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Governing Through Resilience? Exploring Flood Protection in Dresden, Germany

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Abstract: The paper argues for a governmentality perspective on risk-management politics and resilience-related governance. This perspective pays ample attention to conflicts and discursive ‘battles’ in which different truths and normative assessments, including specific rationalities, subjectivities and technologies of governing compete against. Up to now, the literature on governmentality and resilience has mainly been based on empirical research in the UK. This research highlights the growing importance of neoliberal forms of governing, including a shift in governing strategies towards activating and responsabilizing the public. This is to some extent in contrast to observations about dealing with flood risk on the river Weisseritz in Dresden. The paper reflects on possible avenues for further conceptual and empirical research on ‘governing through resilience’ in the context of flood protection in Germany. It is based on a brief conceptualization of ‘governmentality’ as introduced by Michel Foucault, a literature review, and selected observations from a case study on flood protection for the river Weisseritz in Dresden.

Keywords: neoliberal forms of governing; rationality; subjectivity; technology

1. Introduction

Having its roots in ecosystem thinking [1,2], ‘resilience’ has received a significant amount of attention in diverse debates in research and practice in recent years. These debates often focus on how to apply resilience to policy and planning in fields as diverse as flood risk management, urban development, responding to terrorism, and mega-projects like the Olympic Games (further references in [3]). Given this heterogeneity, some researchers point to the challenge of developing a generic as well as precise definition of resilience (e.g., [4]). In principle, we see the multiplicity of issues and perspectives as a sign of the liveliness of debates about resilience, thus distinguishing our own take on resilience from arguments that there could and perhaps even should be only one way to define, analyze and implement changes towards resilience.

From the perspective of constructivism, which we adopt in the following, the interesting point about the emerging resilience literature is not what ‘objective’ or ‘essentialist’ meanings can be assigned to this new key concept. Rather, as Christmann and Ibert [5] argue, “resilience” is, like “vulnerability”, subject to processes of social construction that vary, for instance, with regard to local context conditions [6]. Our paper argues that social constructions of various risks in society are associated with specific governing strategies and power relations, which can be analyzed by adopting a governmentality perspective. From this viewpoint, the increased use of ‘resilience’ is related to recent changes in governing risks in advanced liberal societies and to phenomena which—mainly with regard to the UK—have been described as components of neoliberal governmentality (e.g., [7,8]). Following the theoretical perspective of the governmentality studies, these changes can be characterized by the rationalities, subjectivities and technologies of governance to which they give rise.

A governmentality perspective focuses on the mechanisms of governing risks in advanced liberal societies and particularly on how power is exercised through different discursive constructions of political rationalities and related subjectivities and technologies. The emerging debate on resilience, from this perspective, is indicative of an ongoing shift in the ways in which risks are both constructed and dealt with in advanced liberal societies. However, this shift (which we will characterize in more detail later on) is far from being homogenous and clearly defined in specific contexts. Rather, governing risks can be associated with multiple, often conflicting rationalities, subjectivities, and technologies of governance. It is this multiplicity and ambiguity of governing strategies that we turn to in the following.

The argument of our paper is twofold and relates the social constructions described in the literature as characteristic of “governing through resilience” to debates around appropriate measures to deal with risk in a case of flood protection in Dresden (Germany). Our aim in making this connection is to point out that, although some of the discursive and governance shifts which have been described in the literature can be identified in this German case as well, the general movement towards ‘neoliberal’ modes of governance that are often associated with resilience politics, are not easy to observe in this case. This leads us to reflect on how strategies of governing risks through resilience can be appropriately addressed, taking into account their context factors.

The paper is structured as follows: *Section 2* clarifies how the elusive concept of governmentality originally introduced by Michel Foucault is used in this paper. *Section 3* relates the key concepts introduced in the theoretical section to the scientific literature on resilience. *Section 4* sketches out a

number of relevant observations relating to a case study of flood protection in Dresden [9–11] to illustrate how the ways of governing risks present in the case study may differ from other accounts on ‘governing through resilience’. *Section 5* concludes the paper by discussing implications of these explorative findings for further research on the ambiguities and heterogeneities associated with the discursive constructions of governing risks and their associated technologies of governance and power relations.

2. Conceptualizing Governmentality

The concept of governmentality was introduced by Foucault [12,13], who borrowed the neologism from Barthes [14]. Often, ‘governmentality’ is interpreted as a synthesis of government and mentality or government and rationality. Yet, Foucault does not endorse this interpretation and uses the word rather in the sense of ‘pertaining to government’. In this Foucauldian understanding, government not only comprises the institutional, administrative apparatus of a state but instead refers to all sorts of conduct, or more precisely to the conduct of conduct. “[G]overnment as the ‘conduct of conduct’ [...] encompasses not only how we exercise authority over others, or how we govern abstract entities such as states and populations, but also how we govern ourselves.” [15] Governmentality in this sense refers to a “complex form of power” ([12], p. 102) which relies on certain rationalities, subjectivities and technologies.

The notion of governmentality can be confusing because Foucault ([12], p. 102 f.) applied it first to denote a distinct form of exercising power (involving technologies of the self as dominant form of conduct), which he opposed to other, earlier forms such as sovereignty and discipline. Triantafillou takes up this line of thinking when he defines governmentality as “a set of historically specific constellations of problematizations, forms of knowledge and practices of government” ([16], p. 492) in advanced liberal societies.

In his later lectures, though, Foucault developed a much broader understanding of governmentality that refers to a generic historical-descriptive “analytics of government”. It “studies the practical conditions under which forms of statehood emerge, stabilize and change” ([14], p. 44) and more particularly “the close link between power relations and processes of subjectification” ([17], p. 191). It is in this sense that Foucault ([18], p. 252) speaks of governmentality as “a strategic field of power relations in their mobility, transformability, and reversibility” and distinguishes between different “modes of governmentality operating according to quite different principles” ([19], p. 173).

This paper adopts ‘governmentality’ as a generic historical-descriptive ‘analytics of government,’ which relies on multiple and (often) conflicting rationalities, subjectivities and technologies.

A rationality is “any form of thinking which strives to be relatively clear, systematic and explicit about aspects of ‘external’ or ‘internal’ existence, about how things are or how they ought to be” ([15], p. 18 f.). Or with regard to politics: “a way or system of thinking about the nature of the practice of government (who can govern; what governing is; what or who is governed), capable of making some form of that activity thinkable and practicable both to its practitioners and to those upon whom it was practiced” ([20], p. 3).

According to Rose and Miller ([21], p. 175), rationalities represent “changing discursive fields within which the exercise of power is conceptualized, the moral justifications for particular ways of

exercising power by diverse authorities [as well as] notions of the appropriate forms, objects and limits of politics.” Therefore it is important to raise the question of how relations of power are rationalized. “Asking it is the only way to avoid other institutions, with the same objectives and the same effects, from taking their stead” ([22], p. 325).

Governmentality studies direct attention to the “interplay of power and knowledge” ([23], p. 124, translation by the authors). “[A] political rationality is not pure, neutral knowledge [...], but an element of government itself which helps create a discursive field in which exercising power is ‘rational’” ([24], p. 55). The kind of power of which Foucault speaks is at the same time repressive and productive. “Because of its productive role in shaping meanings and identities, power is intrinsically linked to knowledge, and local forms of power-knowledge are imbedded in institutions, technologies [...]” ([25], p. 112). “[P]ower defines what gets to count as knowledge”, however: “[i]t is not just the social construction of rationality which is at issue here, it is also the fact that power defines physical, economic, social, and environmental reality itself” ([26], p. 155). In sum, power and knowledge are regarded as reciprocally constitutive (*cf.* [17], p. 191).

Hence, rationalities are understood as contingent constructs, several of which can be produced simultaneously; “the main problem when people try to rationalize something is [...] to discover which kind of rationality they are using” ([22], p. 299). From this perspective, the relevant question when analyzing policy and planning is not whether they are ‘rational’ or not, but rather what rationality they follow and which different rationalities underlie conflicting policies and planning approaches.

Political rationalities involve certain types of ‘problematization’. A problematization is the process of defining a phenomenon as a problem and of turning it into an object of government. For instance, different types of governmentality can either (1) foreground problems of “bureaucracy, rigidity and dependency formation” ([15], p. 238) as well as insufficient responsibility of the individuals in such disparate areas as education, health care and environmental protection or (2) they can be more geared toward social welfare and deal, e.g., with the problem of protecting the individual against the adverse effects of capitalism and non-regulated markets.

Any rationality of government constructs certain subjectivities. The example for which the construction of subjectivities has been most widely analyzed from a governmentality perspective is neoliberal rationality, which is often regarded as hegemonic in contemporary advanced liberal societies. From the viewpoint of neoliberalism, according to Foucault, it is asked “how the overall exercise of political power can be modeled on the principles of a market economy. So it is not a question of freeing an empty space, but of taking the formal principles of a market economy and referring and relating them to, of projecting them on to a general art of government” ([27], p. 131). It is an ongoing debate whether neoliberalism should be taken as an essentialist term or as a contingent construct [28]. At any rate it is obvious that neoliberalism is actualized heterogeneously in different places and at different times.

Neoliberal technologies of government are characterized by governing from a distance and by converting citizens and other sorts of non-state actors—the former *objects* of government—into *subjects* of government. This presupposes subjectivities of free and autonomous subjects who, however, use their freedom in a specific way, namely as responsible, active citizens who take care of themselves and of collective affairs. As each individual is supposed to be free to take decisions at his

or her discretion, “the consequences of the action are borne by the subject alone, who is also solely responsible for them. This strategy can be deployed in all sorts of areas” ([24], p. 59).

While such subjectivity is conveyed by manifold discourses, it is only through “technologies of the self” ([29], title) that it materializes and comes to be realized (*cf.* [15], p. 43 f.). Technologies of the self “permit individuals to effect [...] a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality” ([29], p. 18). The individual constructs itself “in accord with the ruling configuration of power/knowledge” ([30], p. 349), because the self is not a fixed but a constructed identity.

Technologies of power, for instance, dominant regimes of truth, interact with technologies of the self “to fix the ways in which people construct themselves, their conduct, and their relations to others” ([30], p. 353). These considerations highlight that technologies of the self are essential elements of governmentality. Hence, from a governmentality perspective, shifts in the modes of governance appear in a specific view: Instead of simply being interpreted as more inclusive and democratic forms of decision making (*cf.* e.g., [31], p. 375), they are also seen as based upon certain subjectivities and self-technologies that construct citizens as responsible for the achievement of collective interests.

Besides technologies of the self, there are other “technologies of government” ([15], p. 269), which refer to the ensemble of “means, mechanisms and instruments through which governing is accomplished” ([15], p. 269). These technologies are *practical expressions* of certain rationalities of government and can be as diverse as “forms of notation, ways of collecting, representing, storing and transporting information, forms of architecture and the division of space, kinds of quantitative and qualitative calculation [and] types of training” ([15], p. 269). The use of these technologies changes over time and is often connected to certain concepts (such as sustainability or resilience) by which specific technologies of government are mobilized and transformed.

Having sketched out the main concepts of our theoretical approach, it is one of these shifts of governing that we turn to in the following section. Drawing on findings from the scientific literature, we attempt to identify which rationalities, subjectivities and technologies of governing characterize resilience approaches and what changes in dealing with uncertainties and risks they give rise to. In doing so we treat the recent occurrence of the resilience debate as an explanandum—an indicator for ongoing shifts in politics and planning that can be critically examined from a constructivist social science perspective.

3. ‘Governing Through Resilience’: Rationalities, Subjectivities and Technologies of Governance

With respect to the overall aim of our paper, the scientific literature on resilience can be roughly divided into three categories: First, there is the literature that deals with what resilience is, how it is to be defined, understood and distinguished from other concepts; second, there are publications on the application of resilience concepts, exploring how the related ideas can and should be applied in order to deal with risk; third, we see studies that ask what political and social implications the application of resilience concepts might have and whether it is normatively desirable or problematic to apply them.

For our argument, we refer mainly to the first and third types of literature, since they deal explicitly with the question of what resilience means and what implications this has for the governance of diverse risks. In discussing the strands of this literature, our aim is not to provide a complete overview of the scientific resilience debate, but rather to focus on some aspects *through the lens of governmentality* that are relevant for our argument, in particular, which rationalities, subjectivities and technologies of governance are constructed, legitimated and postulated.

One major distinction running through large parts of the resilience literature is that between engineering and ecological (or evolutionary) resilience [2,32]. Engineering resilience posits that systems return to equilibrium after a disturbance, the degree of resilience of the system being measured by the speed of the return ([2], p. 300). Ecological (or evolutionary) resilience, on the other hand, rejects the idea of a single, stable equilibrium and acknowledges the possibility for change between equilibria. The implications of drawing on one or the other of these understandings of resilience are enormous. For instance, while the first often leads to claims for better post-disaster emergency planning with the focus on sudden and large events, the second is able to take into account gradual and cumulative changes and the possibility of systems to develop and adapt over time [2].

Despite these differences, with respect to underlying *problematizations* and *rationalities*, the two concepts also show important similarities. Being rooted in ecology and (eco-)systems thinking, both strands of research are based on a distinction between “a system” (society or parts of society) on the one hand and “threats to the system” which lie outside the system and put it at risk on the other. What is obscured and marginalized by this conceptualization is the question what kind of social structures, political negotiations and power relations are present within the system that put some individuals and social groups at more risk than others and which decide over the paths of “self-organization” [33] the systems take. A consequence of the supposedly neutral, natural-science based problematization of risks is that technical and managerial responses to threats for society are foregrounded, while mediating between social struggles and inequalities is marginalized [34]. As Shaw puts it (with reference to Cannon and Mueller-Mahn), resilience debates reflect “more traditional, top-down responses to dealing with ‘threats’ to security, and the dominance of managerial or technical solutions to problems based on disaster or risk reduction strategies. As one account notes, this approach to resilience is “in danger of a realignment towards interventions that subsume politics and economics into a neutral realm of ecosystem management, and which depoliticizes the causal processes inherent in putting people at risk” (Cannon and Mueller-Mahn, 2010, 633)” ([35], p. 309; see also [36] and, concerning differing understandings of what makes an environmental issue political, [37]).

With respect to modes of governance and *subjectivities* constructed in resilience-related policies (especially the question of which actors are constituted as able and responsible to deal with risks and how these actors are guided towards ‘appropriate’ risk-related behavior) studies on examples from the UK, in particular, have argued that the invocation of resilience is often indicative of a shift toward neoliberal modes of government and a re-ordering of the relations between the state, social groups and communities and individuals. In these studies, ‘resilience’ has been applied to a whole range of threats and social issues such as terrorism, disease pandemics, the impacts of military traumata, the financial crisis, and global warming (e.g., [2,7,38,39]).

Following the authors critically engaging with these transformations in dealing with risks, policies and planning guidelines related to resilience show two characteristics. Firstly, Duit *et al.* [34]

formulate the 'diversity hypothesis'. It claims that new threats to societies can be most effectively met by a growing diversity of "forms of public steering such as network governance, public-private partnerships, self-organization and stakeholder involvement" which result in a "more flexible and responsive governance process" ([34], p. 366). While these efforts to draw on the variety within society to effectively master external threats are particularly emphasized in the resilience literature, not all of these tendencies and ideas are new. Rather, "concepts such as decentralization, anti-hierarchy, deliberation, stakeholder participation, and self-regulation have long been core components in green political theory, as well as in more applied discussions on environmental policy and politics" ([34], p. 366). However, there also seem to be tendencies to develop new combinations of affect and control through "apparatuses of security" ([40], p. 24).

Closely related to the diversity hypothesis is a second observation: not only are 'new' actors and institutions involved, they are at the same time 'responsibilized' to minimize the negative effects of threats and crises and to provide for quick recovery after a crisis or a disaster ([39], p. 335; [41]). Thus, government complements or even substitutes attempts to prevent crisis and disaster through attempts to citizens (or: "the population") "fit" to deal with the impacts of possible crisis and disasters themselves [42]. These attempts are particularly pronounced in contexts of dwindling financial resources in the public sphere. For instance, Bulley investigated the functioning of the UK government's Community Resilience Programme, dealing with responses to disasters. However, this scheme worked primarily toward producing community and toward "forming identities and relationships that can be more efficiently managed and directed" ([43], p. 265).

Some analysts describe a withdrawal of state financial resources from risk measures. However, in general the subjectivities and responsibilities constructed in resilience discourses do not imply any reduction in the importance or influence of the state in dealing with risks. What does change, however, is how 'the state' and its various institutions interact: direct state measures targeting risk reduction decrease, while efforts to motivate individuals and groups to take action themselves are enhanced; as Chandler observed: "In discourses of resilience, there is a clear assumption that governments need to assume a more proactive engagement with society. This proactive engagement is understood to be preventive, not in the sense of preventing future disaster or catastrophe but in preventing the disruptive or destabilizing effects of such an event. In this sense, the key to security programs of resilience is the coping capacities of citizens, the ability of citizens to respond, or adapt, to security crises. The subject or agent of security thereby shifts from the state to society and to the individuals constitutive of it" ([7], p. 210). This is underpinned by the findings of Butler and Pidgeon, who examined shifts from policies of flood defense to flood risk management which entailed "redistributions of responsibility—including more emphasis on the responsibilities of private citizens" ([44], p. 533).

Increasing uncertainty as well as limited predictability and controllability through the existing forms of government are thus met by rationalities of empowerment (organized by the state) and a general tendency to shift the focus of policy and planning toward strengthening "the resilience" of local communities [45,46].

The studies on resilience cited fit smoothly into the general diagnoses of a neoliberalization of politics in the Foucauldian sense as outlined above, in which the state shifts the provision of security toward "society-based conceptions of distributed risk and reaction." ([8], p. 6).

Relating these observations from the scientific literature to the theoretical concepts explicated in the governmentality section of the paper, a combination of interrelated rationalities, subjectivities and technologies of governing can be summarized as characteristic of resilience-related policies, planning and modes of governance. With respect to *forms of knowledge production* and the *rationalities* and *problematizations* constituted, a major underlying theme of the resilience literature is its reliance on objective, natural-science based models and ways of thinking, to explain both the emergence of risks for societies as well as ways to adequately deal with them. At the same time, knowledge is also constituted about actors and their desirable behavior in dealing with adversities which relies heavily on state institutions guiding individuals and social groups from a distance (e.g., through incentives and information on ‘appropriate’ behavior).

In other words: *technologies of ‘governing through resilience’* are characterized by two interrelated forms of conduct: on the level of actual measures propagated as important and appropriate in dealing with risks, technical means based on natural-science knowledge are foregrounded. In terms of conducting individuals and social groups, techniques of responsabilization and activation are applied, which shift the responsibility for preparedness away from the state and toward the population (although the state retains an active role in the constitution of the knowledge necessary to attain the desired behaviors).

These relations between rationalities, subjectivities and technologies of governing produce a number of *power effects*, the most important first, a general shift of responsibilities and liability for dealing with risk and disaster preparedness toward individuals and communities; second, the concealment of social causes for risk exposure and vulnerabilities of individuals and social groups such as discrimination, conflicts and uneven power relations; and, third, the depoliticization of debates on appropriate risk reduction measures, marginalization in particular ways of dealing with risks that are not grounded in natural-science based knowledge orders.

The application of a governmentality perspective to some of the main strands of discussion within the debate on resilience planning and politics facilitates critical reflection on possible shifts in governing modern societies and in the exercise of power. Such an analysis, which interprets the resilience debate as both indicative of and giving rise to major social shifts of dealing with uncertainties and risks, however, is in danger of overemphasizing theoretical rigidity and of exploiting empirical evidence for the sake of theoretical abstractions such as ‘neoliberal governmentality’. It thus easily overlooks that actual politics and planning procedures can differ greatly between specific national and local contexts. Moreover, in many instances conflicts and struggles arise over appropriate actions. Therefore, scholars of governmentality need to be careful not to miss potentially heterogeneous and contradictory outcomes in individual cases.

In the following, we shall examine the findings of an empirical example of flood protection in Dresden (Germany) through the lens of governmentality. In so doing, we wish to show that planning processes may be characterized by social, material and political dynamics, including conflicts and struggles, that are often obscured in the resilience literature. We chose the river Weisseritz as an example because a major flood event in the year 2002 gave rise to fundamental dislocation in the discourses and practices of dealing with flood risk.

4. Flood Protection for the River Weisseritz in Dresden

The Weisseritz catchment is a left, short to medium-length tributary of the river Elbe in the Dresden region. The extreme flood event on the river Weisseritz in Dresden happened in August 2002 in combination with the Elbe flood. Presumably, these events had dislocatory effects on established discourses in Dresden and beyond. Exploring such events and related social constructions highlights the political character of discursive fixations.

Re-interpreting findings from a case study conducted in Dresden from 2004 to 2009 with regard to flood protection on the river Weisseritz [9–11], we seek to show that this case of flood protection is relevant for studies about “governing through resilience”, but somewhat in contrast to the existing literature on resilience from a governmentality perspective. We elaborate on this through two observations against background information about the case in question:

- Technical knowledge mainly based on the natural sciences and civil engineering played a dominant role in flood protection after the flood event in August 2002. However, this rationality was also challenged—at least during a certain period after the flood disaster in August 2002—by alternative problematizations, most prominently by arguments opting for more “natural” solutions than those provided by engineering techniques;
- Non-state actors were included in disaster recovery after the flood event in August 2002, but it is difficult to consider these processes of inclusion as part of neoliberal strategies of responsabilization. Therefore, we suggest that there are idiosyncratic modes of governing at work in flood protection for the river Weisseritz which require further investigation.

In August 2002, people in the Dresden region experienced a complex situation of multiple, partly overlapping, extreme flood events (for a summary see [47]). Local government posits that people (including politicians, officials, and so forth) were highly surprised at the intensity and negative consequences of these events—against the background of a tradition of flood protection in general and for the river Elbe in Dresden in particular. Local government estimates that damage in the City of Dresden amounted to approximately one billion euros [47]. The population in the region were especially surprised by the extreme flood event on the river Weisseritz (the ‘Weisseritz flood’). This is due, for instance, to the extreme difference between the mean value of the water discharge of the Weisseritz in summer (e.g., sometimes only 1.0 m³/s discharge) and the discharge on Monday/Tuesday, 12th/13th of August 2002 (over 400 m³/s at some gauges in Dresden). The Weisseritz flood inundated large parts of the City of Dresden (e.g., the main station, the city center and the ‘Zwinger’). Statistical analysis of the Weisseritz flood showed that the local maximum discharge can be classified as a 1-in- 500-years flood event. The flood developed within only a few hours (‘rapid onset’, ‘flash flood’). It exceeded by far established flood protection systems in many places and resulted in one fatality as well as in so far unknown damage to private and public property. In the aftermath of the Weisseritz flood, local officials began to characterize the Weisseritz as “the most dangerous river” of Dresden.

The Weisseritz flood was followed by intensive and heated debate about changing the relations between “the city”, “the river”, “citizens”, “nature”, “safety”, and so forth. Although not all voices in

these debates can be reported here, the following points seem to be of particular relevance with respect to the rationalities involved in disaster recovery:

Various actors (e.g., state officials, local politicians, citizens, representatives of local business organizations, but also researchers) pointed to the historical social, economic and ecological neglect of the Weisseritz area in the City of Dresden after German reunification and the importance of this area for “defending” the city center against floods of the “dangerous” river Weisseritz. They stressed that, before the flood event in 2002, the Free State of Saxony had also neglected the Weisseritz area in terms of investment technical flood protection. These actors argued for radically increasing safety standards through technical measures concerning the existing riverbed (e.g., flood walls, increasing the discharge capacity of the river bed and of bridges in Dresden). At the core of this argumentation were technical measures with a design level that matches—at least—the water level of the Weisseritz flood in 2002. In the context of these discussions, the Free State of Saxony and the City of Dresden mainly considered technical knowledge to improve the discharge capacity of the river Weisseritz (e.g., study of a professor for civil engineering in Hamburg with regard to a specific “weak point” of the riverbed in Dresden). Within this strand of discourse, problems in dealing with uncertainty and extreme floods were constructed step by step as solvable public expenditure and investment problems based on expertise from the natural sciences and civil engineering.

However, during disaster recovery, this first set of arguments was challenged by opposing arguments that saw the cause of the disastrous course of the flood event not mainly in external ‘natural’ factors of flood hazards and the neglect of the Weisseritz river in terms of too limited investment in technical flood protection, but rather interpreted it as evidence for basic shortcomings of and limits to ‘engineering solutions’ in dealing with flood risk and thus that this risk was man-made. Critics of an engineering approach to flood protection for the river Weisseritz even argued that reusing the ‘old’ riverbed¹ of the Weisseritz as its ‘new’ and ‘naturalized’ one in the process of disaster recovery would be necessary to deal with extreme flood events and high uncertainty of flood risk in the future.

In retrospect, it is difficult to tell exactly when the discussions about flood protection for the river Weisseritz ‘streamlined’ into *one* discussion about increasing safety standards mainly through technical measures. The Free State of Saxony and the City of Dresden agreed to jointly realize and finance a safety standard of a 1-in- 500-years event through measures that is consistent with the local maximum discharge of the event in August 2002 (taking further changes in the catchment-related flood risk management into account, for instance, changes in managing the reservoirs of the catchment). This safety standard is well above the average safety standard of 1-in-a-100-years event in Germany and in the Free State of Saxony in particular. Local officials continued to describe the river Weisseritz as “the most dangerous river” of the City of Dresden (e.g., [47]). However, the full implications of this “dangerousness” for dealing with flood risk are no longer to the fore in political discussions.

¹ The ‘old’ (‘original’”, ‘natural’) riverbed of the Weisseritz was abandoned during the process of industrialization and urbanization of Dresden at the end of the 19th Century. Some parts of the original riverbed were first industrialized and then transformed into public green spaces. Other stretches are now covered by a four-lane arterial road, railway tracks, a train station and a hallmark heritage building (the Yenidze, a former cigarette factory with the appearance of a mosque).

The political events following the floods in Dresden in August 2002 also constitute an interesting case because they allow identification of certain modes of governmentality manifest at various levels of policy making. In the case of Dresden, the political outcome can be fully understood only if one takes into account the entanglement of municipal and state politics. Furthermore, people representing ‘civil society’, representatives from business organizations, and also researchers were involved in discussions about improving flood protection for the river Weisseritz in Dresden. However, given the existing evidence about the case, it is difficult to interpret social processes of disaster recovery after the flood event in August 2002 as processes of ‘responsibilization’ in line with the existing literature on ‘governing through resilience’.

It is important to keep in mind that the river Weisseritz is a ‘main order’ river and, therefore, primarily in the formal responsibility of the Free State of Saxony. The Free State (including state agencies) and local government (including administration) continuously played important roles in developing new solutions for flood protection. For instance, the Free State of Saxony developed new procedures for deciding about the priority of technical flood protection measures. The City of Dresden formulated a strategic flood prevention plan (or concept) (“Plan Hochwasservorsorge Dresden”) and implemented a complex bundle of technical measures in co-operation with state authorities.

Especially with regard to the Weisseritz flood, the Free State of Saxony and the City of Dresden claimed early responsibility for continuing to deal with flood risk in the future (despite being in the throes of recovering from a ‘flood disaster’). The Free State was often represented by members of the Dam Authority. The City of Dresden was represented by the city council and various departments within local administration (in particular, the Office for Environmental Protection which worked early on in close cooperation with the dam authority to specify and implement technical measures). These processes, we hypothesize, are characterized by some changes compared to the pre-event situation (city councilors as subjects to “defend” the people in the Weisseritz area and to “defend the city center”, local officials as “becoming” competent partners of the Free State of Saxony). Having in mind that both city and state governments are large and complex organizations, it is obvious that there were also other voices advocating different approaches. It would be promising to analyze in greater depth how alliances between certain city and state representatives were forged, how these coalitions were gradually enlarged to include additional claims, and how opposing discourses were marginalized.

Officials from the Free State and local government and administration also referred to future uncertainties of flood risk and undesired consequences of an approach dominated by technical measures, for instance, undesired consequences for flood awareness and the preparedness of private actors. Critics of a ‘purely’ engineering approach to flood protection for the river Weisseritz could also be found in specific departments of local government and administration (e.g., some organizational units of the spatial planning department, related consultants specialized in spatial planning and integrated area development), among representatives from ‘civil society’ and research organizations.

However, voices critical of an ‘engineering approach’ to flood protection were marginalized step by step in the years following the flood disaster for a variety of reasons (e.g., limited political acceptability within the city council, also with regard to justifying the significant budgetary consequences of producing safety for the river Weisseritz, established practices of cooperation between the Free State of Saxony and local government, the ongoing, visible technical work on the Weisseritz, new private investment—both in terms of new housing and business sites—in flood-prone areas).

The case study on flood protection for the river Weisseritz shows some evidence of initiative to enhance the responsibility of citizens and other non-state actors to prepare for future flood events. For instance, a partnership of research organizations, municipalities within the river catchment (including the City of Dresden), state authorities, and representatives of civil society produced documents summarizing information about appropriate civic actions to prepare for flood risk on the river Weisseritz. However, within the limits of the existing case study, we suggest this does not count as sufficient evidence to specify what particular strategy of “governing through resilience” was at work here.

5. Conclusions and Outlook

The paper has sought to corroborate the merits of a governmentality perspective on risk-management politics and resilience-related governance. The potential of such a perspective lies in its capacity to elucidate the implications of policy shifts for the ways in which risks are socially constructed and problematized and on how power relations are constituted between ‘new’ and ‘old’ actors. Furthermore, a governmentality perspective focuses attention on conflicts and discursive ‘battles’ in which different truths and normative assessments, including specific rationalities, subjectivities and technologies of governing compete. The case study shows that governmentality research needs to take the multiplicity of rationalities, subjectivities, and technologies of governance into consideration that are struggling for hegemony in a specific field and which are evolving dynamically over time.

The existing literature on the political implications of adapting resilience concepts and related modes of governing is mainly based on empirical research in the UK. Notwithstanding their diversity and polyphony, many of these studies attest to the growing importance of neoliberal forms of governing, including a shift in governing strategies toward activating and responsabilizing the public. This is in contrast to our observations in the Weisseritz case, which indicate that other than neoliberal modes of governing are at work here. In particular, these observations indicate that, although there are many types of state as well as non-state actors involved in dealing with future flood hazards along the river Weisseritz, the fact that these non-state actors are included in decision-making processes can hardly be considered part of neoliberal responsabilization strategies. With respect to conflicting problematizations, the Weisseritz case showed that the natural-science based rationality of technical flood protection played an important role here. However, it was challenged—at least during a certain period after the flood disaster in August 2002—by alternative problematizations, most prominently by arguments opting for more ‘natural’ solutions than provided by engineering techniques.

The empirical analysis presented above is very limited in terms of scope and detail. However, our intention has not been to present an in-depth case study using a governmentality perspective but to use existing data about the Weisseritz case to illustrate the areas in which a governmentality perspective could aid in changing state-citizen-nature relations with regard to resilience. Against this background, we encourage broad empirical investigations into the changing modes of governmentality that are brought about by the growing salience of the resilience notion in the context of flood risk management. In such future studies, different interests and context-specific power constellations ought to be considered. Applying Foucault’s idea of an analytics of power, groups of questions such as the following could be addressed: (1) What are the most immediate power relations operating in specific cases, how do they operate and to what forms of knowledge (rationalities, problematizations) are they

connected? What views materialize in political decisions and ‘concrete’ material structures, and which are excluded and marginalized? (2) What path dependencies show up in the exercise of power and the rationalities accepted as true in specific contexts? How are discursive battles at a certain moment of time—such as the aftermath of the 2002 Weisseritz flooding—connected to former debates? What continuities, disruptions and evolutionary changes can be observed? (3) What context factors play a role for in constituting modes of governing risks and uncertainties, what role can be assigned in particular to state institutions such as planning authorities and their established logics and rationalities? What rationalities of governing are sedimented in existing legal regulations and planning routines and how are they challenged locally by ‘counter-hegemonic’ narratives and practices? (4) How do the physical and material conditions of the case in question impact the solutions put forward as well as how planning is organized and power exercised? How are material conditions discursively framed and what problematizations are derived from these framings, e.g., with regard to dependencies between upstream and downstream residents?

Such context-specific analysis could also include investigation on multiple institutional “levels” of flood protection (for instance, covering practices and practical expressions of local government as well as the *Länder*, i.e., the states of the German Federal Republic). Such a research endeavor could also embark on a historical analysis of rationalities, subjectivities and technologies involved in governing risks. A historical account would be especially well suited to foster an understanding of resilience that does not rely on abstract concepts of system thinking, but on specific accounts of how rationalities, subjectivities, and technologies are socially constructed over years of dealing with threats like those that arise in the context of flood hazards in the City of Dresden.

Author Contributions

The article was written jointly by the three authors.

Conflicts of Interest

The authors declare no conflict of interest.

References

1. Brand, Fridolin S., and Kurt Jax. *Focusing the Meaning(s) of Resilience: Resilience as a Descriptive Concept and a Boundary Object*. *Ecology and Society* 12 (2007): article 23. <http://www.ecologyandsociety.org/vol12/iss1/art23/>.
2. Davoudi, Simin. "Resilience: A bridging concept or a dead end?" *Planning Theory & Practice* 13 (2012): 299–333.
3. Hutter, Gérard, Christian Kuhlicke, Thomas Glade, and Carsten Felgentreff. "Natural hazards and resilience: Exploring institutional and organizational dimensions of social resilience." *Natural Hazards* 67 (2013): 1–6.
4. Müller, Bernhard. "Urban and regional resilience: A new catchword or a consistent concept for research and practice?" In *Urban Regional Resilience*. Edited by Bernhard Müller. Berlin, Heidelberg: Springer, 2011, 1–13.

5. Christmann, Gabriela B., and Oliver Ibert. "Vulnerability and Resilience in a Socio-Spatial Perspective." *Raumforschung und Raumordnung* 70 (2012): 259–72.
6. Christmann, Gabriela, Karsten Balgar, and Nicole Mahlkow. "Local Constructions of Vulnerability and Resilience in the Context of Climate Change. A Comparison of Lübeck and Rostock." *Social Sciences* 3 (2014): 142–59.
7. Chandler, David. "Resilience and the autotelic subject: Toward a critique of the societalization of security." *International Political Sociology* 7 (2013): 210–26.
8. Welsh, Marc. "Resilience and responsibility: governing uncertainty in a complex world." *The Geographical Journal* 180 (2013): 15–26.
9. Hutter, Gérard, and Jochen Schanze. "Learning how to deal with uncertainty of flood risk in long-term planning." *International Journal of River Basin Management* 6 (2008): 175–84.
10. Hutter, Gérard, and Christian Kuhlicke. "Resilience, talk and action: exploring the meanings of resilience in the context of planning and institutions." *Planning Practice and Research* 28 (2013): 294–306.
11. Hutter, Gérard. "Strategic Planning for Long-Term Flood Risk Management - Some Suggestions for Learning How to Make Strategy at Regional and Local Level." *International Planning Studies* 12 (2007): 273–89.
12. Foucault, Michel. "Governmentality." In *The Foucault Effect. Studies in Governmentality*. Edited by Graham Burchell, Colin Gordon and Peter Miller. London: Harvester Wheatsheaf, 1991 [1978], 87–104.
13. Foucault, Michel. "Governmentality." *Ideology & Consciousness* 5 (1979): 5–21.
14. Lemke, Thomas. "An indigestible meal? Foucault, governmentality and state theory." *Distinktion: Scandinavian Journal of Social Theory* 8 (2007): 43–64.
15. Dean, Mitchell. *Governmentality*, 2nd ed. London: Sage, 2010.
16. Triantafillou, Peter. "Addressing network governance through the concepts of governmentality and normalization." *Administrative Theory & Praxis* 26 (2004): 489–508.
17. Lemke, Thomas. "'The Birth of Bio-Politics' – Michel Foucault's lecture at the Collège de France on neoliberal governmentality." *Economy & Society* 30 (2001): 190–207.
18. Foucault, Michel. "Lecture of 17 February 1982." In *The Hermeneutics of the Subject. Lectures at the Collège de France, 1981-82*. Edited by Frédéric Gros. Translated by Graham Burchell. New York: Picador, 2005 [1982], 247–69.
19. Fletcher, Robert. "Neoliberal environmentalism: Towards a poststructuralist political ecology of the conservation debate." *Conservation & Society* 8 (2010): 171–81.
20. Gordon, Colin. "Governmental Rationality: An Introduction." In *The Foucault Effect. Studies in Governmentality*. Edited by Graham Burchell, Colin Gordon and Peter Miller. London: Harvester Wheatsheaf, 1984, 1–51.
21. Rose, Nikolas, and Peter Miller. "Political power beyond the state: Problematics of government." *The British Journal of Sociology* 43 (1992): 173–205.
22. Foucault, Michel. "'Omnes et Singulatim': Toward a critique of political reason." In *Power. Essential works of Foucault 1954-1984*. Edited by James D. Faubion. Harmondsworth: Penguin, 1994 [1979], 298–325.

23. Foucault, Michel. *Sexualität und Wahrheit: Der Wille zum Wissen*. Frankfurt: Suhrkamp, 1983 [1976].
24. Lemke, Thomas. "Foucault, Governmentality, and Critique." *Rethinking Marxism* 14 (2002): 49–64.
25. Torfing, Jacob. "Power and discourse: Towards an anti-foundationalist concept of power." In *The SAGE Handbook of Power*. Edited by Stewart R. Clegg and Mark Haugaard. Los Angeles: Sage, 2009, 108–24.
26. Flyvbjerg, Bent. *Making Social Science Matter: Why Social Inquiry Fails and How It Can Succeed Again*. Cambridge: Cambridge University Press, 2001.
27. Foucault, Michel. "Lecture of 14 February 1979." In *Michel Foucault. The Birth of Biopolitics. Lectures at the Collège de France, 1978-79*. Edited by Michel Senellart. Translated by Graham Burchell. Houndmills, Basingstoke: Palgrave Macmillan, 2008 [1979], 129–57.
28. Peck, Jamie. "Explaining (with) Neoliberalism." *Territory, Politics, Governance* 1 (2013): 132–57.
29. Foucault, Michel. "Technologies of the self." In *Technologies of the Self: A Seminar with Michel Foucault*. Edited by Luther H. Martin, Huck Gutman and Patrick H. Hutton. Amherst: The University of Massachusetts Press, 1988, 16–49.
30. Bevir, Mark. "Foucault, Power, and Institutions." *Political Studies* 47 (1999): 345–59.
31. Fürst, Dietrich. "Regional Governance – ein neues Paradigma der Regionalwissenschaften?" *RuR* 59 (2001): 370–80.
32. Holling, Crawford S. "Resilience and stability of ecological systems." *Annual Review of Ecology and Systematics* 4 (1973): 1–23.
33. Berkes, Fikret, and Carl Folke. *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. New York: Cambridge University Press, 1998.
34. Duit, Andreas, Victor Galaz, Katarina Eckerberg and Jonas Ebbesson. "Governance, complexity, and resilience. Introduction." *Global Environmental Change - Human and Policy Dimensions* 20 (2010): 363–68.
35. Shaw, Keith. "'Reframing' resilience: Challenges for planning theory and practice." *Planning Theory & Practice* 13 (2012): 308–12.
36. Cannon, Terry, and Detlef Müller-Mahn. "Vulnerability, Resilience and Development Discourses in Context of Climate Change." *Natural Hazards* 55 (2010): 621–35.
37. Donaldson, Andrew, Stuart Lane, Neil Ward and Sarah Whatmore. "Overflowing with issues: following the political trajectories of flooding." *Environment and Planning C: Government and Policy* 31 (2013): 603–18.
38. O'Malley, Pat. "Resilient subjects: uncertainty, warfare and liberalism." *Economy and Society* 39 (2010): 488–509.
39. Coaffee, Jon. "Protecting Vulnerable Cities: the UK's Resilience Response to Defending Everyday Urban Infrastructure." *International Affairs* 86 (2010): 939–54.
40. Anderson, Ben, and Peter Adey. "Governing events and life: 'Emergency' in UK Civil Contingencies." *Political Geography* 31 (2012): 24–33.
41. Oels, Angela. "Rendering climate change governable by risk: From probability to contingency." *Geoforum* 45 (2013): 17–29.

42. Zebrowski, Christopher. "Governing the Network Society: A Biopolitical Critique of Resilience." *3* (2009): 1–38.
43. Bulley, Dan. "Producing and Governing Community (through) Resilience." *Politics* 33 (2013): 265–75.
44. Butler, Catherine, and Nick Pidgeon. "From 'flood defence' to 'flood risk management': exploring governance, responsibility, and blame." *Environment and Planning C: Government and Policy* 29 (2011): 533–47.
45. Oels, Angela. "Die Gouvernementalität der internationalen Klimapolitik: Biomacht oder fortgeschrittenes liberales Regieren?" In *Der Klimawandel: Sozialwissenschaftliche Perspektiven*. By Martin Voss. Wiesbaden: VS-Verlag für Sozialwissenschaften, 2010, 171–86.
46. McEvoy, Darryn, Hartmut Fünfgeld, and Karyn Bosomworth. "Resilience and Climate Change Adaptation: The Importance of Framing." *Planning Practice & Research* 28 (2013): 280–93.
47. City of Dresden. *Umweltbericht 2012: Dresden – 10 Jahre nach den Hochwassern 2002*. Dresden: Landeshauptstadt Dresden – Die Oberbürgermeisterin, 2012.

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