HEALTH IN THE POSTPANDEMIC CITY: CONTESTED SPATIALIZATIONS AND BIOPOLITICAL IMPLICATIONS

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Summary: Health and disease have been conceived as problems of urban space throughout history, and public health interventions have repeatedly been employed as spatial strategies. Critical perspectives have already utilized this special relation: Urban health is often a showcase for modes of biopolitics. We follow this example, investigating the current rearticulation of public health in the aftermath of the worldwide COVID-19 pandemic. We draw together the German debate on health in the post-pandemic city, both in the general media and in planning literature, using a discourse-analytical method and find that two contrasting narratives emerge. The urban is considered either as the expression of pathogenic spatial density or as the site of healthy social interactions. While each narrative prefigures a very different mode of intervention, both encourage a spatialization of health, with powerful implications. Distinguishing the competing rationales thus allows better decisions on ways to promote health in the city.

Zusammenfassung: Gesundheit und Krankheit sind historisch immer wieder als Steuerungsproblem städtischer Räume gefasst worden und entsprechend ist Gesundheitsschutz und öffentliche Gesundheitsförderung häufig auch eine räumliche Strategie. Mit den sich überlagernden Krisen Pandemie und Klimawandel wird städtische Gesundheit derzeit erneut prominent als Handlungsfeld markiert. Der Beitrag beschäftigt sich mit der aktuellen Debatte um die postpandemische Stadt in überregionalen Zeitungen und in Planungsliteratur. Mit Hilfe einer diskursanalytischen Methode lassen sich zwei kontrastierende Narrative städtischer Gesundheit auffinden, die Gesundheit verräumlichen und auf unterschiedliche biopolitische Logiken städtischen Regierens rekurrieren. Das Städtische gilt es einerseits als Ausdruck einer pathogenen Dichte aufzulockern und zu begrünen. Andererseits ist gerade die Überdetermination des Städtischen Garant gesundheitsfördernder sozialer Interaktionen. Der Artikel bietet ein vertieftes Verständnis aktueller biopolitischer Logiken und damit die Chance, aktuelle Stadtplanung kritisch zu begleiten.

Keywords: Urban health, discourse, biopolitics, urban geography, political geography, Germany

1 Introduction

The pandemic is discussed as a 'crisis of the urban' not only in urban studies but also among planning practitioners and architects (Martínez & Short 2021, UN-Habitat 2021). The COVID-19 situation should be a wake-up call to shape a resilient postpandemic city that is better suited to dealing with pandemics and issues of health in the future (Batty 2020, Carpio-Pinedo et al. 2021, Sharifi & Khavarian-Garmsir 2020). The experience of the worldwide pandemic that started in 2020 has entailed a substantial break with routines and accepted customs for most of humankind, and it has also triggered reflection on a postpandemic future in several fields and in many countries. Voices engaging in this debate have envisioned the impacts of the pandemic on spatial restructuring and urban processes, especially in Germany. From the first lockdown, the general media in Germany started a broad, informed, and vivid deliberation about the future of cities after COVID-19. Furthermore, urban planning research institutions, which play a crucial role in the comparatively formalized spatial planning system in Germany, have also discussed this question extensively. Recurring concerns include expected changes in land use, alterations to the inner-city office and retail structures, and the future of housing and mobility demands. Health concerns have also moved to centre stage. In the following, we take this debate as material for a power-analytical reading. The current articulation of urban health evoked in this debate allows us to detail contested but currently accepted ideas on relations between health, space, and the city. These ideas also provide a foundation for shifting styles of biopolitics expressed through proposals for spatial interventions.

Spatial aspects and the special role of the urban in health monitoring and health provision have been increasingly considered in public health research over the last decade. The ongoing process of urbanization worldwide has renewed interest in the ways in which "the urban context affects health" (Galea & Vlahov 2005: 344). Urban health penalties (Freudenberg et

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al. 2005) and urban health advantages (Zhu et al. 2021) are revisited, and the built environment of cities is discussed as determinant of health (Frumkin 2021). Concepts such as the healthy city (de Leeuw & Simos 2017) and "cities for life" (Corburn 2021) draw attention to how urban development influences public health "from neighbourhood to national health equity" (Corburn 2013).

A second body of literature also engages with the urban health question but with a totally different goal. Prominently pioneered by Michel Foucault, the connection of urban space and health has also been used to ground a critical analysis of changing modes of power and governing. The example of the city and the different infection control regimes employed to cope with leprosy, bubonic plague, and cholera allowed Foucault to detail a shift towards more indirect and 'milieu'-based forms of power, which he calls 'biopower' (Foucault 2003). The historical perspective engaged with this approach also identifies some recurrent tropes and concerns legitimizing the city as a prime target for public health interventions. "[T]he nineteenth-century city was produced as the locus of fear, disgust and fascination" (Stallybrass 1986: 125), partly because it figured as a looming health hazard for its bourgeois inhabitants, users, and visitors. The birth of public health around infectious disease control importantly originates in these hygiene concerns about the early industrial city (de Leeuw 2021). Health and disease have been conceived of as problems of urban space throughout history, and consequentially public health interventions have repeatedly been employed as spatial strategies.

Over the last two years, we have witnessed a growing public interest in issues of public health in general and in future strategies of pandemic prevention and preparedness in cities in particular (Dye et al. 2020). Following a power-analytical perspective, we aim to detail this current rearticulation in a general public debate and in a professional urban planning discourse in Germany. Thus, our approach differs from a content analysis of a scientific debate, such as a meta-analysis. Instead, we focus on discourse as a structure of truth statements. How is it possible to articulate urban planning as an answer to future pandemics in the current public debate? Which of the arguments and problematizations are taken up, and how are longstanding concerns and ideas reintroduced into the debate triggered by the COVID-19 situation? A second step is to reflect on the spatial and biopolitical implications. In what way is urban space approached as a means of public health interventions? In what way does the city feature as part of the problem or part of the solution in safeguarding health as a public policy issue? What modes of power and understandings of biopolitics are projected in this debate?

2 Questioning urban health in terms of power relations

The problem of public health has been brought to the centre of public attention by the COVID-19 crisis. But the framing and governing of health as a collective issue has been a defining problem for the modern state for some time, as debates in social theory and history of the present show. Assumptions about the scope, objects of intervention, and ways of addressing health through political interventions have been subject to fundamental change throughout history (Meloni 2021). Foucault famously pointed out that it was only in the 19th century that the problem of collective health became a problem of the state and with it biopolitics was born (McQueen et al. 2007). "'[L]ife' and 'living being' [*le vivant*] are at the heart of new political battles and new economic strategies", as Maurizio Lazzarato (2002) summarizes this analytical claim of biopolitics. The political concern regarding public health as a previously "unproblematic field of experience" which "becomes a problem, raises discussion and debate, incites new reactions" (Foucault 2001: 74) seems to be especially helpful for understanding specifics of modern political rationalities.

This observation and the corresponding analytical strategy, taking public health policies as prime examples to understand changing rationalities and modes of governing, has been followed up and has been fruitfully detailed (Rose 2001, Dillon 2015, Wilmer & Žukauskaitė 2016). As already sketched, biopolitics as such and changing styles of biopolitical intervention have often been distinguished by the ways in which urban space is conceived and targeted in different epochs (Braun 2008; Füller 2016, Gandy 2006). Current articulations of health interventions in and through urban space, from arranging 'walkable' public space to reduce obesity (Rebecci et al. 2019) to unsolicited home-visits by health wards in certain 'problematic' neighbourhoods (Savaskan & Wagner 2021), are therefore a promising empirical point of access for our specific interest in changing problematizations of public health.

We reach back to a broad understanding of governing here that allows us to access urban health as a field of political intervention and to see the debate

on the postpandemic city as part of a discourse that frames and legitimizes the guiding ideas for these interventions. We find a basic conceptual orientation for this analysis in the work of Michel Foucault and especially in his clarification of the nexus of power and knowledge. Foucault provided a specific perspective on political issues that highlights the intricate connection of power and knowledge. Foucault's suggestion is to approach political issues not as problems as such, but as 'problematizations': as "the analysis of the way an unproblematic field of experience or set of practices which were accepted without question, [. . .] becomes a problem, raises discussion and debate, incites new reactions, and induces a crisis in the previously silent behaviour, habits, practices, and institutions" (Foucault 2001: 74). Importantly, this perspective allows problems to be seen not as given per se but as essentially dependent on underlying assumptions and as powerful in constraining the possible solutions. Problematizing means giving "an 'answer' to a concrete situation" (Foucault 2001: 172). An answer that instantiates a certain logic or rationalization also informs the way the problem is constituted, addressed, and solved. Foucault describes the genealogy of problems as a double movement "in which one tries to see how the different solutions to a problem have been constructed; but also how these solutions result from a specific form of problematization" (Foucault 1984: 389). In his analysis of the political construction of drinking as a public problem, Joseph Gusfield (1981) observed how problematizations influence policy development. Our interest is thus not in evaluating current policies or interventions but in detailing the ways in which public health is currently 'problematized' in Foucault's sense. What is "accepted without a question" (Foucault 2001: 74) and what must be done accordingly? This short sketch frames how and why we approach the debate on the postpandemic city as an especially fruitful point of crystallization of current truths, problems, and expectations about collective health as an object of biopolitical intervention. The current COVID-19 rupture provides a special opportunity here. Many taken-for-granted truths are being revisited at the moment, and issues of public health have become a broad concern. From a postfoundational, discursive understanding of the social, COVID-19 can be seen as prime example of a moment of the 'political' in the sense of Ernesto Laclau. That is a situation where established, sedimented assumptions are put to the test and demand rearticulation. We assume a "moment of antagonism" here, "where the undecidable nature of the alternatives and their resolution through power relations becomes fully visible", as Ernesto Laclau detailed (1990: 35). This assumption of urban health post-COVID-19 as a moment of antagonism guides our approach here. What modes of power and understandings of biopolitics struggle for hegemony in the debate on the postpandemic city? Two guiding questions help to render this research question actionable for an empirical approach:

- *Problematization*: How is urban health problematized in the discourse on urban health?
- *Spatially organized answers:* Which spatialized ways of dealing with the problem in a future postpandemic city emerge from this problematisation?

3 Approaching the current discourse on urban health

The German debate on health in the postpandemic city mainly unfolded in quality newspapers and in the numerous planning research institutions that inform urban policymaking in Germany[1]. We take this debate on the postpandemic city as the entry point for an empirical discourse analysis focussing on the rules of formation structuring this discourse (for methodological details see Dzudzek et al. 2020: 161). Following this approach, we first constructed a corpus of texts that comprises relevant enunciations on health in the postpandemic city. Therefore, we collected all articles published from the beginning of 2020 until September 2021 from the seven leading German newspapers (*FAZ*, *Süddeutsche*, *TAZ*, *Frankfurter Rundschau*, *Tagesspiegel*, *Die Zeit*, *Die Welt*). Additionally, we considered all publications of the leading German urban planning institutions in this timeframe: The Federal Office for Building and Regional Planning (BBR), the German Institute of Urban Affairs (Difu), the Wuppertal Institute, the Association of German Cities, the National Urban Development Policy, the Academy for Territorial Development in the Leibniz Association (ARL), the Research Institute for Regional and Urban Development (ILS), the Institute for Urban and Regional Development, and the Federal Ministry

[1] Although numerous public health professionals commented on health in the postpandemic city in the newspapers, our analysis did not comprise enunciations from public health institutions. Instead, our insights are limited to discourses in newspaper articles and urban planning institutions, because we focused our analysis on the nexus between urban space and health and these institutions were not so prominent in the debate.

of Education and Research. Second, we extracted all the articles from this corpus that concern health in the future city through a semi-automatic reading using a list of suitable lemmas. Third, the resulting corpus was analysed hermeneutically. We applied an intersubjective method of shared coding based on our discourse-analytical perspective. These rules of formation aggregate those "enunciative regularities [as] they characterize a discursive formation" (Foucault 1989: 162). The statements we find in our material are therefore not considered regarding their content as such, they interest not as "'things', 'facts', 'realities', or 'beings' but [as indicating] rules of existence for the objects that are named" (Foucault 1989: 103). This structure-finding type of coding allows understanding of such discursive rules as the underlying, sometimes conflicting problematizations of health and space and shifting modes of biopolitical governing that shape the articulation of various postpandemic urban futures. Discourse analysis is a methodology from qualitative social research. As a hermeneutical approach, it aims for plausibility rather than replicability.

4 The future of public health in the postpandemic city: From social hygiene to urban environmentality

The corpus-based analysis allowed us to discern six distinct formative elements relevant to the current German discourse on health in the postpandemic city: distinct problematization, understanding of health, mode of accessing the problem, conceptions of intervention, genealogy, and biopolitics. These aggregate into two distinct narratives: 1. the 'social interaction' narrative and 2. the 'de-densified ecologies' narrative.

The first narrative is very much in line with the current planning discourse, propagating the dense and compact city. These qualities help to promote interaction and exchange as requirements for functional neighbourhoods that ultimately strengthen well-being, according to this first narrative. Notably, the second narrative strongly contradicts the established planning rationale of the compact city. The debate on the postpandemic city marks the emergence of a new paradigm and a rupture with established ideas. According to this second narrative, density is not at all beneficial but a potential danger. Health in the city is to be achieved through decrowding its spaces and reducing interactions. As a defining difference, the two narratives each have a pivotal 'deficit' organizing their statements. The first narrative identifies a deficit of interaction: public health in the city is primarily hampered by social distancing and isolation and the loss of meaningful contacts at the level of communities. The second narrative emphasizes a deficit of free flow: Public health in the city is foremost affected by density and constrained spaces. Our perspective on problematizations allows the differences between these two narratives to be to identified and detailed. In the following, we present the differences between these understandings of health, how health is intended to be made visible and actionable, and the different modes of intervention each proposes. Importantly, this differentiation allows the regimes of biopolitics that the two narratives entail to be better understood.

4.1 Isolation and distance: Social distance and isolation as threat to social and health equity

Problematization: The first narrative we identified in our corpus articulates isolation and social distance as main threats to social and health equity during the pandemic. Here, the authors problematize "the emptiness on the street; the loneliness at home" (Braun 2020). "One third of all people in Berlin live alone. That means: the so-called contact-ban hits them particularly hard. All what makes a city special, its liveliness, the culture, all that falls away" (Braun 2020). Statements emphasize that "young people experience themselves as placeless because school closures, contact bans and the standstill of public life have taken away their own spaces" (Neckel 2021), that "[d]igital communication alone cannot compensate" (ibid.). But "[y]oung employees—such as apprentices and working students—would suffer particularly from the Corona-induced isolation in the company, as they are still developing their social skills" (Janert 2020).

Understandings of health: Such problematizations rely on an understanding of health as the effects of social relations. "Social factors affect people's health, both positively and negatively. These factors are called social determinants and are often not considered at all" (Gutsmiedl 2021). Isolation is a threat to mental as well as physical health. "Desolidarisation, social exclusion, isolation and violence are keywords for developments in cities that are unfavourable to health, which can also be seen as an expression of a deep social division in society" (AGGSE 2020). This narrative problematizes "a pathogenetic view, directed at concrete dangers, and a narrow understanding of

health [that] still prevails [in planning]. However, strategies of structural health promotion are not yet sufficiently considered. In addition to the health-oriented development of spatial-material structures, the participation of affected residents and their empowerment is needed" (Köckler & Sieber 2020: 933). Health promotion should thus address settings such as school, kindergarten, sports, and recreation.

Modes of access: In both narratives, digital technologies play an important role in rendering the respective understanding of health visible and accessible for public health intervention. In the first narrative, organized around a deficit of interaction, the digital is presented as a way to safeguard situations and places of interaction. "More and more enterprises rely on heat detectors to check on the health of their employees and customers" (Lobe 2021). Vaccinations and health status can be checked as conditions of participation with digital devices rapidly and without much effort. Such biological indicators, also measured with digital tools, may increasingly become preconditions for social participation. Additionally, digital technologies are seen as facilitators of bottom-up processes and the strengthening of local neighbourhoods as settings of healthy interactions: "Communal platforms [. . .] may help to push the digital transformation in public services, strengthening the local scale" (Rottmann 2021).

Interventions: At the level of urban planning and urban governance, health as a social problem of isolation and distance is answered by the model of the compact city. This model mobilizes urban density as a resource for urban health. Compact cities promote relatively high residential density and provide a range of functions, such as housing, work, care, and recreation, all in the same local community. Consequently, this narrative presents living environments and social settings as prime fields of intervention for health promotion. Lively and stable local communities are constructed as sources of health, well-being, and resilience, because they grant vital social relations, webs of care, and security in cases of individual crises. Community nurses and community health centres can catalyse social relations as sources of health. "We bring residents together so that they realise that they are not alone with their problems. Lots of social contact and solidarity within communities can have a positive effect on health" (Monecke 2021).

Following this logic, successful health policies must operate through space to fix the problem of public health (McFarlane 2021). Again, space functions as a fix for public health problems. "Public spaces where people like to meet" are conceptualized as "medicine against social isolation, one of the main mental illnesses in the city" (Adli 2021). Proximity, public spaces, and short distances are three promises of the compact city.

But not all voices in this narrative restrict public health promotion to increasing urban density. Instead, they enrich the spatial with a 'social' fix:

"Taking the pandemic as an opportunity to reopen the old debate between proponents and opponents of urban density is clearly too short-sighted. Not only because it has always been based on the false assumption that social problems can be solved by means of urban development, but also because it usually ignores the structural causes of social inequality that find their material expression in urban space" (Girgert 2020). They try to address the structural causes of disease through community work.

Genealogy: A look into the historical sources of this German narrative provides useful insights. In the 19th century, the discovery of microbes and the foundation of germ theory by Louis Pasteur and Robert Koch revolutionized modern medicine and marked a paradigm shift in public health (Bonneuil & Fressoz 2016: 37) from environmental to social hygiene. During that time, social hygiene in the German-speaking world was defined as the "study of the influence of the environment on homogeneous groups", which was "determined less by biological influences than by the specific social condition" (Eckart 2007: 1345). With the rise of industrial capitalism and the associated pauperization of urban populations, the fight against disease and social deprivation became a survival strategy for society, and it was implemented through education, urban renewal, and social security programs. "'Health' developed into the central dispositive that interrelated different social spheres and operated as a normalising power" (Ronneberger 1999: 435). Social-hygienic knowledge regimes served as techniques both for "justifying the externalities of industrial capitalism" such as "the biological consequences of pauperism and industrial pollution" (Bonneuil & Fressoz 2016: 173) and for "democratisation in the Weimar Republic" (Ludwig 2019). In the 19th century, this approach instituted social policy as the responsibility of the state in order to grant freedom and free trade.

Biopolitics: Today, social hygiene as a contemporary biopolitical mode of urban governance operates at a more mundane level through urban set-

tings and communities. "'Government through community' involves a variety of strategies for inventing and instrumentalizing these dimensions of allegiance between individuals and communities in the service of projects of regulation, reform or mobilization" (Rose 1996: 334). A prominent strategy in the postpandemic city entails concrete local settings as a mode of government. "Measures" shall be "taken where people live, learn, work, care for themselves, etc." (Classen 2020: 9). The health departments approach the people in their local settings. "The city of Cologne now wants to send mobile vaccination teams to social hotspots with high incidences. That is exemplary!" (Wernicke 2021). And health communication shall reach people at ordinary mundane places such as school, pharmacy or supermarket. "We have tried to reach people in their everyday lives" (Monecke 2021). Governing health through social hygiene, urban settings, and communities is ambivalent in its effects. It entails the potential to democratize and collectivize health in order to address the social determinants of health (Friel et al. 2021). But it also runs the risk of turning the demos into a body politic, subjected to the biopolitics of securitized health promotion. Critics call this biopolitical regime of governance the beginning of the "biologization of society" (Lobe 2021), in which health indices such as body temperature have become the deciding criteria for social participation.

4.2 Urban density as health concern

Problematization: "Urban density bears risks" (Tietz 2020). The mode of problematization in the second overarching narrative that we found constructs "density stress" (Adli 2020) as the decisive problem of urban health. "The drama currently unfolding in New York makes clear that the virus threatens first and foremost those inhabitants of metropolises who work, live and love in close proximity to each other" (Tietz 2020). Following this discourse, dense living conditions are conceived of as unsanitary and contagious hotbeds of germs and microbes. These result from a process of urbanization that forces humans into unnaturally dense environments (Fischhaber 2021). This narrative relies on a pathogenic understanding of disease that portrays density as the main factor determining the spread of pathogens such as viruses and other microbes. This problematization marks a break with the previous one. It is based on a different understanding of health and on the data from which new forms of public health and new modes of biopolitical control emerge.

Understandings of health: In contrast to the sociomedical paradigm in the first narrative, this second group of statements discusses public health predominantly as a feature of the nonhuman environment. "The pandemic clearly shows […] how much our health depends on the environmental conditions in which we live globally. Consistent climate protection and consistent environmental protection also protect health" (Schirrmeister 2021). This 'One Health' approach is defined as a "collaborative effort of multiple disciplines working locally, nationally, and globally, to attain optimal health for people, animals and our environment" (de Leeuw 2021: 27). It focusses on "increasing periods of heat and stressful weather extremes" (Woratschka 2021) and on dense urban milieus that foster contagion.

Modes of access: Access to this relation of humans to their environment, which is supposedly critical for public health in the second narrative, is to be secured by widening the net of sensors and systems of data collection. "Systems of pandemic preparedness, warning, structural changes" (Woratschka 2021) need to be developed to guarantee immediate, rapid, and at best automated access to environmental conditions. New forms of data aggregation are required to render visible the systemic interaction between health and urban ecologies. Correspondingly, urban public health professionals that 'are interested in data from Public Health institutions' and 'from private actors in the health provision such as hospitals', now also include the processing of "information about weather and climate" (Lesch & Simmank 2021). They strive for an encompassing sensing of health-related data and the near-real-time processing of these data to assess the environmental impact on health. The inclusion of data analytics and digital tools in epidemiological reasoning shifts public health towards an 'outbreak science'. An understanding of health as something to be factorized features strongly in arguments grouped under the narrative of density and environmental health. Epidemiological challenges of the environment may in this narrative be solved with data science, modelling, and mathematics.

Interventions: This problematization of urban density constructs a "field of possibilities" (Foucault 1982: 798) for interventions that seek to fix the problem of public health spatially via disentangling

density and creating salutogenic environments. Several statements in our corpus make a claim for more urban open space and more urban green and blue. "Cities could green up instead of being densified - and create space for housing, for manufacture, and cultural spaces, where offices and superfluous chain stores, which can comfortably be replaced online, will move out" (Matzig 2021). Numerous authors even call for a complete paradigm shift in urban planning. According to their arguments, the 'new urbanist' (UN-Habitat 2017) call for redensification of cities as a method of sustainable development has become a threat to urban health security with the pandemic (Köckler & Sieber 2020).

"So, when it comes to learning from hygienic modernity, it does not necessarily mean repeating its mistakes. Rather, the goal should be to design expansive urban landscapes in which residential and recreational value for the residents interact. Far too uncritically, the follower of higher density and the prophets of adding floors sang the song of stony places and densified cities. But how essential aerated and revegetated cities are for the wellbeing of its inhabitants, how important inner-city parks with lawns and trees are, will unlocked the next pandemic at latest. Until then, hopefully there is enough time to learn from modernity's' heritage" (Tietz 2020).

In this narrative, building resilient cities means reducing density by opening spaces through urban design and construction. Planners and architects claim to retrofit cities, to redefine necessary spacings between buildings, and to provide spacious floor plans for retail stores, offices, and public institutions. Additionally, hygiene protocols need to be integrated into the design of new urban quarters (see Friesecke 2020). Thus, urban design and construction (Jackson 2003) are presented as solutions to the urban problem of density.

Genealogy: This narrative draws on those of the late 18th century. Back then, environmental hygiene was the dominant medical paradigm. This "viewed the body as shaped by a far wider number of elements in the environment such as light, temperature, climate, wind, odour and 'miasmas'" (Bonneuil & Fressoz 2016: 37). At that time the term 'environment' referred in French as well as in English to "the immediate surroundings of a town" (Bonneuil & Fressoz 2016: 148). In his six-volume work, the German physician Johann Peter Frank (1792) calls for a "system of complete medical welfare" ('*System einer vollständigen medizinischen Polizey*'). Here, he heralded the importance of the interactions between the environment and the population: water, wastewater, soil, waste materials, air, housing and urban planning, hygiene, toxins, and air pollution. In the 19th century, the reduction of urban density was seen as a primary target to prevent illness and infections in cities. The guiding thought, as mentioned in the introduction, was the idea of 'miasmic airs', a concentration of risk factors such as bad air, dirty water, and above all, contaminated soil, from which infections such as cholera were thought to arise. Those 'bad airs' were believed to concentrate in dense urban milieus. "[A]lmost all cities in Europe were rebuilt according to the requirements of a hygienic city – ventilation, cleaning, irrigation" (Schümer 2020). In the 19th century, 'miasmic airs' were successfully mobilized as the driving force for urban renewal, even though by that time Robert Koch and other rising germ-theorists had demonstrated the lack of scientific support for the concept. "Sober medical history must state that the gigantic modernization, which, as in Hamburg or Florence, was accompanied by demolition of the poor quarters in the historic centre and massive real estate speculation, did not always happen in a rationally comprehensible manner" (Schümer 2020). Urban renovation in the name of public health, prominently the vast restructuring of the centre of Paris undertaken by Georges-Eugene Hausmann, was tied to public health as a specific form of biopolitical power that legitimized the expulsion of the urban poor, described as 'dangerous classes' (Ronneberger 1999), from their dense quarters in favour of a bourgeois city with middle-class citizens. This connection between hygiene and space can be followed into the Athens Charter and the modern cities it proposed (Gandy 2006).

Biopolitics: The current narrative of density as an urban health problem reactivates environmental conceptions of the 18th and 19th centuries. To address urban health predominantly as an environmental issue, as argued in our corpus, also implies a different mode of biopolitical governing through environmental design: the currently reactivated narrative of density as threat not only claims for de-densification facing future pandemics, but also as the solution for other urban nuisances such as noise, air pollution, and heat stress. De-densification figures as a key for both urban climate adaptation and health promotion here. Furthermore, the current narrative praises the salutogenic qualities of urban ecologies. It is the return to understandings of health from the 18th century that marks a rupture from regime of social hygiene bound to the first narrative

we detailed above. Problematizing density and heralding urban ecologies in contrast demand a biopolitical regime that relies on ideas of environmental hygiene. Environmental hygiene can be labelled as a kind of 'environmentality' (*environnementalité*) that is a "governmentality which will act on the milieu and systematically modify its variables" (Foucault 2008: 271; see also Lemke 2021). The 'milieu' functions as a "medium of government" (Lemke 2021: 122) by preventing bad circulations and enabling the flow of salutogenic elements. "Urban medicine had a new objective-controlling circulation. Not the circulation of individuals but of things and elements, mainly water and air" (Foucault 2000: 148). Here, "[b]iopolitics' last domain is, finally [. . .] control over relations between the human race, or human beings insofar as they are a species, insofar as they are living beings, and their environment, the milieu in which they live. This includes the direct effects of the geographical, climatic, or hydrographic environment: the problem, for instance, of swamps, and of epidemics linked to the existence of swamps throughout the first half of the nineteenth century […]. This is, essentially, the urban problem" (Foucault 2003: 245f).

City planning and administration "is still clinging to what it understands as Bauhaus modernism, as a loosened-up, car-friendly, 'healthy' city. The resource-consuming metropolis of long distances, whose maintenance and functionality overtax the city's budgets, further postpones the mix of urban functions, and continues to be built one industrial estate after the other into the last refuges of untouched landscape […]. In the distress of fears and prohibitions, the first families already see salvation in fleeing to the countryside. Where architects and planners have just taken sacred oaths to the Leipzig Charter, journals already ventilate the question of whether the city of short distances and density can really still be the ideal in an age in which proximity means the risk of contagion? Do we have to go back to the concepts of the 1920s, to the Bauhaus, to the Athens Charter?" (Guratzsch 2021).

The power effects of this new biopolitical regime that we call environmentality are deeply ambivalent. They are suitable to integrating a more-than-human perspective to human health and urban governance which is crucial to meeting the challenges that climate change and pandemics pose. But urban environmentality as a distinct mode of biopolitical governance also objectifies spatial determinants and risks neglecting social and structural conditions of health.

5 Governing urban health through space

A close reading of the German debate on the postpandemic city found two contrasting approaches to understanding public health and achieving it in and through the city. The first – 'social interaction' narrative deepens the dominant paradigm of the compact city and advocates access to and improvement of public health through interactions and social settings. The second 'de-densified ecologies' narrative marks an unexpected rupture, reactivating urban health discourses from the 18th century. A biopolitical mode of environmentality is advocated in this second narrative, which conceives the city once more as a natural habitat or milieu. Contrasting the currently dominant social setting approach, density is conceived as pathogenic (e.g. heat stress) and de-congestion as salutogenic (e.g. accessible green spaces). Urban design and retrofit inspired by Haussmann's Paris, the Charter of Athens, and Bauhaus modernism are seen as solutions and mark a rupture with the paradigm of the compact city. This clear bifurcation of the German discourse in media and planning into two contrasting narratives seems to differ from what we have seen in international debate. In its *Research Roadmap for the COVID-19 Recovery* the United Nations, for example, opts for a "well managed density" (UN 2020: 79) that prevents contagion despite relatively limited space in cities and thus combines biopolitical rationalities that emerge separatly in the German discourse.

Importantly, both narratives in the German discourse operate by spatializing health, and each does it in a rather distinct way. The 'social interaction' narrative draws attention to the erosion of social ties and relations, and isolation is seen as the root of the urban health issue. "Interventions are taken where people live, learn, work, shop etc. This is in accordance with the so-called settings approach and oriented at different levels (lifeworlds)" (Classen 2020: 9). Urban space is synonymous with the vernacular here, with lived everyday situations and the social life-world. Spatializing these ephemeral concepts (e.g. in the 'setting approach' currently heralded in public health) is one way of making them accessible to public health interventions. Health promotion organised "at the supermarket, in front of the school, at the drugstore [allows interventions] to address the people in their everyday situation" (Monecke 2021). The first narrative renders urban space as the 'lived' space of everyday interactions.

The second 'de-densified ecologies' narrative evokes a contrasting understanding of space. The city is considered as a built environment with either

detrimental health effects when dense, hot, crowded, and stressful) or beneficial ones such as access to green spaces and bike-lanes and their nudging towards an active lifestyle. This narrative emphasizes urban space as the three-dimensional built environment. A certain vitalization of space is apparent in this second approach. Here, urban environmentality operates through space by fixing the problem with urban design. It fetishizes promotion space as a remedy for public health issues. Positioning the built environment as the dominant factor in public health promotion in the city rearticulates a fundamental idea of the environment–body interdependence, once a ubiquitous belief in Western and non-Western cultures. In the Galenist humoral theory of the body, healthy and unhealthy flows and exposure to certain environments determined good or ill health. Advice on good health was often advice on the healthiest place to inhabit. "The porous and unstable physiology of the ancient body demanded a 'constant and detailed problematization' of the relationship with its surroundings" (Meloni 2018: 12). The problematization of the built environment in the debate on the postpandemic city draws on such a vitalist conception of space as an independent pathogenic or salutogenic influence.

The two narratives are united by the fact that they operate through space: through opening private life-worlds to health promotion via everyday lived spaces in the first narrative and through vitalizing the built environment in the second. This governing of health through space is an ambivalent approach. Both conceptions incorporate important contexts and both in their different ways help to promote a relational understanding of public health. Settings and interactions on the one hand and the embeddedness of human health in an interplay of nonhuman entanglements on the other both mirror the current debate in current geographies of health. But any attempt to solve social and environmental problems through spatial fixes always also runs the risk of what Bernd Belina has called a "false abstraction" (2008: 528). The rendering of public health into a problem of the urban may reduce social and environmental policies to retrofitting the built environment and as such depoliticize the issue in both the conflicting versions identified here. Focussing on the environment as a collection of determining factors entails the danger of remaining at that level of explanation. The constructed quality of most of those determining factors is then ignored. Conversely, singling out the everyday as the relevant arena of urban health may also neglect structural determinants of health and well-being. Empowering neighbourhoods and communities as a resource of bottom-up health provision can also have the effect of framing problems and solutions at that local level. Depoliticizing effects of such a 'governing through community' have been prominently identified (Rose 1996).

6 Conclusion

The current debate on the postpandemic city has drawn attention to the current public health discourse, underlying problematizations and shifting understandings of space, health, and the urban. The urban has historically often constituted a prime target for public health interventions. The postpandemic urban future may involve a strengthening and return of spatial strategies, but now in two distinct versions. The dense social fabric of the city is viewed as the precondition of interaction in one version, while open space, flows, and the avoidance of congestion are promoted as conditions of a healthy urban environment in a second version. Urban planning and politics tend to address these distinct problematizations spatially: retrofitting the city as a compact space of encounter in the first case and creating open spaces and green areas in the second. Such fetishization of space abstracts from the social and environmental conditions of urban health.

The experience of a worldwide pandemic has caused health and disease to increasingly be placed in a socio-ecological and relational framework in the scientific debate. "[T]here is a true forest of vocabulary in the health and human sciences for how things intersect – comorbidity, intersectionality, predisposition, syndemics, structural violence, allostatic load, biosocial, biocultural" (Fitzgerald et al. 2020: 9; see also de Leeuw 2022). All these current approaches emphasize a biosocial production of health and disease and the unequal spatial distribution of their conditions (Andrews 2019; Senanayake & King 2019).

Current understandings of space and urban health also present certain caveats concerning these general ideas as guiding principles for biopolitical intervention. Our analysis made apparent the two distinct narratives currently addressing urban health questions and discussed some of the effects each narrative entails. These insights can help to critically accompany urban planning. The importance of a nuanced empirical understanding of how place and space become part of and shape biopolitical governing in different ways has become clear from this analysis. Narratives about urban health may trigger

bottom-up approaches and a relational understanding of health and thus encourage democratic and ecologically just forms of biopolitics (La Puig de Bellacasa 2017, Sotiris 2020). But when seeking spatial answers for social problems, both narratives of urban health are prone to encouraging such false abstractions as a deterministic understanding of environmental effects and to neglecting important determinants underlying health.

References

Andrews GJ (2019) Health geographies II: The posthuman turn. *Progress in Human Geography* 43: 1109–1119. https://doi.org/10.1177/0309132518805812

Batty M (2020) The Coronavirus crisis: What will the post-pandemic city look like? *Environment and Planning B: Urban Analytics and City Science* 47: 547–552. https://doi.org/10.1177/2399808320926912

Belina B (2008) Geographische Ideologieproduktion – Kritik der Geographie als Geographie. *ACME: An International Journal for Critical Geographies* 7: 510–537.

Bonneuil C Fressoz J-B (2016) The shock of the Anthropocene: The earth, history, and us. London.

Braun B (2008). Thinking the city through SARS: Bodies, topologies, politics. Keil R, Ali HS (eds) *Networked disease*: 250–266. Oxford. https://doi.org/10.1002/9781444305012.ch15

Carpio-Pinedo J, Pozo Menéndez E, Lamíquiz Daudén FJ, Higueras García E (2021) When a city must be a tree: Rethinking the spatial approach to fighting epidemics based on the notion of 'intermediate confinement.' *URBAN DESIGN International* 26: 332–347. https://doi.org/10.1057/s41289-021-00160-y

Corburn J (2013) Healthy city planning. From neighbourhood to national health equity. London. https://doi.org/10.4324/9780203772249

Corburn, J (2021) Cities for life. How communities can recover from trauma and rebuild for health. Washington, D.C..

de Leeuw E (2021) One health(y) cities. *Cities & Health* 5: 26–31 https://doi.org/10.1080/23748834.2020.1801114

de Leeuw E (2022) Intersectionality and health: A glossary. *Epidemiol Community Health* 76: 206–208. https://doi.org/10.1136/jech-2021-217647

de Leeuw E, Simos J (eds) (2017) Healthy cities. The theory, policy, and practice of value-based urban planning. New York. https://doi.org/10.1007/978-1-4939-6694-3

Dillon M (2015) Biopolitics of security: A political analytic of finitude. London. https://doi.org/10.4324/9781315725017

Dye TDV, Muir E, Farovitch L, Siddiqi S, Sharma S (2020) Critical medical ecology and SARS-COV-2 in the urban environment: A pragmatic, dynamic approach to explaining and planning for research and practice. *Infectious Diseases of Poverty* 9. https://doi.org/10.1186/s40249-020-00694-3

Dzudzek I, Glasze G, Mattissek A (2020) Diskursanalyse als Methode der Humangeographie. Gebhardt H, Glaser R, Radtke U, Reuber P, Vött A (eds) *Geographie: Physische Geographie und Humangeographie*:175–185. Berlin.

Eckart WU (2007) Sozialhygiene, Sozialmedizin. Gerabek WE, Haage BD, Keil G, Wegner W (eds) *Enzyklopädie Medizingeschichte. Vol. 3, O-Z*: 1344–1346. Berlin.

Fitzgerald D, Ashcroft R, Hollin G, Karkazis K, King NB, Landecker H, Langlitz N, Lentzos F, Meyers T, Niewöhner J, Novas C, Pollock A, Rose N, Silverman C, Stevens H, Subramaniam B, Wahlberg A, Wilson EA (2020) Lockdown texts. *BioSocieties* 15: 470–499. https://doi.org/10.1057/s41292-020-00199-0

Foucault M (1982) The subject and power. *Critical Inquiry* 8: 777–795. https://doi.org/10.1086/448181

Foucault M (1984) Polemics, politics and problematizations. Rabinow P (ed) *The Foucault Reader*. New York.

Foucault M (1989) The archaeology of knowledge. London.

Foucault M (2000) The birth of social medicine. Faubion JD (ed) *Power*: 134–156). New York.

Foucault M (2001) *Fearless speech*. Semiotext(e). Los Angeles

Foucault M (2003) Society must be defended. Lectures at the Collège de France 1975-1976. London.

Foucault M (2008) *The birth of biopolitics: Lectures at the Collège de France, 1978-79*. Basingstoke.

Frank, JP (1792) *System einer vollständigen medizinischen Polizey*. Berlin.

Freudenberg N, Galea S, Vlahov D (2005) Beyond urban penalty and urban sprawl: Back to living conditions as the focus of urban health. *Journal of Community Health* 30: 1–11. https://doi.org/10.1007/s10900-004-6091-4

Friel S, Townsend B, Fisher M, Harris P, Freeman T, Baum F (2021) Power and the people's health. *Social Science & Medicine* 282: 114173. https://doi.org/10.1016/j.socscimed.2021.114173

Frumkin H (2021) COVID-19, the built environment, and health. *Environmental Health Perspectives* 129: 075001. https://doi.org/10.1289/ehp8888

Füller H (2016) Pandemic cities: Biopolitical effects of changing infection control in post-SARS Hong Kong. *The Geographical Journal* 182: 342–352. https://doi.org/10.1111/geoj.12179

Galea S, Vlahov D (2005) Urban Health: Evidence, challenges, and directions. *Annual Review of Public Health* 26: 341–365. https://doi.org/10.1146/annurev.publhealth.26.021304.144708

Gandy M (2006) The bacteriological city and its discontents. *Historical Geography* 34: 14–25. https://nebraskapressjournals.unl.edu/historical-geography-34/

Gusfield JR (1981) The culture of public problems: Drinking-driving and the symbolic order. Chicago

Jackson LE (2003) The relationship of urban design to human health and condition. *Landscape and Urban Planning* 64: 191–200. https://doi.org/10.1016/S0169-2046(02)00230-X

La Puig de Bellacasa M (2017) Matters of care: Speculative ethics in more than human worlds. Minneapolis. https://doi.org/10.1017/S2753906700002096

Laclau E (1990) New reflections on the revolutions of our time. New York.

Lazzarato M (2002) From biopower to biopolitics. *Warwick Journal of Philosophy* 13: 99–113.

Lemke T (2021) The government of things. Foucault and the new materialisms. New York. https://doi.org/10.18574/nyu/9781479808816.001.0001

Ludwig G (2019) Körperpolitiken und Demokratie. Sozialhygienische Wissensregime als Techniken der Demokratisierung in der Weimarer Republik. *Body Politics 7*: 11–75.

Martínez L, Short JR (2021) The pandemic city: Urban issues in the time of COVID-19. *Sustainability* 13: 3295. https://doi.org/10.3390/su13063295

McFarlane C (2021) Repopulating density: COVID-19 and the politics of urban value. *Urban Studies*. https://doi.org/10.1177/00420980211014810

McQueen DV, Kickbusch I, Potvin L, Pelikan JM, Balbo L, Abel T (2007) *Health and modernity. The role of theory in health promotion*. New York. https://doi.org/10.1007/978-0-387-37759-9

Meloni M (2018) A postgenomic body. *Body & Society* 24: 3–38. https://doi.org/10.1177/1357034X18785445

Meloni M (2021) The politics of environments before the environment: Biopolitics in the longue durée. *Studies in History and Philosophy of Science* 88: 334–344. https://doi.org/10.1016/j.shpsa.2021.06.011

Rebecchi A, Buffoli M, Dettori M, Appolloni L, Azara A, Castiglia P, D'Alessandro D, Capolongo S (2019) Walkable environments and healthy urban moves: Urban context features assessment framework experienced in Milan. *Sustainability* 11: 2778. https://doi.org/10.3390/su11102778

Ronneberger K (1999) Bio-Macht und Hygiene. Disziplinierung und Normalisierung im fordistischen Wohnungsbau. Prigge W (ed) *Ernst Neufert: Normierte Baukultur im 20. Jahrhundert:* 432–465. Frankfurt/Main.

Rose N (1996) The death of the social? Re-figuring the territory of government. *Economy and Society* 25: 327–356. https://doi.org/10.1080/03085149600000018

Rose N (2001) The politics of life itself. *Theory, Culture & Society* 18: 1–30. https://doi.org/10.1177/02632760122052020

Savaskan N, Wagner C (2021) Corona-Pandemie in Neukölln. Bloße Rückkehr zum Routinebetrieb wäre fatal. *Tagesspiegel* 10.05.2021. https://www.tagesspiegel.de/berlin/blosse-ruckkehr-zum-routinebetrieb-in-den-gesundheitsamtern-ware-fatal-4249237.html

Senanayake N, King B (2019) Health-environment futures: Complexity, uncertainty, and bodies. *Progress in Human Geography* 43: 711–728. https://doi.org/10.1177/0309132517743322

Sharifi A, Khavarian-Garmsir AR (2020) The COVID-19 pandemic: Impacts on cities and major lessons for urban planning, design, and management. *Science of The Total Environment 749*: 142391. https://doi.org/10.1016/j.scitotenv.2020.142391

Sotiris P (2020) Thinking beyond the lockdown: On the possibility of a democratic biopolitics. *Historical Materialism* 28: 3–38. https://doi.org/10.1163/1569206X-12342803

Stallybrass P, White A (1986) The Politics and Poetics of Transgression. Ithaca.

UN-Habitat (2017) New urban agenda: Habitat III: Quito 17-20 October 2016. https://habitat3.org/the-new-urban-agenda/

UN-Habitat (ed) (2021) Cities and pandemics: Towards a more just, green and healthy future. Nairobi. https://unhabitat.org/cities-and-pandemics-towards-a-more-just-green-and-healthy-future-0

UN (2020) UN research roadmap for the COVID-19 Recovery. Leveraging the power of science for a more equitable, resilient and sustainable future. https://www.un.org/en/coronavirus/communication-resources/un-research-roadmap-covid-19-recovery

Wilmer S, Žukauskaitė A (2016) *Resisting biopolitics: Philosophical, political, and performative strategies*. London and New York. https://doi.org/10.4324/9781315764955

Zhu D, Ye X, Li W, Ding R, He P (2021) Urban health advantage or urban health penalty? Urban-rural disparities in age trajectories of physiological health among Chinese middle-aged and older women and men. *Health & Place* 69: 1–7. https://doi.org/10.1016/j.healthplace.2021.102559

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dpa/AFP (2020) Vier Milliarden gegen Corona *Der Tagesspiegel* 06.09.2020*:* 2

Adli M (2020) Bauen wir uns Fluchtwege aus dem Stadtstress. *Der Tagesspiegel* 18.12.2020. https://www.tagesspiegel.de/berlin/75-visionen-fuer-berlin-folge-22-bauen-wir-uns-fluchtwege-aus-dem-stadtstress/26706864.html (Date: 14.09.2021)

AGGSE (Arbeitsgruppe Gesundheitsfördernde Gemeinde- und Stadtentwicklung) (ed) (2020) Empfehlungen für eine gesundheitsfördernde und nachhaltige Stadtentwicklung. https://difu.de/sites/default/files/archiv/projekte/aggse_thesen_2020-03-09.pdf (Date: 14.09.2021)

Braun S (2020) "Ohne Perspektive hält so was niemand lange durch" *Süddeutsche Zeitung* 28.03.2020. https://www.sueddeutsche.de/politik/coronavirus-ausgangsbeschraenkungen-stressforscher-interview-1.4859936 (Date: 21.09.2022)

Classen T (2020) Gesundheitsförderliche Stadtentwicklung. Zwischen Renaissance und Neuerfindung. *Informationen zur Raumentwicklung* 47: 4–17.

Fischhaber A (2021) "Wir müssen raus" *Süddeutsche Zeitung* 19.02.2021. https://www.sueddeutsche.de/panorama/pandemie-park-stadt-corona-virus-natur-1.5537037 (Date: 21.09.2022)

Friesecke F (2020) Stadtplanung und Raumentwicklung in Zeiten vor und nach Corona. *zfv Zeitschrift für Geodäsie, Geoinformation und Landmanagement* 145: 144–149. https://doi.org/10.12902/zfv-0303-2020

Girgert W (2020) Dichte ist unter Druck geraten. *Frankfurter Rundschau* 18.06.2020. https://www.fr.de/kultur/gesellschaft/coronakrise-dichte-unter-druck-geraten-13803001.html (Date: 12.10.2021)

Guratzsch D (2021) Der Stillstand. *Die Welt* 28.04.2021. https://www.welt.de/kultur/plus230625031/Corona-Stadtplanung-und-Baupolitik-Der-Stillstand.html. (Date: 29.09.2021)

Gutsmiedl C (2021) Ungleichheit macht krank. *taz, die tageszeitung* 20.05.2021. https://taz.de/Sozialarbeiter-ueber-Gesundheitszentren/!5768194/. (Date: 05.10.2021)

Henzler C (2021) Sind Gesundheitsämter und Testzentren vorbereitet? *Süddeutsche Zeitung* 03.07.2021. https://www.sueddeutsche.de/politik/corona-testzentren-gesundheitsaemter-1.5340795 (Date: 20.09.2022)

Janert J (2020) Tipps für die kalte Küche. *Frankfurter Allgemeine Zeitung* 10.12.2020. https://www.faz.net/aktuell/karriere-hochschule/unternehmen-foerdern-informellen-austausch-im-homeoffice-17096277/ueber-das-kantinenessen-laesst-17097673.html (Date: 20.09.2022)

Jolly S (2021) 75 Visionen für Berlin – Folge 52. Gesundheitstechnologien sparen Zeit und Geld. *Der Tagesspiegel* 06.10.2021. https://www.tagesspiegel.de/berlin/75-visionen-fuer-berlin-folge-52-gesundheitstechnologien-sparen-zeit-und-geld/27681612.html (Date: 05.10.2021)

Klapsa K (2020) In zwei Wochen wieder Land unter? *Die Welt* 23.04.2020. https://www.welt.de/politik/deutschland/article207451981/Gesundheitsaemter-Werden-in-zwei-Wochen-wieder-Land-unter-haben-Corona.html (Date: 12.10.2021)

Köckler H, Sieber R (2020) Die Stadt als gesunder Lebensort?! *Bundesgesundheitsblatt* 63: 928–935. https://doi.org/10.1007/s00103-020-03176-x

Latz C (2021) Was Berlin von Buenos Aires lernen kann. *Der Tagesspiegel* 12.08.2021. https://www.tagesspiegel.de/berlin/was-kann-berlin-von-buenos-aires-lernen-wir-mussten-den-oeffentlichen-verkehrsmitteln-vorrang-vor-den-autos-geben/27504404.html (Date: 12.10.2021)

Lesch H, Simmank J (2021) "Wir wollen verhindern, dass es überhaupt zu Pandemien kommt" *ZEIT-online* 01.09.2021. https://www.zeit.de/gesundheit/2021-08/who-hub-pandemic-epidemic-intelligence-chikwe-ihekweazu-direktor-berlin?utm_referrer=https%3A%2F%2F (Date: 15.09.2021)

Lobe A (2021) Zutritt nur für Gesunde. *taz, die tageszeitung* 03.02.2021. https://taz.de/Die-Gefahren-des-digitalen-Impfpasses/!5745031/ (Date: 05.10.2021)

Matzig G (2021) Wie wollen wir leben? *Süddeutsche Zeitung* 10.04.2021. https://www.sueddeutsche.de/kultur/staedtebau-stadt-finnland-estland-tunnel-insel-1.5257758 (Date: 20.09.2022)

Monecke N (2021) "Sich impfen zu lassen, ist keine rein rationale Abwägung" *ZEIT-online* 02.09.2021. https://www.zeit.de/zett/politik/2021-08/corona-impfung-einkommensschwache-migranten-gesundheitssystem-vertrauen-interview (Date: 12.10.2021)

Neckel S (2021) Social Distancing und Corona *taz, die tageszeitung* 09.04.2021. https://taz.de/Social-Distancing-und-Corona/!5759269/ (Date: 29.09.2021)

Paust-Lassen P (2020) Die Veränderung des Klimas hat direkte Auswirkungen auf die Gesundheit. *taz, die tageszeitung* 25.09.2020. https://taz.de/!5711950/ (Date: 05.10.2021)

Piorkowski D (2020) Wie verändert die Pandemie die Gesellschaft? *Der Tagesspiegel* 13.04.2020. https://www.tagesspiegel.de/wissen/wie-veraendert-die-pandemie-die-gesellschaft-die-corona-krise-spaltet-die-sozialen-milieus-neu/25734516.html (Date: 14.09.2021)

Rottmann O (2021) Smart City für alle. *Frankfurter Rundschau* 07.10.2021. https://www.fr.de/meinung/gastbeitraege/smart-city-fuer-alle-91038766.html (Date: 07.02.2022)

Schirrmeister B (2021) "Wir spielen auf Sieg". *taz, die tageszeitung* 08.05.2021. https://taz.de/Gruene-ueber-Gesundheit-in-Ballungsraeumen/!5765874/ (Date: 07.02.2022)

Schümer D (2020) Corona & Cholera: Die skandalisierte Krankheit. *Die Welt* 29.10.2020. https://www.welt.de/kultur/plus218819780/Corona-Cholera-Die-skandalisierte-Krankheit.html (Date: 05.10.2021)

Tietz J (2020) Distanz statt Dichte. Die Anfälligkeit einer dicht gebauten Stadt. *Der Tagesspiegel* 14.04.2020. https://www.tagesspiegel.de/kultur/distanz-statt-dichte-die-anfaelligkeit-einerdicht-gebautenstadt/25738862.html (Date: 29.09.2021)

Woratschka R (2021) Klimawandel macht krank: Klinikeinweisungen an heißen Tagen könnten sich versechsfachen. *Der Tagesspiegel* 09.06.2021. https://www.tagesspiegel.de/politik/klimawandel-macht-krank-klinikeinweisungen-an-heissen-tagen-koennten-sich-versechsfachen/27265256.html (Date: 07.02.2022)

Wernicke C (2021) "In einer Hochhaussiedlung in Köln-Chorweiler lebt man unter Corona gefährlicher" *Süddeutsche Zeitung* 03.05.2021. https://www.sueddeutsche.de/politik/coronavirus-impfung-migration-rechtsextreme-gesundheit-koeln-1.5282202 (Date: 20.09.2022)

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