it addressed through different points in time—from the emergence of the wall disorder in the 1960s to signs of emotional repression and relief felt by East Germans right after the fall of the Wall in 1989.

By approaching wall disorder syndrome as a form of *infrastructural violence,* we can understand better how the the Berlin Wall's effects unfold beyond a particular point in time or specific location and how the Wall re-materializes in one's body. I offer and discuss two ways in which one can approach infrastructural violence in relation to the Berlin Wall. First, infrastructural violence can be seen as the breakdown of the process of mutual orientations. With no means on a micro level to influence the Wall and its functions, people were subjected to its influence. Secondly, I propose to understand infrastructural violence as a disconnection from existing infrastructures that, in the case of the Berlin Wall, could even be called *urbicide*. This disentanglement is aggravated by a state which abdicates its responsibility for the effects such violence can have.

In order to understand how these changes in infrastructures and urban environment can manifest themselves somatically, I adopt a view of the human body inspired by Tim Ingold's notion of meshwork that sees human life-paths as inseparably intertwined with the material world to offer one explanation of how the emergence of a Wall and the simultaneous massive and violent re-ordering of urban space could seriously affect people's health. This perspective helps recognize that the Wall existed within one's body and that it manifested itself in a variety of symptoms with suicide as the ultimate escape from it perceived imprisonment.

3.2. Introducing infrastructural violence

To understand infrastructures as fundamental parts of societies, as being intricately woven into the fabric of daily life, and as enabling the flow and exchange of people, ideas, or materials, in short their "taken-for-grantedness" (Star, 1999, p. 381), raises the question whether infrastructures also have an equally *disabling* side. When viewing the Berlin Wall as infrastructure, as I suggest, this question can be answered positively—the Wall was seen as a barrier, restraining exchange and blocking flows—even though the Wall's sociomaterial

entanglements require a far more differentiated view as I have tried to show in chapter 2. Yet, even by looking at water networks, sewage systems, or roads and bridges that could more easily be conceived of as infrastructures, we notice that these too, are more ambiguous than might commonly be suspected. Just as the act of walling-out increases the attention towards those who are supposed to be less visible behind the wall (see chapter 2), speaking of electricity grids or water networks in regions where these are not ubiquitous brings those to our attention who lack such infrastructures. Even being infrastructurally connected can have deleterious effects as the water supply's contamination with lead in Flint, Michigan, has recently reminded us (Hanna-Attisha et al., 2016).

To address the mental or physical harm that may be the result of such infrastructures or the lack thereof, the notion of *infrastructural violence* has been proposed (Rodgers & O'Neill, 2012). Dennis Rodgers, who introduced this term in the context of ethnographic scholarship,[13] proposes to use it to address "processes of marginalization, abjection and disconnection" (Rodgers & O'Neill, 2012, p. 403). Examples in this field range from marginalizing certain religious groups by only reluctantly connecting them to the community water supply in Mumbai (Anand, 2011), the abdication of responsibility by Western oil companies in Equatorial Guinea to provide comparable infrastructural standards to their ex-patriated managers *and* their local African workers (Appel, 2012), or the disciplinatory effects of prepaid water meters in South African townships (von Schnitzler, 2013). A different perspective highlights infrastructures' vulnerability to terrorist attacks or other forms of military or "state infrastructural warfare" (Graham, 2011), as well as infrastructures' more active role in military conflicts as intriguingly described by Stephen Graham as "everyday infrastructures as weapons of war" (Graham, 2004, p. 10).

Drawing on these terms, one can see Langdon Winner's seminal case study of Robert Moses' low-hanging overpasses on Long Island (Winner, 1980) as a story of infrastructural violence, too. Winner points out that the deliberately low-built bridges prevented public buses from passing and thereby kept low-income and black people—that at the time were usually using public transport—from accessing Long Island's beaches. The bridges, he claims, materially embody and amplify segregation and discrimination against social class or race. As part of a road network that has deliberately been built that way, they represent a case of *active* infrastructural violence (Rodgers & O'Neill, 2012).

By contrast, these authors see infrastructural violence as *passive* if such outcomes have not been designed into infrastructures but are the result of not being connected to them in the first place or other forms of (technical) limitations. However, such distinctions are rather problematic since they obscure the complex and multi-faceted processes of use,

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[13] The term can already be found earlier in academic literature as an article from 2002, titled *The New Law of War: Legitimizing Hi-Tech and Infrastructural Violence* shows (Smith, 2002). Yet, this author does not clearly define the term and instead appears to use it synonymously with *infrastructural war* and *infrastructural damage* in his discussion of military campaigns and collateral damages.

domestication, possible interactions between users and designers, or instances of repair and retrofit of infrastructures. These issues and infrastructures' complex and evolving nature—as their ontology as both thing and relation between things suggests—highlight the contextual and temporal dependency of what might count as active or passive violence.

To make this problem more clear, consider Bernward Joerges' response to Winner, arguing that the reason the Long Island overpasses were built so low lies in the fact that they were part of the so-called parkway road system meant for recreational driving in automobiles (Joerges, 1999).[14] From Joerges' perspective, the blocking of buses would therefore be a form of *passive* infrastructural violence. This makes clear that a distinction between passive and active is largely perspectival and dependent on one's conception of what constitutes infrastructures and how they come about. One should add that considering violence as passive certainly does not imply that it is less harmful. It could even be worse. In either case, the bridges provide a *technopolitical terrain* (von Schnitzler, 2013) on which issues of social ordering and structural violence become visible and are acted out.

This example makes clear that infrastructural violence can be useful to speak about the various adverse, disabling, even disastrous effects that can emerge from infrastructures and their (non)use, especially when recognizing that the line between active and passive violence often is blurred (if one attempts to draw such distinction at all). Of course, there could be ferocious intentions clearly recognizable behind the design and use—as is probably most drastically exemplified by the extensive infrastructures of and around concentration camps during the Third Reich. But there could also be (certainly less) harmful effects unintentionally emerging from infrastructures—just try to spend a couple of nights in an airport's landing approach path or next to a busy highway and you will know that infrastructural noise hurts.[15] In either case, a relation can be found between people's harm and their connection to one or several infrastructures. The fact that the Berlin Wall functioned as a barrier, blocking rather than allowing flow, leading to innumerable broken dreams, hundreds of deaths, and a large number of mentally or physically harmed people calls for an examination of the Wall's infrastructural violence.

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[14] Winner's account has been challenged even more, since old public transport schedules suggest that there actually were busses that regularly stopped at the beaches, making the story of definitively keeping poor people from accessing the beaches less credible (Woolgar & Cooper, 1999).

[15] The use of the term *noise* as opposed to *signal* points to its unintended existence.

3.3 Wall disease and infrastructural violence

3.3.1 The emergence of the Wall disease

Shortly after the first border barriers had been installed in August 1961, a rising number of people started to suffer from various forms of mental or physical conditions. To address these symptoms, the East German psychiatrist Dietfried Müller-Hegemann coined the term *Berliner Mauerkrankheit* (Berlin Wall Disease; some other sources speak of *wall sickness* or *wall disorder)*. As the symptoms that he described ranged from depression, alcoholism, and delusion, to psychosis and even suicidal tendencies and therefore could not clearly be associated with a particular disease or mental disorder, he decided to subsume them as a new syndrome. It even manifested itself in cases like a locked jaw (Di Cintio, 2012; Leuenberger, 2014). What its various manifestations had in common was that they all revolved around claustrophobic states of anxiety and the feeling of being walled-in (Lehmann, 1986; Leuenberger, 2014). To say that East Berliners suffered from *living in the Wall's shadow* is not just a metaphorical expression—it actually coincides with Müller-Hegemann's findings, since he had observed that the closer people lived to the Wall, the more severe were the symptoms they suffered from, eventually leading him to believe that this syndrome would not disappear unless the Wall disappeared, too (Di Cintio, 2012; Leuenberger, 2014).

While the focus of the Wall's impact on people's lives often lies on East Germans, it is noteworthy that not only they were walled-in and so had a higher propensity to suffer from *Wall disease*. The living situation for West Berliners was comparable with regards to an unimpeded freedom of movement. As they lived in what could seem as a giant urban prison, uncoupled from the thriving economic development in West Germany, they too had the impression of living on the *wrong side* of the Wall (Lehmann, 1986; Moran, 2004). As a consequence, West Berlin was reportedly the city with the highest suicide rate worldwide, averaging 40 suicides per 100.000 inhabitants per year, twice as high as in the rest of the country ("Tödlicher Rekord," 1972), although such numbers may have even been higher in East Berlin (Zentrum für Zeithistorische Forschung Potsdam e.V. et al., 2019). These and the disease's long-term effects suggest that the Wall could be experienced on a psychosomatic level.

It must be noted that to speak of East Germans "being walled-in" does not fully reflect their living situation. Looking at the Berlin Wall topographically, one would more easily consider West Berliners locked *inside* while East Berliners would appear to have more freedom to move away from the Wall. As the high numbers of people moving from East to West suggest, however, this was not the case. The Wall demands attention—an observation that fits with the discussion in the previous chapter. This attention manifested in attempts to cross the Wall towards the West. Thus, a clear distinction between the Wall's *inside* and

outside cannot be drawn, emphasizing once more its ambivalent and changing character. Still, the vast majority of literature on the Berlin Wall frames it as East Germans being locked *inside* by speaking of *walled-in East Germans* and their escapes into the *free West*. One should bear in mind that these are narrative constructions from which this thesis, too, cannot be fully independent.

3.3.2 Violence through broken connections

Being neither allowed to leave the country nor to call the border barrier *the Wall* (see chapter 2), it is not difficult to imagine how the "feeling of 'being locked up' in addition to the wall-induced separation and isolation from friends and family [across the border]" (Leuenberger, 2014, p. 24) could lead to a sense of helplessness and despair. The additional drabness of everyday life behind the Wall as described by numerous authors (Dollard, 2016; Funder, 2003; Lehmann, 1986; Moran, 2004; Schneider, 2010) or convincingly depicted in the movies *Goodbye Lenin* or *Das Leben der Anderen* further contributed to many people's impression of being caught in a dead-end situation. A suicide researcher is quoted in a 1972 *Spiegel* article saying that "[West] Berlin with its Wall is a perfect example of a constrained life, Berlin is the personified pre-suicidal syndrome" ("Tödlicher Rekord," 1972, p. 50, my translation). From the perspective of infrastructures, how can we understand the connection between the Wall and people falling sick, indeed even committing suicide in large numbers?

The process of mutual orientation that helped reveal the formation of the Wall's poetics across different scales of time and social organization in the previous chapter can also help here to better understand the infrastructural violence of the Wall. It will become apparent, however, that that which makes the Wall perceptible as violent is this process's breakdown.

The sudden emergence of the first barbed wire fences and bricked-up windows in August 1961 can be understood as the GDR regime's response to the acute crisis it was facing. The continuously high numbers of escapes from the East seriously threatened the GDR's economic and political stability. One consequence of this state level emergency was the emergence of the Wall. The sudden hardening of the East-Western border was experienced as a veritable *Mauerschock* (Wall shock) by many (Henke, 2011; Lehmann, 1986). As a result of the state's emergency response, a new emergency emerged that manifested itself psychosomatically in its citizens. In other words, due to the purported large scale solution, people were facing a new crisis on a micro scale of social organization.

With the increasing fortification and professionalization of the Wall, the initial shock gave way to a large variety of medical symptoms that soon were addressed as *Wall disorder*. The macro scale decisions by the GDR regime to build and retrofit the Wall and military planners' and engineers' efforts to organize this sociotechnical enterprise on what, according to Edwards, would be considered the meso-scale, were constantly informed by micro-scale decisions (Edwards, 2003). These comprised, for example, individuals

determined to escape, who in turn adapted their escape strategies in relation to the changing appearance and workings of the Wall infrastructure. Thus, negotiations across micro-, meso-, and macro-scales constantly took place, involving individual, institutional, symbolic, and material actors.

With respect to the corporeal, emotional, or mental symptoms experienced by far more people than just those who were determined (or desperate) enough to launch an escape attempt—not to forget West Berliners suffering from comparable symptoms—a relation between the decisions of the GDR regime and its institutions on the one hand, and individual hardship on the other becomes visible. However, this suffering did not reciprocally inform the macro- and meso-scale processes related to the Wall's existence, appearance, or operations. The everyday behind the Wall in East Germany was influenced by the state's fundamental mistrust in it own citizens—particularly those living close to the Wall and on whom the regime paradoxically relied the most to denounce any activities or people that could be regarded as subversive and hostile to the republic. Any recognition by the regime that the Wall might actually be an important factor negatively affecting people's health was out of the question. If one is not even allowed to call the Wall *a wall*, how could there be a *Wall disorder*? In fact, Müller-Hegemann feared arrest and prosecution because of his interest in the Wall's psychosomatic effects and thus could not systematically study these phenomena (Di Cintio, 2012; Leuenberger, 2014). This is also why he did not publish his analysis of the syndrome until he managed to stay in the West following a trip to West Germany in 1972 (Leuenberger, 2014). These issues indicate a tabooing of the Wall's psychosomatic effects—a suspicion that is supported by the concealment of official suicide statistics in the GDR from 1963 on and the regime's efforts to relabel suicides as accidents (Grashoff, 2006). As far as is known to me, no design decisions were made with respect to the Wall to improve its "tolerability" by East Germans and prevent further cases of *Wall disorder*. Although the installation of the *border wall 75* concrete segments from 1977 on had the objective to make the Wall not only more durable but also give it a "more friendly" image (Sälter, 2011a), no evidence could be found that would suggest that the decision for this modernization was influenced in some way by the appearance of the *Wall disorder*.

It therefore seems justified to conclude that in the case of the various sufferings and suicides of both GDR and West Berlin citizens, a breakdown of the process of mutual orientation has occurred. Thus, one of the instances contributing to the Wall's infrastructural violence is the lack of influence from the level of individuals suffering from the Wall disease towards larger infrastructural scales. Before East Germans could finally touch the Wall in 1989, it was touching them. The Wall disease is in some way part of the Wall's infrastructure —it emerges and evolves over time and in relation to space—and like the Wall it is both visible and subject to regimes of invisibility. The GDR regime's refusal to recognize citizens' sufferings as related to the Wall is the outcome of technopolitical negotiations in which at

least one party is not allowed to give sufficient voice to their concerns.[16] In this sense, the multi scalar orientations—that Edwards appears to see as typically accompanying the continuous (re)making of infrastructures—have turned into a unidirectional process—a violent oneway infrastructure.

3.3.3 Disentanglement and urbicide

Related to the breakdown of mutual multiscalar orientation is what Hannah Appel has called "infrastructural disentanglement" (Appel, 2012, p. 442). In her view, infrastructural violence emerges when certain actors, whose practices and the materials they use are sociomaterially entangled, try to disentangle themselves from the responsibility they have towards the sociomaterial context they operate in. They do this by producing new infrastructures or disconnecting from existing ones. Assuming that a state is to some extent responsible for the wellbeing of its citizens, one might say that in the case of the Berlin Wall, the GDR regime abdicated this responsibility. Instead of convincing people to stay in the GDR by other means and thereby protecting and serving the people who populate the state, large efforts were put into constructing, operating and maintaining an extensive border infrastructure.

The hybrid, sociomaterial processes that give rise to infrastructures, their poetics and materiality, can paradoxically produce new dichotomies—if looked at from a rather small temporal scale. The Wall disease represents a rupture between people's mental or corporeal matters of concern and the possibility to influence or participate in infrastructural change. Yet, adopting a longer-term perspective, we might see that the multiscalar orientations may not have been broken after all. On November 9th, 1989, the accrued pressure erupted at the Wall with an incredulous but enthused crowd. Although the border's unexpected opening neither cured all pains nor could it bring back any of those who had died, it can be seen as a manifestation of re-orienting macro scales on the state level from below, seeking to end the infrastructural violence emanating from the Wall. From a more common, anthropocentric perspective, one would regard the events that happened during this night and the following days, as another form of infrastructural violence—one that is directed *against* infrastructures.

Such forms of infrastructural violence, meaning the *unbuilding* of infrastructure (Graham, 2004) was also an essential part of building the Wall. Graham notes that "much *planned* urban change even in times of *peace itself* involves war-like levels of violence, destabilisation, rupture, forced expulsion, and place annihilation (Graham, 2004, p. 9, original emphasis). The *Versöhnungskirche* (Church of Reconciliation) at Bernauer Straße for example could not be used at all because it had been walled-in and now stood in the newly established death strip—impossible to reach for anyone. After it had been left deserted for years, the GDR regime ordered its final demolition in 1985. For those who had

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[16] A similar argument with respect to "regimes of perceptibility" has been made by Gabrielle Hecht about the initially denied nuclearity of African mines (Hecht, 2009).

ties to this church, who had worshipped here, to whom this place was one part of their lives, the razing meant not only the definitive loss of this building, it also meant losing part of what made their identity. When the places one visits and has connections to, like this church or one's favorite spot in a park, are understood as important elements of one's sense of identity, we can better understand why the loss of such places and the parallel spatial reconfigurations can lead to struggles over one's place in such violently changed environment. In other words, spatial struggles or even annihilation of places as the Wall cut through a city, thereby re-ordering and controlling the urban space in important ways, makes development of health issues like the Wall disease more plausible. This case shows exemplarily how the Wall re-ordered urban space, how the emergence of a particular infrastructure was paralleled by the wounding of other infrastructures of the city and that these wounds translated into bodily pain. The technopolitics of walling appear here as *somato-politics*.[17]

With respect to national identity, the poet Hans Magnus Enzensberger pointed out that the Wall divided, but also united East and West Germans in the sense that they were both separated from each other. Accordingly, he famously noted that the Germans' identity was their disunity (Enzensberger, 1963). Being a divided people distinguished Germans from the rest of the world and thereby united them.[18]

When widening the spatial scale, one finds a process aptly described as "urbicide" (Graham, 2004, p. 9). The murdering of the city of Berlin (if one is warranted to use this vocabulary after it had already seen massive destructions during the Second World War) can be illustrated by the various infrastructural disconnections that went along with the hardening of the East-Western border. The Berlin subway system, for example was separated into two networks that did not share stations except at Friedrichstraße. Some of West Berlin's subway lines would have to cross under East Berlin, rushing through abandoned ghost stations. For East Berliners, these trains could never be seen, but they could be heard and felt as they rattled under their feet. The urbicide went so far that in the late 1980s, even the topographical depiction of Berlin changed when West Berlin vanished from East Berlin's public transportation maps. Instead, the maps simply showed a thin gray strip as if there was just a small section of uninhabitable wasteland located between

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[17] The term *somato-politics* appears to be used in the field of LGBT studies such as *queer geography;* see e.g. (Lau et al., 2014). I have nowhere found it in relation to infrastructures or the Berlin Wall.

[18] On the event of having been awarded the Georg-Büchner-Preis in 1963, Enzensberger said in his acceptance speech: "Die Mauer trennt nicht allein Deutsche von Deutschen, sie scheidet uns alle von allen anderen Leuten. Sie zerniert unser Denken und unsere Vorstellungskraft. Sie verbarrikadiert nicht nur eine Stadt, sondern unsere Zukunft. Sie bildet nichts ab als uns selbst: das, was wir noch gemeinsam haben. Das einzige, was wir miteinander teilen, ist die Teilung. Die Zerrissenheit ist unsere Identität." (The Wall does not only divide Germans from Germans, it divides us from all other people. It invests our thinking and imagination. It barricades not only a city but our future. It represents nothing else but ourselves: that which we still have in common. The only thing that we share with each other is the division. The disunity is our identity) (Enzensberger, 1963, my translation).

Fig. 3.1 East Berlin's public transport map, spring 1989 (http://s-bahn-galerie.de/S_Bahn_Berlin/xPlan_Bln/Plan_S_B.htm, accessed 19.05.2019)

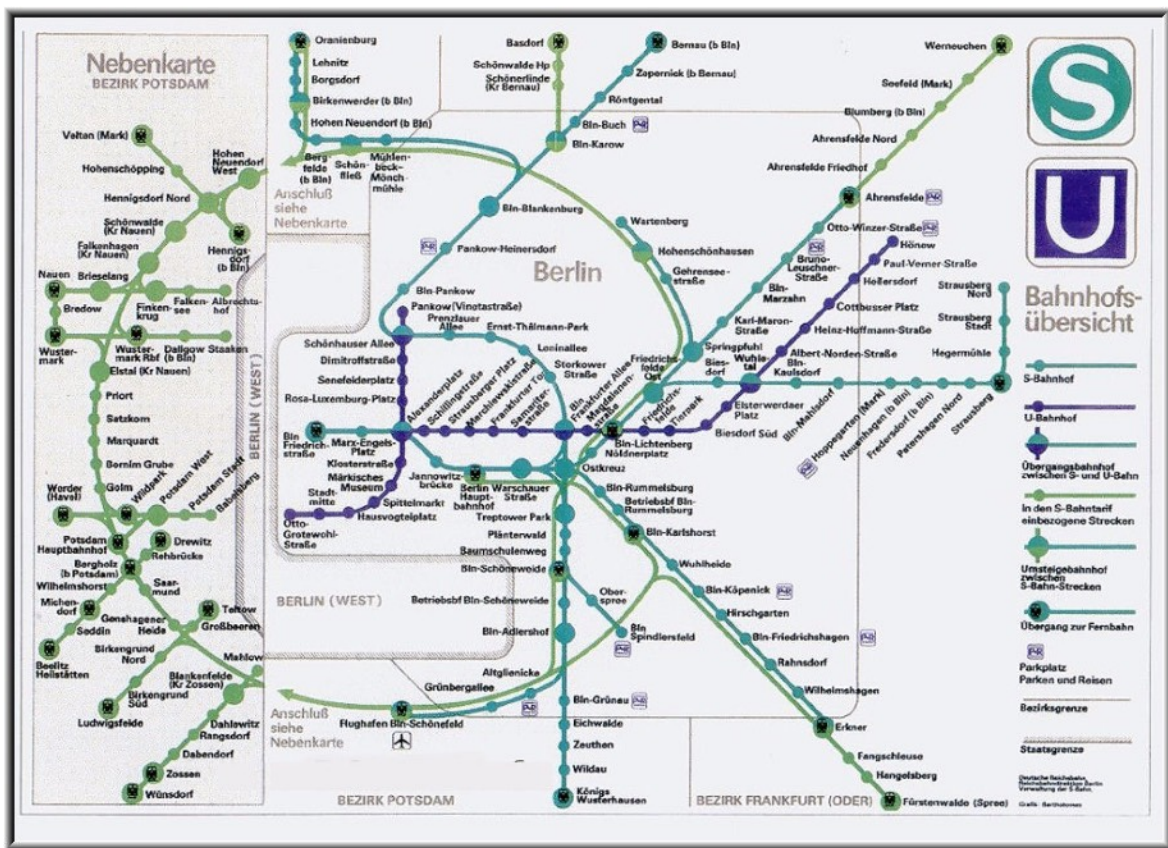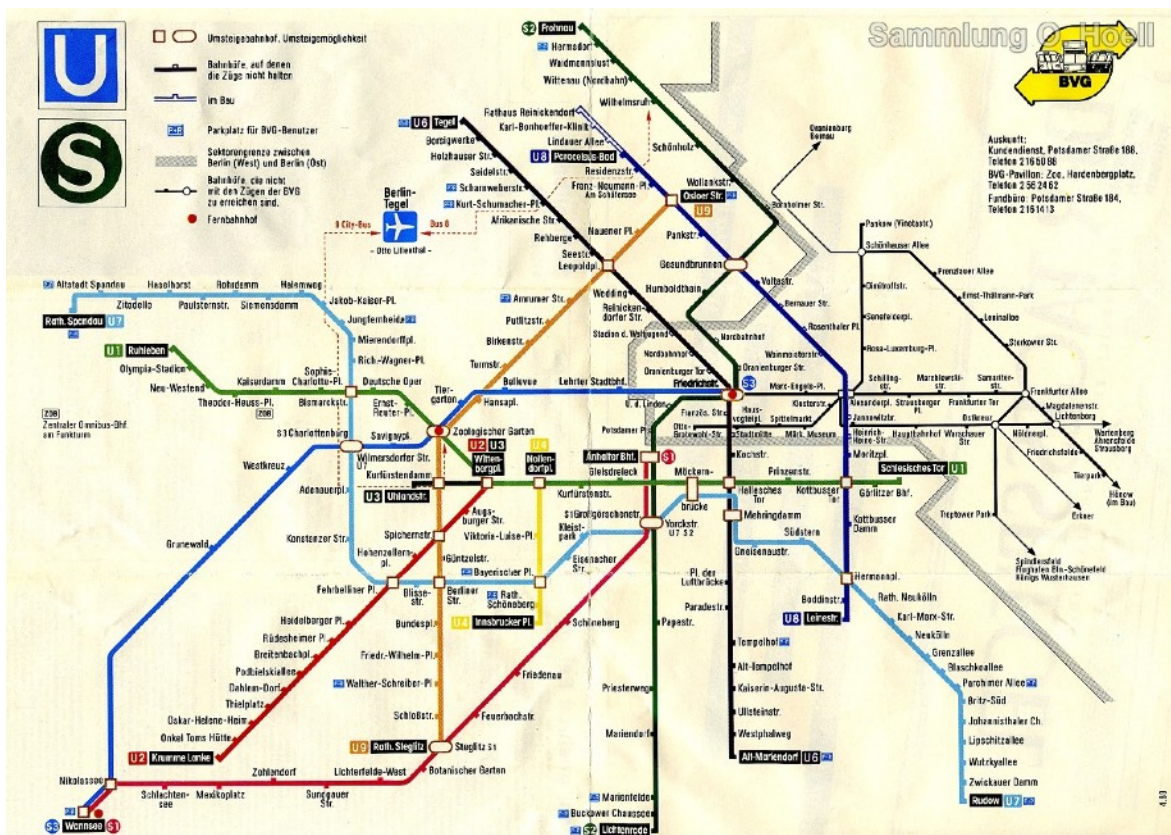**Fig. 3.2** West Berlin's public transport map, spring 1989. (http://s-bahn-galerie.de/S_Bahn_Berlin/xPlan_Bln/Plan_S_B.htm, accessed 19.05.2019)

Potsdam and East Berlin (Figure 3.1). But also Western maps did not have much to say about stations and lines in the East as figure 3.2 illustrates.

3.3.4 Infrastructures, bodies and psychosomato-politics

The restrictions of everyday life, from banning the use of the word "Wall", to a continuous atmosphere of mistrust (between state and citizens as well as amongst citizens), to the impossibility to rejoin family or friends across the border or once ride the train that one could hear everyday but never see, to the perceived eternal persistence of the Wall and the seeming irreversibility of this situation; they all negatively affected people's health. In other words, the Wall re-materialized in local inhabitants' bodies. How can we understand such a process? One possibility is to question traditional views of the human body that uphold a clear distinction between the body, the mind, and the "outside" world. Instead, a view of the body as part of a greater ecology, as entangled in a process of mutual becoming of one's body and its environment could offer a fresh perspective on how bodily reactions emerge from our interaction with the world.

Authors like Maurice Merleau-Ponty, Andrew Pickering, or Tim Ingold suggest that the human lifeworld—either built or natural environment—not only always has a significant influence on humans but is constantly engaged with us in an ongoing "dance of agency" (Pickering, 2008). In this sense, the human body is not exclusively seen as being in the world but actually as a *part* of the world. One might call this the "ecological body" (Johnson, 2008). From such a perspective, no clear boundary between the human body and the world can be drawn—since we are fully immersed into our environment.

Tim Ingold has proposed to view the body and its environment as one totality, emphasizing that this compound is "not a bounded entity but a process […] of growth and development" (Ingold, 2002, p. 20). Instead of looking at the world as a network of connected entities that influence or co-shape each other, he proposes a hybrid perspective in which one would find co-evolving organisms that are "an unbounded entanglement of lines in fluid space" (Ingold, 2011, p. 64). In other words, organisms are lines of material flow that extend and progress through the environment, weaving an extensive meshwork—that essentially represents life itself. His emphasis on material substances flowing along these lines makes in my interpretation clear that he is speaking of a constantly evolving body, influenced by the line's bending through time and space—now curving in this direction, soon into another while constantly crossing and negotiating directions with other bodies' lines. Accordingly, "within a meshwork of relations, the organism is not limited by the skin" (Ingold, 2011, p. 86). In other words, human life-paths are inseparably intertwined with the material world—the process of becoming takes place in a milieu.

If this milieu is severely changed, if the material for weaving the fabric that is life frays out (to remain within Ingold's metaphor), then unsolvable knots may appear and some lines may even end. Wanting to understand how the emergence of a Wall and the urbicide coming

with it can seriously affect one's health, how it is possible to experience bodily changes induced by a material world, requires thinking beyond human bodies as bounded entities. The loss of places, the impossibility to follow the paths across the city as one used to, the subtraction of architecture that partly makes up the city is in this view synonymous with losing parts of one's body. Conversely, the addition of new structures, the re-configuring of urban spaces simultaneously leads to the emergence of new parts of one's body. It is in this sense that one can say that the Wall existed *within* one's body—manifested for example in the form of a locked jaw. The Wall became bodily experienceable not only by people being kept from crossing the border but also as a syndrome that emerged from the various forms of infrastructural violence.

This view resonates with Bruno Latour's conclusion that "even the shape of humans, our very body, is composed in large part of sociotechnical negotiations and artifacts" (Latour, 1994, p. 64). Infrastructures are not only significant parts of societies, economies or the environment, they are also part of us. Additions and subtractions of infrastructures and the accompanying connection and disconnection from them are paralleled by bodily changes. Technopolitics are also a matter of health—they are somato-politics.

3.4 Conclusion

The Berlin Wall was an important stage for the manifold forms of violence experienced in the GDR. One way of addressing its psychosomatic effects is the term wall disorder. I have tried to show here that this particular syndrome can be associated with infrastructural violence. This approach helps to decenter common notions of violence, helping to reveal it as a sociomaterial product that originates from the various entanglements or disentanglements with and from infrastructures.

The radical changes of Berlin's urban environment that came with the erection of the Wall—which I call with Graham *urbicide*—reveal the destructive side of technopolitics. It expressed itself as a violent disentanglement of Berliners from many of the city's infrastructures and was paralleled by a second disentanglement on another level. Here, the regime did not account for how the Wall's infrastructural violence affected its citizens, which in itself can be seen as an additional act of violence. From another angle, I have suggested to conceive infrastructural violence as the breaking of mutual orientations. The constant making of the Wall as infrastructure was not informed by the micro scale events of depressions, claustrophobic anxiety, or suicides, making it impossible for those suffering from the Wall to provoke infrastructural changes.

Adding to the notion of infrastructural violence, I have proposed an understanding of the human body as ecological or enmeshed in the world. The body undergoes constant change in relation with its sociomaterial environment and thus offers an explanation of how re-orderings of this environment or disconnection from infrastructures can be experienced as

bodily disorders. By following human bodies, we come to see that infrastructures are not just part of society or the environment, but are part of our body, suggesting that technopolitics can unfold as somato-politics. In the next, final part, we will follow the Wall's material across time and space to see if similar dynamics can be revealed.

4. Repairing, Appropriating, Remembering: The Wall's cultural politics

"It was a political act to paint the wall – even if you made pee-pee on the wall it was political"

Thierry Noir[19]

4.1 Introduction

This chapter deals with the processes and struggles around deconstructing, protecting and repairing the Wall. After its fall, the Wall quickly spread over the entire world in the form of small concrete chunks or larger, even more iconic wall slabs. The remnants in Berlin became contested sites of resistance against removal, artistic interventions and debates of adequate preservation for memorial purposes. By following the Wall's material through its reconfigurations as a memorial infrastructure, we come to see technopolitics as the enactment of material culture. The understanding of repair not only as restoration but also as an innovative practice that is able to open up new and unforeseeable possibilities for repaired infrastructures helps to conceptualize repair as a temporal practice of bridging past, present and future. The public disputes surrounding the preservation of the East Side Gallery in Berlin suggest that infrastructural maintenance and repair can even been seen as political acts—that in this case paralleled a repair of democracy.

4.2 Destruction and Repair: The micro-politics of material engagement

4.2.1 The creative destruction of wall pecking

The question of what was going to happen to the Wall after it had started to fall on November 9, 1989, moved many people. The well-known singer-songwriter Wolf Biermann, who had been expelled from the GDR in 1976 for his critical lyrics, expressed his wish in an essay just days after, hoping the Wall would be completely dismantled quickly—either transformed into souvenir rocks or construction material (Biermann, 1989). In fact, an increasing number of *Mauerspechte* (wall peckers) from both East and West Germany treated the Wall relentlessly, chipping away at it with hammers and chisels (Figure 4.1), up to a point where commentators remarked that those attacking it from the West were obviously

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[19] Thierry Noir in an interview in 2013 on his time in Berlin during the fall of the Wall. (https://streetartlondon.co.uk/blog/2013/02/interview-thierry-noir/, last accessed 20.05.2019).

Fig. 4.1 *Mauerspechte* (wall peckers) at the Berlin Wall,1989. (https://www.berliner-mauer-gedenkstaette.de/de/abriss-der-mauer-51,24,3.html, accessed 21.06.2019)

treating it "as if the Wall belongs to the West" (Turner, 1990, p. 3). Simultaneously, Eastern National Army engineers removed with the aid of private demolition companies large sections of the Wall in a more coordinated manner (Klausmeier & Schmidt, 2011; Sälter, 2007).

Opting against the Wall's complete removal, Willy Brandt proposed in a speech on November 10 to preserve a section to "help remember this historic monstrosity" (Brandt, 1989). Whereas Biermann's suggestions and the wall peckers' high activities showed signs of an almost reflexive impulse to get rid of the detested Wall, Brandt's suggestion was based on the question of how one should—in a very literal sense of the word—be able to grasp (begreifen) this historic period if all material evidence were gone. While wall-pecking affected the Wall's structural integrity, creating for example many holes to peek to the other side or—if large enough—even squeeze through the Wall, as graffiti artists would often do (Figure 4.2), it did not cause the Wall to vanish. Rather, wall-pecking opened up new possibilities for the Wall to reconfigure and continue its travel across time and space. Let us trace some of the concrete chunks and segments resulting from this reconfiguration to comprehend how different poetics and materiality emerge from the interaction with the social.

This interaction begins with the wall-pecking. The chiseling away of the concrete is not just an attempt to remove a physical barrier, it is an enactment of technopolitics. Amongst the poetics embodied in the Wall are in this case the frustrations and restrictions of almost three decades of being walled-in. The Wall's concrete symbolizes a merciless regime and the desperation, even pain, felt by many. In this sense, infrastructures both embody poetics and are open for new symbolic ascriptions by their readers. A symbol of terror and

Fig. 4.2 Thierry Noir painting the Berlin Wall in East Berlin next to the hole through which he entered from the West, Jan. 13, 1990. (https://timeline.com/thierry-noir-was-the-first-artist-to-paint-on-the-berlin-wall-9584c38b45b5, accessed 28.05.2019)

oppression for some, the concrete chunks signify the overcoming of this terror and therefore are a symbol of this newly gained freedom. This *poetic ambiguity* points towards the open-ended becoming in which infrastructures, their users and makers are entangled with each other.[20] Symbolic meanings emerge from sociomaterial interplay and thus are contextually dependent.

Being able to attack this hard concrete with one's own hands is for many the first possibility to test and question the Wall's poetics and materiality. As the Wall shrank with every blow of a hammer, collective pressure was released, the barrier's fragility revealed, and relief and joy expressed. Others proceeded more carefully, trying to chisel off "beautiful" pieces to sell them as souvenirs, hoping to make some money with the concrete chunks (Klausmeier & Schmidt, 2011). Whatever the motives for wall-pecking, they ultimately resulted in an act of *creative destruction*. These words were originally coined by economist Joseph Schumpeter as an elaboration of Marx' processes of accumulation and annihilation of capital. In Schumpeter's eyes, technological innovation entails disruptive processes by making previous technologies obsolete. Drawing on this notion, Keller Easterling has in the context of architecture and removal of buildings similarly argued that the process of "unbuilding is also both a subtraction and an addition" (Easterling, 2014, p. 74).

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[20] Although I reject the idea of such clear-cut distinction, I am making it here to point out the two extreme ends of the "designer-user continuum" on which we move in our interaction with technology. For an introduction into the discussion around use and domestication of technology see e.g. (Bar et al., 2016).

By destroying the current structure of the Wall, people did not simply make it vanish —even if some hoped to. Instead, this sociomaterial interaction cleared the ground for the Wall to transform poetically, materially, politically. Simultaneously, this engagement helped reveal the Wall's fragility and made it perceptible on various levels and by different senses. For weeks and months for example, the sounds of chisels on concrete constituted the characteristic background sound of post-fall Berlin. In addition, the Wall could now be touched for the first time be East Berliners.[21] Once the Wall's deconstruction began, the newly created chunks could be commodified as souvenirs, be owned as personal trophies of having overcome the Wall, or reused in new road beds. It crumbled quickly, uncovering a material delicacy previously undreamed of by most people. Simultaneously, it was reconfigured as fragments laden with new poetics of freedom, linking its past material existence as a hard, unsurpassable wall with its vulnerability and the peoples' power to make it fall.

Edwards' multiscalar approach helps explain this apparent paradox. On temporal micro scales before 1989, the Wall appears as unchanging and solid, whereas large temporal scales reveal its susceptibility to decay and hence its fragility (that is also revealed if only focussing on the moment of its destruction). This paradox thus stands as an indication of the becoming of material properties. Just as impenetrability is not an essential property of a wall, nor is fragility. Rather, these qualities emerge from the interactions between the social and the material and so are always subject to change over time. The chunks are the result of material properties, individual sociomaterial interaction but also broader changes in society. Yet, neither one is the product of the other, instead they mutually evolve. The fundamental relationality of the social and the material, their contingency and transformability become evident in these various, oftentimes simultaneous evolutions of identities.

4.2.2 Repairing concrete chunks: Far more than restoration

The creation and selling of Berlin Wall chunks was not a phenomenon limited to the months following the fall of the Wall. Until today, Wall chunks are for sale at Berlin's flea markets, tourist hotspots, and internet market places. Although only the parts of the Wall facing West often were covered with graffiti, every little piece being sold has a colorful, painted surface. This begs the question if that many painted wall segments could have been preserved at all or at least in such good condition.

They have not. Ninety percent of these concrete pieces are believed to originate from Günter Pawlowski's company (Gehmlich, 2009; Knight, 2009). Originally a construction worker in West Berlin, he decided early on to buy dozens of large concrete slabs of the Wall in the hope to sell them later for a better price—either as small chunks or complete

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[21] Original film material from November and December 1989 intriguingly documents this engagement,. See for example: https://youtu.be/-OM9ByyYqOQ?t=99; https://youtu.be/IMLd-NuvYW0?t=105 (both accessed 28.05.2019).

segments. In interviews he openly admits that the pieces he sells are all repainted as nobody would buy pieces with spalling or worse, no paint at all (Gehmlich, 2009; Knight, 2009; Müller, M., 2010). Since the original graffiti paint is not as durable and has started fading over the years and since many sections of the Wall had never been colorfully painted in the first place, applying fresh paint is crucial for his business. Giving them an even more striking appearance, they are often cast in artificial resin. Paradoxically, it is the inauthentic paint added decades later in Pawlowski's workshop that emphasizes the fragments' past life as parts of the Berlin Wall. It is thus a response to a poetic breakdown—the chunks become visible as symbols of freedom if their materials can refer to the Berlin Wall.

The repainting is neither an act of restoring the Wall's original meanings nor is Pawlowski reinscribing an original script of the Wall. Instead, I would argue, he is repairing the Wall. Taken literally, *re-pairing* means to put two previously paired parts back together. When considering a couple that, after a breakup, comes back together, we can recognize that their repairing gives rise to new and unforeseeable possibilities in the future. They might marry and have children or split up once more. The repairing of the concrete chunks as elements of a complex chain of events and decisions puts together concrete and paint— allowing the poetics of the Wall to gain new life. While not the same paint that originally had been on the chunks is used (if they had been painted at all), its addition revitalizes poetic expressions previously embodied in painted pieces. It also allows new poetics to emerge, as we shall see. It is not simply restoring a previous material compound but also opening up possibilities for new uses and meanings, and thus a form of innovation.

In order to better understand how repairing is also innovating, let us take a closer look at the repainting of the Wall chunks. Pawlowski's acts of repainting are temporal micro scale events. They are one element in an ongoing dance of agency constantly moving through time—with repair and maintenance, material decay and infrastructural breakdown as its stages. While infrastructural decay is a temporal large scale process and breakdown may be its micro-scale consequence, repairing stretches across these scales. Painting one chunk is a micro scale activity. By contrast, the need to preserve and maintain the Wall's remains is an ongoing and never-ending process, as debates around the monument conservation strategies for the East Side Gallery in Berlin show (Schneider, 2014). If not repaired, distinctive meanings may no longer be carried by the infrastructure and replaced by others. Once again we see how deeply materiality and poetics are intertwined. In this sense, the need for infrastructural maintenance is not just one form of technopolitics. Infrastructures and their constant (re)making are technopolitics.

What's more is that repair is a transformative process that establishes connections between the fragments' origin and new uses. To be considered authentic, the concrete chunks must come from original Wall segments and so are messengers from the past. Likewise, the demand by tourists to have graffiti on each souvenir can be explained by the extensive media coverage of the Wall's fall, sending images of the Brandenburg gate and

Fig. 4.3 "A piece of German history" - Souvenir Berlin Wall chunks (picture by the author, 2019).

the Wall's Western, painted side throughout the world. These images support the belief that the Berlin Wall in fact was covered everywhere with colorful graffiti. In order to perform their new poetic function of symbolizing freedom from an oppressive regime, the chunks must materially relate to their past as part of the Berlin Wall. To accomplish this, a new layer of paint is applied, constituting a sociomaterial interaction of the present and opening new paths into the future. The fragments become recognizable to others as parts of the Berlin Wall—they are capable of representing certain symbolic meanings culturally recognized but cannot convey all meanings and certainly not the feeling one had when actually walled-in for years. Nonetheless, they can be commodified and owned to "treasure your fragment of freedom" as one souvenir company promises.[22] Others market the chunks as "a piece of German history" (Figure 4.3). By traveling to new locations, the chunks' symbolic meanings can now also mix with new contexts, staging the Wall in different and possibly unexpected new ways as we will see in the next section. Repair "occupies and constitutes an aftermath" and "accounts for the durability of the old, but also the appearance of the new" as Steven Jackson remarks in Rethinking Repair (Jackson, 2014, p. 223).

We have seen already in chapter 2 more generally how poetics of infrastructures can be understood as material texts. Here too, the chunks' symbolics unfold through the coming-together of different materials, their forms, sociomaterial engagements, and— importantly— readers. In this sense, there never is a white wall (in the sense of a blank slate), instead "walls are *always-already* written over" as has been noted with respect to the multiple functions of walls in urban environments (Brighenti & Kärrholm, 2018, p. 9, original emphasis). From a poetic perspective, repair thus is an activity of reading and writing with and through materials. From a historical perspective, repair is the act of bridging past, present and future.

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[22] One example is the company Hyman Products Inc. that continues to sell until today Berlin Wall pieces, advertised as "an historic artifact" on internet market places. The feature a certificate of authenticity issued by the company themselves, see e.g. https://www.amazon.com/Berlin-Wall-Historic-Artifact/dp/B000JLM80A or https://www.ebay.com/p/Berlin-Wall-Authentic-Cuts-1989-Hyman-Products-With-COA/1500929504 (both accessed 20.05.2019).

4.3 Proliferation and re-use: Politics of memory

The repaired chunks travel not only through time but also to different locales. In one case, a couple of Berlin Wall concrete pieces were part of the exhibition "The Price of Freedom: Americans at War" in the National Museum of American History in Washington D.C. held in 2004. They were displayed in an arrangement focussing on the Vietnam War, next to personal items left at the Vietnam Memorial like teddy bears or a bottle of whiskey (Boehm, 2006; Smithsonian et al., 2004). Presenting the chunks in this context suggests that the tragic losses suffered by Americans during the Vietnam War were part of "a wider war that was ultimately won in 1989", making them appear more meaningful (Boehm, 2006, p. 1161). Within such framing, these deaths could even appear as necessary losses for the defeat of communism by capitalism and Western democracy.

In other cases, complete concrete slabs of the iconic 'border wall 75' are found in various contexts and locations throughout the United States. In New York City for example, a couple of segments are situated in Manhattan's Battery Park. They were placed in close proximity to the 9/11 memorials after having been presented by the city of Berlin as a sign of identification with the trauma following the terrorist attacks (Farber, 2013). Irony has it that these segments had been famously painted by Thierry Noir years earlier to protest against Berlin's decision to remove the remaining Wall sections. Another park at 52nd Street and Madison Avenue, used by office workers to take lunch or have coffee breaks, features several slabs that have been arranged by the park's private owner so as to "demarcate the space as a spectacle, but also as one where access to history should be just an arm's length away." (Farber, 2013, p. 291).

4.3.1. Appropriating the Wall infrastructure

All three cases suggest that the Berlin Wall as embodied in its pieces, that is in a new form or shape, can poetically function as symbols of freedom, liberation from oppression, or the triumph of Western democracy which had been fought for in previous wars. They can express solidarity with other collective traumas as the proximity between the Wall sections and the 9/11 memorial implies. But they also can give rise to debates over "in-your-face history" (Farber, 2013, p. 292) if such lessons given by Wall segments during one's lunch break are neither desired nor the underlying motives for their placing considered transparent enough.

To perform these various functions, the concrete pieces had to be re-placed from their original sites, although surprising changes in the Wall's poetic mode are also possible when it could remain in-situ as my description of the struggles around the East Side Gallery will later show. In the above cases, they had been "displaced from Germany, and re-placed as monumental [U.S.] national artifacts" (Farber, 2013, p. 27). After having been repaired and made recognizable as part of the Wall, they have entered new locations, thereby

reconfiguring themselves and the spaces around them. Through the materiality of the original concrete, indicating the former perceived impenetrability and the Wall's new form as disassembled into smaller pieces that hint towards the overcoming of this border barrier, symbolic meanings from different points in time are brought together. I propose to view these Wall pieces as elements of a memorial infrastructure that spans globally and connects different local cultural meanings and experiences. This view helps to understand how appropriation, infrastructural poetics and technopolitics are interlinked.

The re-use of the Wall pieces in the US reminds of Larkin descriptions of attempts in parts of the world to partake in what is considered modernity, exemplified by the construction of highways in Pakistan with only little car traffic or the construction of new roads and bridges in Indonesia. In both cases, "modern" infrastructures had been copied from Western models with the hope to also import the associated style of life (Larkin, 2013). Similarly, re-placing Berlin Wall pieces in other parts of the world appears as an attempt to underline or claim one's own participation in the historic events connected with the Wall. It could also be an effort to import some of the glorious, moving moments of its overcoming. Yet it is more than simply copying. We also see an appropriation of the Wall, see it being used in new ways and perform in new contexts. These memorial infrastructural elements are part of a meaning-giving process together with their users and the pieces' situatedness in a new environment. These new places, shape and are being shaped by the people visiting them and the materials or infrastructures that permeate them.

These processes are typically called appropriation or domestication. They put into question the traditional sharp distinction between design and use of technical artifacts by linking insights about consumption and use with the theory of innovation and describe the process of discovery and realization of new meanings and relevance in addition to intended functions (Bar et al., 2016; Peine & Herrmann, 2012). I suggest to understand the appropriation of the Berlin Wall in New York City as both drawing on what is considered "historical" and discovering future meanings. One of the effects is what Farber calls *placemaking*. Here, one of the Wall pieces partakes in meaning-making. It can be understood as a mixing of historical and local meanings to create a new identity for urban spaces. In this process, different forces—from governments or large corporations donating Wall segments to local communities and the Wall pieces themselves—interact in a struggle to control public spaces.

In addition to the importance of the segments' materiality addressed already above, the site of their re-placement matters as well. In both cases in New York City, the Wall slabs are placed in urban spaces that include the social, material, and built environment—if one still would like to make such distinction—but also the unbuilt (destructed) one as the example of Battery Park close to Ground Zero strikingly shows. The Wall as memorial infrastructure affects time and space, it provides means for remembering the past, projecting hopes and warnings for the future, and transforms with the places it permeates. Thus,

appropriating the Wall in Manhattan is a manifestation of the mutual orientations that are at work between individual people's experiences and memories of the Wall and its sites on the one hand, and their wider cultural or historic significations on the other. In these multiscalar exchanges, the Berlin Wall re-configures as different walls while still referring back to its past. To appropriate an infrastructure means giving rise to a new one.

4.3.2 Technopolitics of memory

From a temporal perspective, the presentation of the Wall segments in the context of other conflicts than the Cold War is noteworthy in several ways. For one, the Vietnam War was fought when the Berlin Wall divided Germany and the entire world into East and West while the attacks of 9/11 took place more than a decade after the Wall came down. Yet, concrete slabs—that in one case had not even been produced or put in place when the war was already (officially) over and in the other case were long out of use as a border fortification— are contextualized within greater historic pictures. Wall pieces not only travel across space from Berlin to exhibitions or urban spaces in New York City and elsewhere but also across time by relating to either pre- or post-Wall events. When repairing is an activity that connects different temporalities, then the Wall pieces are the material manifestations of such bridging process.[23]

Ultimately, it is not only the infrastructure that is evolving but simultaneously the memories it evokes. Both are constantly in the making, both are non-essential and temporally non-linear. As the placing of the Wall chunks in the Price of Freedom exhibition and the subsequent steering of the Vietnam war narrative shows, memories are best understood as being sociomaterial. The material presence of the Wall is important for museumgoers to be able to connect their own meanings and memories concerning the Wall with the other exhibits to form a new contextual understanding. Here, where materials, prior individual experiences, and larger societal histories and cultures come together, new memories and insights are being formed and performed. Remembering is sociomaterial activity, a performative act of humans and things.

Several points are worth noting. For one, memories are enacted or performed rather than drawn from some mental archive. They are understood from the present perspective of the individual and do not pre-exist with a fixed meaning. If one had specific memories of the Vietnam war prior to the exhibition, the perception of the war artifacts together with the Wall chunks might well have changed these memories. This implies the second point: materials play an important role in the creation of public memories. A museum without any artifacts would probably not even be considered a museum and memorial sites are material by definition. It should be added that materials may be very helpful but not necessary in the

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[23] This conclusion makes it imperative to quote Angela Davis, who famously states in her autobiography: "Walls turned sideways are bridges" (Davis, 1988, p. 347). Amongst other things, she reflects in this book on her time in Berlin and how she crossed the East-Western border.

production of memories. One can remember past events by a particular smell, listening to a particular song, or by daydreaming (although maintaining that these triggers are entirely immaterial is problematic in its own ways). But even the memories produced in such instances are contingent and contextual.[24] Thus, meaning-making—be it in exhibitions or urban spaces—and meaning-giving as it occurs during appropriation are two sides of the same coin.

Likewise, the materiality of the Wall transforms as well. It is relational, porous, malleable but also harsh or crude if its placing is contested. With Gabrielle Hecht, who has worked extensively on similar sociomaterial processes with respect to the evolving perception of nuclear materials in Europe and Africa, we might note that physically, it is the same concrete that has travelled across time and into the world, just as the radiating uranium exists both in French and African mines. The Wall's porosity or impenetrability, however, depends on its spatiotemporal situatedness and continuous sociomaterial negotiations, just as the nuclearity of French and African mines differs considerably, resulting in completely different treatments of the mine workers' diseases (Hecht, 2009). Concluding, one could say that just as particular material identities have neither *a priori* existence nor possess universally fixed properties but are rather the result of sociomaterial negotiations, so too, do memories emerge from sociomaterial interaction rather than pre-exist. In this sense, the technopolitics of the Berlin Wall are also cultural politics.

4.4 East Side Gallery: From the politics of repair to repairing politics

In this final section, we return to Berlin to take a closer look at a piece of the Wall that has not been removed from its original location but nonetheless has taken a considerable u-turn in its various functions. Tracing this infrastructural segment's complex evolution helps to better understand the many paradoxes involved and crucially to see how grassroots technopolitics emerge from the struggles over its preservation. These considerations finally suggest to interpret infrastructural maintenance and repair as a repair of democracy.

4.4.1 The East Side Gallery's turbulent history

Part of Berlin's official Wall memorial infrastructure, the so-called East Side Gallery is one of the longest stretches of the Berlin Wall that still exists today. This part of the hinterland wall features more than one hundred large graffiti paintings, most of them dating back to an

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[24] Consider how listening to the GDR's national anthem might evoke different memories and feelings, depending on the point in time and relation to this state. It is imaginable that right after the Wall's fall, one would not have proudly chanted this anthem as the tune rather evoked memories about the wrongs one had experienced. But years later, nostalgic feelings might arise when hearing it, producing completely different memories.

Fig. 4.4 Dmitri Wrubel, "Mein Gott, hilf mir, diese tödliche Liebe zu überleben" (My God, help me to survive this deadly love) (Creative Commons License CC BY-SA 3.0)

organized street art intervention in 1989 (Barthel, 2017). Some of them are world-famous like the brother's kiss of Brezhnew and Honecker (Figure 4.4), the Trabi bursting through the Wall (Figure 4.5), or Noir's round-shaped heads (Figure 4.6), making it one of Berlin's most visited tourist attractions.[25]

Shortly after the opening of the border, squatters started to occupy the no-man's-land between the riverbank and East Side Gallery. For years, the city tolerated the gathering of trailers and campers and the alternative lifestyles that came with it. Behind the Wall and thus "removed from the tourist gaze, an ever increasing number of metropolitan nomads" were communally living there until the bank area was cleared for future development projects in 1996 (Bach, 2016, p. 56). Apart from functioning as an open air canvas for street art, the Wall also still functioned as a barrier. But instead of blocking flows of people between East and West as it used to, it now provided shelter for the nomadic flows indicative of a unifying and increasingly vibrant city.

In 2006, the city removed a large section of what had already become one of Berlin's major tourist attractions to provide a new sports arena with an uninterrupted view of the river (Barthel, 2017). Plans existed to demolish the entire Wall section to free valuable construction ground. Citizens and activists protested vehemently, expressing their concerns about the increasing issues of gentrification and sellout of public space to private investors. As the East Side Gallery started to crumble away, extensive restoration works started, leading in 2009 to the invitation of all 115 original artists to repaint their 20 year old murals (Barthel, 2017; Schneider, 2014). Some refused to redo their work, believing it was neither

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[25] See also the website of the artists' initiative responsible for the painting interventions 1989-1991 (http://www.eastsidegallery-berlin.de) and the online collection of all murals at the East Side Gallery (https://artsandculture.google.com/exhibit/east-side-gallery/gQAJocMp?hl=de).

Fig. 4.5 Birgit Kinder, "Test the Best" (Creative Commons License: CC BY-SA 2.0).

Fig. 4.6 Thierry Noir, "Homage an die junge Generation" (Homage to the young generation). (Creative Commons License: CC BY 2.0)

very valuable nor that their juvenile creative expressions should become a heritage, but a majority accepted the offer (Yi, 2013).

A couple of years later, protests were sparked again when construction of a luxury apartment building on the former border strip started. After delaying the construction, ultimately only a few meters were removed to allow access for construction equipment, placing the new building right behind the wall. It is only thanks to the various interventions, enduring protests by citizens, and other grassroots initiatives that the East Side Gallery could be mainly preserved, be officially recognized as a Berlin Wall memorial site, and become part of what some, including the Berlin Senate, have called the *Gesamtkunstwerk Mauer* (total artwork) (Bach, 2016). As this term indicates, the Wall has performed a dramatic turn with regards to its diverse functions—poetically, materially, technically, socially, politically. To understand these changes, I will analyze some of the most salient ones, shed light on some of the paradoxes accompanying the changes, and ultimately point out how they give rise to a different understanding of technopolitics.

4.4.2 Poetics doing a u-turn

Right after its opening, the hinterland wall closing off the Spree from East Berlin was not only a site for many street artists to color the previously concrete grey wall for the first time. It also offered protection to a growing number of squatters that started occupying the no-man's-land between Wall and river. It thus changed from a "historic monstrosity" (Brandt, 1989) that was best chiseled away and shredded to pieces to a 'good wall' that allowed alternative lifestyles to thrive and artistic interventions to take place. Eventually it even became a tourist magnet. Despite this, the city pursued plans to remove this more than one kilometer long stretch for development projects.

Yet, the East Side Gallery "provided the city with open space, possibilities, creativity and personal freedom" (Barthel, 2017, p. 285) and thus had not only become a symbol and memorial site for oppression, an icon of freedom like the small souvenir concrete chunks, but also a gathering point for artists, political activists, and citizens. In their eyes, only if the Wall remained as it was and was not removed to the favor of private investors, could these grassroots initiatives be successful. While the slogan of 1989 had been "the Wall must go", it now became in the case of the East Side Gallery "the Wall must stay."

The insight that the Wall continues to exist as an infrastructure even after its fall, as suggested already in the discussion of the dislocated pieces in the previous section, helps to understand this remarkable change. This infrastructure functions as a focal point at which various struggles are acted out and eventually technopolitics emerge. On the one hand, the "new" Wall attracts a flow of tourists concomitant with a commodification, even a Disneyfication of the Wall as some remarked (Bach, 2013; Frank, 2016), while on the other hand shielding off the squatters from the tourists. These contradictions made the East Side Gallery take center stage in struggles over issues of gentrification and citizens' resistance

against turbo-capitalist development projects, where for example the unobscured waterfront view for an event hall is deemed more important by the city than the preservation of one of the last long stretches of the Berlin Wall, even if painted with internationally recognized murals.

Whereas these artworks can be understood as an expression of Berlin's and all its citizens' newly gained freedom and the first attempts to reclaim public space from the now obsolete surveillance and control state, they also obscure the fact that the hinterland wall—precisely because of the comprehensive state control—never had been painted during its existence as a border barrier. As we saw already with the smaller Wall chunks and their apparent need to be painted in order to be sold as souvenirs or exhibited in museums, here too, tourists seem to prefer the colorful Wall over bare concrete as it can be found for example at the far less known Mauerpark close to the Wall memorial at Bernauer Straße.

Although I argue that the Wall's poetic function has changed from symbolizing an impenetrable, forbidding barrier to one that signifies freedom, it is remarkable that its function as a protective barrier against Western capitalism as was claimed by the GDR regime appears to have found a new equivalent. Standing as a symbol for the fight against gentrification and grassroots initiatives against the construction of luxury apartments, it ironically still performs the function of protecting against rampant capitalism. Paradoxically, however, this new function comes along with the recognition of the Wall as a fragile structure or as a body requiring protection.

This protection is provided through social engagement and identification with the "new" Wall. Thus, the emergence of the East Side Gallery as a memorial infrastructure around which current struggles over urban life are enacted is made possible through social entanglement with the Wall remains and the various ways in which they were treated. Whereas the focus in chapter 2 was on the hybrid evolution of materiality and poetics, an additional element of this process needs to be highlighted here—the necessary involvement of social relations. Poetics and materiality are not produced or defined within a set of exclusively nonhuman relations, neither are they prescribed or attributed "from above" by humans alone. In a less anthropocentric perspective, as I advocate in this thesis, they rather emerge through the "crossover" of social and nonhuman relations (Latour, 1994, p. 63f). According to Latour, it is one thing to alternate between social and nonhuman relations and another to hold that these two sets represent distinct points of origin for agency, meanings or identities—every interaction is sociomaterial. These interactions in the form of graffiti painting, the protests to protect the Wall from being razed, the development of squatter camps, or the Gallery's significance to tourists from all over the world (including the benefitting tourist guides and souvenir traders), highlight that new poetics and materialities do not evolve independently from humans but always out of the complex relations and various entanglements with them.

Finally, the evolution of the Wall into the East Side Gallery highlights another paradox that could be emblematic for most border walls. During its 28 years of existence as the barrier between East and West it appeared more and more as an unchanging fact, as enforcing an exclusion from political participation and a blocking of exchange. But these technopolitics changed considerably. As the Wall evolved through various negotiations after its initial opening in 1989, it also became a focal point to gather, to voice concerns, to open debates. A set of completely different technopolitics of the Wall emerged as we will see.

4.4.3 Repairing infrastructures, repairing democracy

As a final step, these different technopolitics are more closely examined, allowing to give the notion of infrastructural repair an additional twist. The struggles around the protection, preservation, and development of the East Side Gallery make clear that repairing infrastructures could also be interpreted as repairing politics. The Wall of the East Side Gallery has changed for many people from a wall that must go to a wall that must stay.

To the GDR regime, the Berlin Wall was what could be considered a "critical infrastructure" (Aradau, 2010). Analogously, today's Wall relics could be seen as "critical infrastructure" as well. Other than the East German border protected by the state, though, the East Side Gallery, but also what became the first official memorial site at Bernauer Straße, were primarily saved from destruction by grassroots initiatives, artists, and citizens. It is a critical infrastructure because it served and continues to serve as a site for the enactment of various struggles. These range from evoking and shaping memories of institutionalized terror, government and infrastructural violence, and victims' trauma to the various architectural subtractions that accompanied the Wall (including its deconstruction), to a symbol for the fight against gentrification and as an art installation. It is in this sociomaterial assemblage that new materialities manifest themselves and public disputes are voiced.

Not only did the wall-peckers or the influence of investors speculating for valuable property make apparent the fragility of the Wall. The East Side Gallery also decayed quickly "because the Hinterlandmauer, unlike the actual, reinforced concrete Wall, was made of the cheapest material, it didn't hold up to weathering. The East Side Gallery crumbled and fell apart" (Schneider, 2014, p. 225). The struggles over preserving and repairing the Wall make visible the Wall's importance for Berlin's urban life (from rearranging social ordering through new buildings to making profit from the flow of tourists), but also its material fragility and the need for repair.

Above, I argued already that repair should be viewed as a transformative process that can connect different temporalities and is capable of reconfiguring materials. Ultimately, repair also bears political significance. The many cases of citizen participation to preserve the Wall suggest that a fragile construction only survives in and through the crossover of social and nonhuman relations from which politics emerge (Latour, 1994). Saying that

infrastructures and their continuous making—specifically including repair—are technopolitics is just another way of expressing what Latour has described as *Dingpolitik*, which is "when matters of fact give way to their complicated entanglements and become matters of concern" (Latour, 2005, p. 31). In other words, the dealing with material fragility goes hand in hand with living and enacting democracy, in which different opinions are given voice. In this sense, repair as a sociomaterial practice ultimately comes to be seen as a political activity.

4.5 Conclusion

As the Wall was being deconstructed, it emerged as a new infrastructure, one that is capable of spreading into the world. Tracing the Wall's material after the fall helps reveal the various paradoxes that are also found in many other infrastructures, such as its decaying but also productive character or its capacity to exclude people from political processes but also providing focal points to gather and articulate concerns, thus acting as a political site. The Wall's continuous and continuing evolutions as it bends through time and travels through space make evident that technopolitics, too, are not something stable but also evolve together with the sociomaterial processes that give rise to them. In this sense, the emergence of fragility as an important feature of the East Side Gallery went along with the emergence of the young and fragile democracy of the newly unified Germany. The various struggles over repairing the Wall remind us that democracy, too, is a complex and fragile process made possible by various sociomaterial assemblages. Just as infrastructures are always in the making and require constant upkeep, so too does democracy live through multiple acts of maintenance and repair.

5. Conclusion

Approaching the Berlin Wall as an infrastructure helps to see that the perceived impenetrability or porosity of the Berlin Wall is not just defined by clear-cut material-scientific terms. It is located in a technopolitical spectrum that shifts in time and space. The degree of its permeability depends on historical and geographical conditions as well as scientific and technological ones. It bears significant consequences for politics, culture, identity, and health. Varying degrees of impenetrability structure the control of flow of people, materials and information and bring to bear diverse conceptions of the Wall: it protects citizens and art projects; as commodities and memorials it demands maintenance and repair to be recognized as pieces of the Wall; it relates to Wall disorder and its psychosomatic effects.

The goal that I had set for this thesis was to find out what kind of understanding of technopolitics is revealed if I approached the Berlin Wall as an infrastructure. My main proposition can be put in simple terms: Technopolitics emerge as a process from sociomaterial interactions. As a conclusion to this thesis, I will summarize and elaborate on this point.

Framing border walls as infrastructures allows to step beyond the traditional binary of the social versus material, resonating well with the idea of sociomateriality. Not only does this approach allow to complement the predominantly modern and ontologically inconsistent accounts of border walls in existing literature—and the Berlin Wall in particular—but also to map out different conceptions of technopolitics as they unfold over time. With this approach, I also hope that a wall (that today might not even qualify any longer as technology) has been made a bit less mundane. This could help us to understand that technopolitics of border walls are also far from ordinary.

To follow an infrastructure and its entanglements through time allows to shift the perspective from politics as an anthropogenic activity to a hybrid process. But this does not imply that categories like *the social* or *the material* are to be discarded. Rather, they provide useful analytical starting points from which their fields of convergence can be approached and examined, or to put it in Latour's words: "It is possible to have our cake and eat it—to be monists *and* to make distinctions" (Latour, 1994, p. 63, original emphasis). This premise has allowed me to advocate throughout this thesis various manifestations of *hybridity* while being able to address the diverse elements whose interactions constitute it. Accordingly, the Berlin Wall comes to be seen as a hybrid structure—an infrastructure that is constantly made and re-made by material elements, humans, spaces, techniques—and that is able to establish and make evident the relations between them.

Already implied in this focus on the various and often surprising reconfigurations of closely intertwined agents lies another important aspect. It is the inherent temporal character of these co-evolutionary processes. Pickering's notion of a dance of agency aptly illustrates

the amalgamation of different dancing partners and their open-ended movements through time and space, out of which agency but also material properties and symbolic meanings arise. This metaphor inspired me to portrait the Wall as one of the dance partners and highlight with its poetics and materiality two of the stages on which this dance takes place. The Berlin Wall does not have *a priori* functions or meanings, the decisions prior to its construction, while it stood, or after it fell, did and do not stipulate its essential properties. Rather these unfold from the interplay of designers, escapees, and material affordances, to name just a few. As a result of this approach, a multi-faceted view of the Berlin Wall is established that helps transcend common perceptions of border walls as having clearcut functions that are fundamentally the same everywhere and anytime. By bringing out the Wall's temporal and hybrid character, I have opened up a view that incorporates even contradictory images of the Wall. Here, paradoxes come to the fore, like the Wall separating while also uniting or its perceived appearance as an impermeable and permanent barrier *and* a fragile structure that easily crumbles away and takes on completely different meanings, able to act as a gathering point for civic participation or a space for art. In other words, there is no such thing as an authentic, never-been-tinkered-with piece of a wall. Being a wall means being in use, being in confrontation, being always repaired and in the making, being amidst sociomaterial struggles. The examination of the Wall's processes of constant (re)making offers valuable insight into the co-evolution of social, cultural and material practices.

Out of these practices and interactions, technopolitics emerge as a hybrid process. I have illustrated this emergence with various episodes of the Berlin Wall, spanning from the first moments of its construction, its retrofits, the simultaneous appearance of urbicide and psychosomatic disorders, to its demise, repair and reuse throughout the world. To make sense of these sociomaterial processes, humans themselves ultimately come to be seen as hybrids, too. The interwovenness of their lines of life with the material world, to borrow from Ingold, helps to understand not only how radically re-ordered urban spaces in Berlin influence humans mentally and somatically, but also how human-material engagement gives rise to politics. As such, technopolitics come in different manifestations. They can arise from sociomaterial practices as somato-politics or as cultural politics, with many other forms possible as well that still wait to be addressed. They make evident the close interrelation of politics, culture, technology and human bodies.

Many issues that I have only been able to touch briefly demand further attention and are worth of future research. One might ask for example if Wall disorder is a syndrome exclusively linked to the Berlin Wall or if citizens of other divided cities suffer from similar symptoms. In this regard, studying people's psychosomatic conditions and their everyday life with an urban border wall in Nicosia, Belfast, or Jerusalem would contribute to a better understanding of the entanglements of border infrastructures with the people living on both sides. Finding similar symptoms would also indicate that Müller-Hegemann's original

publication on the Berlin Wall disorder out of his western exile was not motivated by West German interests but indeed describes health conditions related to border walls. Analyzing further how unbuilding the Wall and re-uniting previously ruptured infrastructures like the public transportation networks of East and West Berlin played out, could furthermore help to address similar issues in other (still) divided cities.

The constant becoming of a wall has been one of the central premises in this thesis. My focus on the Berlin Wall could imply that the discussed processes, including technopolitics, emerge from a unique cultural and social background. By means of a comparative study of several divided cities (or even gated communities as walled areas within cities), the universality of the sociomaterial processes discussed in this thesis could be put to test. How much would they differ in various spatiotemporal settings?

Finally, I suggest that the central theme of this thesis, *technopolitics,* be studied further from the processual perspective that I have advocated. Although being debated for many years by various scholars, calling it sometimes *Dingpolitik*, the idea that *things* play an important part in politics still appears radical to a broader audience. It strongly implies that politics is neither an immaterial process nor something that originates exclusively from human intellect. It is rather born in the complex, even messy interplay between humans and nonhumans. It is reborn again every time this sociomaterial engagement occurs—giving us an idea of what it means to live in a material culture. Many more aspects of this world of becoming remain to be uncovered.

Fig. 5.1 Ruins of the Berlin Wall in September 1990. (https://www.nzz.ch/international/berliner-mauer-genauso-lange-weg-wie-sie-da-war-ld.1354320, accessed 26.05.19)

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