

Article

Shock and Conflict in Social-Ecological Systems: Implications for Environmental Governance

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Abstract: In this paper, we present a framework for the analysis of shock and conflict in social-ecological systems and investigate the implications of this perspective for the understanding of environmental governance, particularly its evolutionary patterns and drivers. We dwell on the distinction between shock and conflict. In mapping the relation between shock and conflict, we invoke a different potentiality for altering rigidity and flexibility in governance; different possibilities for recall, revival and trauma; and different pathways for restructuring the relation between governance, community and environment. Shock and conflict can be both productive and eroding, and for each, one can observe that productivity can be positive or negative. These different effects in governance can be analyzed in terms of object and subject creation, path creation and in terms of the dependencies recognized by evolutionary governance theory: path, inter-, goal and material dependencies. Thus, shock and conflict are mapped in their potential consequences to not only shift a path of governance, but also to transform the pattern of self-transformation in such path. Finally, we reflect on what this means for the interpretation of adaptive governance of social-ecological systems.

Keywords: shock; conflict; social-ecological systems; governance; adaptation



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1. Introduction

Environmental governance is, to a large extent, avoiding shocks to the social-ecological system and cleaning up the mess of previous shocks. In this paper, we build on insights gained in the resilience school of thinking [1–8], and more broadly, the social-ecological perspective on environmental governance [9–12], to re-evaluate the importance of shocks and the ways to deal with them. We explore the relation with conflict in governance as a social phenomenon that is often related to shock, albeit in different ways, as we will show. Both shock and conflict influence governance paths, the possibilities for adaptation and transitions of society and its governance. Hence, these concepts require attention in the analysis of social-ecological systems and environmental governance. Such analysis helps to refine our understanding of the conditions under which shocks and/or conflicts are likely to lead to critical transitions or bifurcations in the relevant social-ecological systems.

In our conceptualization of shocks, we are cautious with interpretations of social-ecological systems which remain close to ecology, and which directly import concepts related to shocks, such as tipping points, equilibrium and collapse [13–16]. The social world cannot be reduced to the mechanics of the natural world, while the interplay between social and ecological systems deserves more attention than many social scientists devote to it.

For our reinterpretation of the importance of shocks for environmental governance, we draw on co-evolutionary perspectives on governance [17–21], which make it easier

to conceptualize both the ramifications of a particular shock to the system as well as the difficulties of deliberately choosing for a particular path of adaptation or transformation. We do not assume that perfect steering of social-ecological systems is possible, nor do we assume perfect prediction of its behaviour, yet we do follow co-evolutionary theory in its arguments for continuous observation, strategizing and coordination, so the always-limited steering options are recognized and utilized [19,22–24].

In our analysis of shocks and their effects, we include a discussion of environmental conflict, as we argue, in line with [25,26], that the effects of shocks in social-ecological systems often play out along the fault lines of conflicts. To that end, we compare, in a general yet systematic way, shock and conflict. After this comparison, we re-analyze social-ecological shocks in their consequences for evolving environmental governance.

2. Shock and Conflict

Shock is a systemic concept referring to disturbances in the operation of various types of systems. Although ecosystems might collapse, we are not convinced that social-ecological systems collapse. Even failed states retain some form of social organization, some form of relation with their physical environment [27]. Social systems can be disrupted, however, and transformed in a manner desired by nobody before the disruption. One can speak of shocks here when the social system has no response to a particular disruption, or, in other words, when coordination breaks down and alternative forms of coordination cannot be identified from within the system.

The shock to the social system can be triggered from within, or from the outside. Outside shocks can come from a different social system or from the material environment [28]. If a social system is in shock for a while, its environmental governance is likely to break down, which will cause damage to its environment [29–31]. Environmental disruptions can thus cause social disruptions and vice versa, as we knew since Aristotle. We can speak of social-ecological shocks when disruption takes place in both social and ecological systems, and in their coupling. Coordination of actions affecting the environment breaks down, while coordination of responses to environmental change suffers a similar fate [29–32] (Figure 1).

Conflict is a social concept referring to incompatibilities in the goals and activities of various types of actors. The relation between shock and conflict can take many forms. Shocks do not always cause conflict in societies, as social systems might simply fall apart into smaller ones, or create greater cohesion as a response, or, alternatively, transform in such a way that causes and effects of the shock are forgotten or rewritten. Yet often, shocks do cause conflict between actors about how to respond to these shocks [33,34], while conflict can escalate and create shocks [30,35–37]. Wars can destroy states and their landscapes. Not every shock can be adapted to, and conflict is a major reason for this. To discern in more detail how this can work, we need to look more closely at the basic differences between shock and conflict.

A basic distinction is that shocks can take place in social-ecological systems, while conflicts are by definition social. In addition, we can conceptualize shocks as *events*, while conflicts are *processes* (Figure 2). Conflicts can be understood, following Luhmann, as social systems in and by themselves [38,39]. They can keep themselves alive, and in the process entrench distinctions (including identities) [35,40,41]. The spiralling out of control can entail a spreading of simplified distinctions (which can be brought back to us/them, and good/bad) to more and more people, topics, actions, and systems. Thus, adaptation to the other becomes harder, persuasion is unlikely and the only remaining response is more negation and aggression [40,42,43].

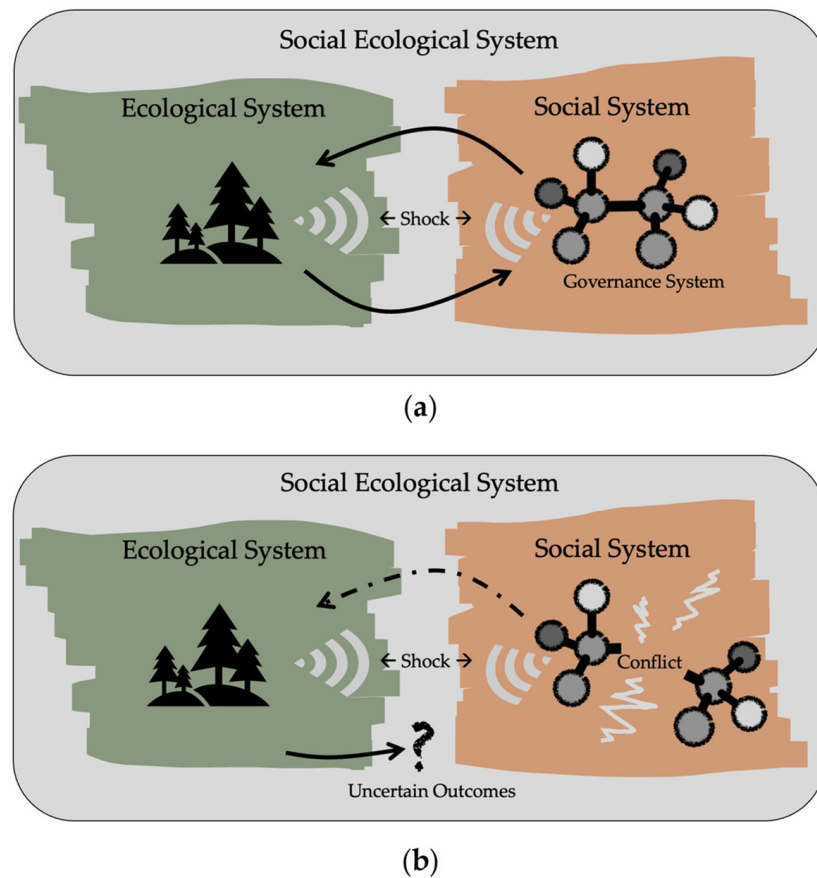


Figure 1. Social-ecological shocks are disruptions of both social and ecological systems and their couplings. (a) Social-ecological shocks can come from within or outside the governance system. (b) Shocks do not always cause conflict. Social systems might simply fall apart into smaller ones, create greater cohesion as a response or transform in such a way that causes and effects of the shock are forgotten or rewritten.

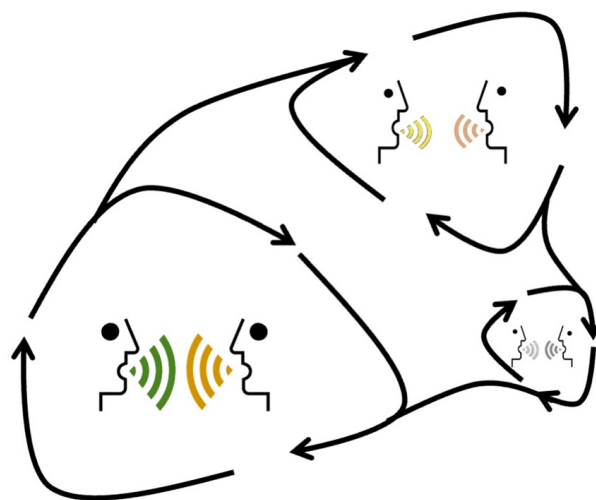


Figure 2. Conflicts are conceptualized as processes and can be understood as social systems in and by themselves. This means they reproduce themselves and they can entrench distinctions and simplifying differences, perpetuating polarization. Identities and histories can be rewritten or forgotten, or they can be brought back. Reviving memories could revive conflicts. Conflicts can, therefore, return where they were thought to be solved.

A related set of differences between shock and conflict is that shocks are remembered differently. Shocks can be rewritten, forgotten, yet conflicts are a cause, a driver of such rewriting [44]. In conflict, identities and histories are rewritten because of the conflict [26,45], while a shock might inspire such rewriting, but the shock itself is never sufficient cause. Furthermore, remembering conflicts can revive those conflicts, as Machiavelli observed in Renaissance Italy [46,47]. This is the case because conflicts are discursive in nature, just as identity and memory [38,48]. Reviving memories can revive identities and conflict—although never exactly in the old discursive configuration [49] (Figure 3). Conflicts can thus return where they were supposedly solved, identities that were supposedly lost can be reconstructed and gain currency in politics. Reconstructions of identity and memory can thus create conflict, while conflict can reconstruct identity, as each war can testify [50–52]. Shocks do not write themselves and relate differently to identity and memory. Thus, they do not return with a vengeance, except as a *new* shock, when an observing social system missed some important aspect of system dynamics in its environment, e.g., when it misinterpreted or forgot the cause of the previous shock, or the shock itself. The Great Depression has been forgotten many times [53].

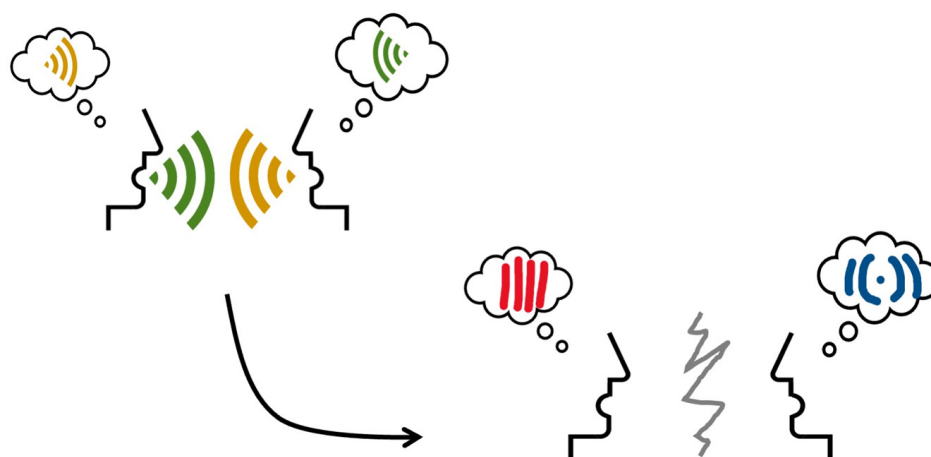


Figure 3. Conflicts are discursive in nature, just like identities and memories. Reconstructions of identity and memory can thus create conflict, while conflict can reconstruct memory and, in some cases, identity.

Shocks and conflicts are similar in other respects, though. First of all, they can both be productive and destructive [54,55]. That is, they can be destructive, in the material world, in discursive and organizational terms, and they can be productive in all those domains. Conflict and shock can spark innovation [56,57], they can trigger new discourse [58,59], new identities [60,61], new objects and landscapes [62] or new forms of coordination [63]. One can say that shocks and conflicts can trigger object formation and subject formation, which can then have effects in governance.

Productivity is not necessarily positive. The identities produced by shocks and conflicts are not necessarily conducive to future management or avoidance of shocks and conflicts. The discursive worlds produced in a history of conflict do not necessarily encourage a sustainable use of the environment or a harmonious coexistence with neighbors [64]. A history of shocks or conflicts can deeply entrench distinctions and simplify the understanding of self and environment [21,57] and, from there, it can simplify forms of governance, making them more rigid.

Shock and conflict can both create a rush for action. Such urgency can aggravate functional stupidity [65], meaning that the perceived need to act now hinders reflection and deliberation [66]. Old stories can become less questioned, positions of power can become harder to change, common folk wisdom can look like absolute truth [67,68]. Actions can be presented as necessary response to a shock or conflict, suppressing again careful

deliberation, reflexivity and, from there, adaptation [38,69]. Mistakes can be repeated, and failures can be reinterpreted as success. Topics of pressing importance before the shock or conflict can move to the background of decision making, even if those topics concern the sustainability of the community or the social-ecological system [70]. If the conflict or shock is immediately linked to an environmental problem, this issue can come to the foreground, but a careful deliberation of the various environmental issues facing the community becomes harder.

Fear accompanying conflict or shock can further shape public discourse in manners problematic for environmental sustainability. We follow Lacan in assessing fear as qualitatively different from other emotions, and potentially cancelling out everything else, preventing any form of rational decision making [71]. Fear of collapse, of loss of identity, of breakdown of coordination, descent into chaos, can freeze the critical thinking of citizens and decision makers, and become ammunition for fiercely conservative politics. A perceived threat to governance itself can reinforce ideas that keeping things in place, thinking in the short run, is the best course of action [65].

3. Governance

A conflict does not always create a shock, and a shock does not always entail a conflict. We pointed out possible relations between shock and conflict. In the case of external shocks, it is useful to distinguish between different types of change in the governance system caused. As we know, not all dramatic changes in the ecological system will trigger dramatic changes in the social system, let alone a shock in the governance system.

It is entirely possible that in the community, problems are observed earlier, or more clearly than in its governance system. These problems can undermine the legitimacy of the government or of the whole governance system [72–74]. Enduring conflicts and ecological shocks threatening livelihoods, cultures and local communities, yet not taken seriously higher up, can have such effects. Loss of legitimacy can then cause gradual change, or, in situations of high distress, a shock to the governance system, and, from there, through loss of coordination, in the rest of the social system, and in the encompassing social-ecological system [25,26,29–31]. Yet, shocks can also buttress the legitimacy of a sitting regime or an existing system, e.g., by creating a common purpose or enemy [54,55].

A shock can thus create ripple effects moving between systems. Within the social system, it can move between function systems and between organizations. A threatened livelihood (economic system) can be felt in politics, law, religion or science [75,76]. The shock can emanate from politics, religion, economy or the military [77]. If, in the governance system, there is a capacity to shift routines easily, the effect of the shock could be minimized, the shock could be absorbed. This can be one description of adaptive capacity. The existence of a shock points at the imperfection of adaptive capacity [78]. Any social-ecological system can be shaken up, can end up in a situation where an immediate response is not available [79], whether that response is a return to a recognizable system state or a more radical adaptation [17–20,68,80]. The ripple effects mentioned, a result of the couplings between systems [38], both social and ecological, can aggravate a shock (or conflict!) and make it harder to restore a form of coordination in governance [32]. While some form of adaptation and resilience is thus characteristic for any governance system [81], one can always imagine a shock disrupting coordination and the institutionalized forms of self-transformation. There is also a position where a response to an event is not available, and damage is done, yet the capacity to adapt to *other* events might remain intact [82,83]. In this kind of situation, one can speak of adaptive capacity in governance, even if a particular shock fails to trigger an adaptive response [84].

A coordinated response to shock must come, by definition, from the governance system, and shocks that first target the governance system are thus harder to overcome. If a parliament is blown up, this makes it hard for parliament to respond. If the shock emanates from other functions, as with a stock crash or an earthquake, or a neighbor declaring war unexpectedly, there is at least the resource of time to articulate a collectively binding response [85].

4. Shock and Dependencies in Governance

We already mentioned that shocks can create new subjects and objects in governance, even in and sometimes because of a situation of disruption. We can say that shocks can induce path creation in governance, even if this is not path creation of an entirely strategic sort [86]. As both shock and conflict can induce path dependency (conservative response) and path creation (innovation response), one could analyze this further in terms of a reshuffling of dependencies in governance. In the following paragraphs, we will re-articulate the potential effects of shock on evolving governance in those terms and include in the analysis the possibility of conflict.

Evolutionary governance theory [17,87], distinguishes several types of dependency, or rigidities in the governance path. Path dependencies are legacies from the past, which can occur in different forms as discursive and institutional features in governance. Material dependencies are effects of the material environment, both natural and human-made, on the reproduction of governance, thus effects stemming from an external environment. In social-ecological systems terms, those effects are conditioned by the specific couplings between social and ecological, as long as these couplings are coordinated by environmental governance. Interdependencies are more placed in the present and are understood as constraining (and enabling) relations between actors, between actors and institutions which keep the governance path on a certain track. Goal dependencies, finally, are the effects on current governance of visions for the future. These effects can be in line with the stated intentions of a plan or vision but can also widely and wildly diverge from those. What happens after a shock, if not collapse, will be shaped by the unique pattern of dependencies in the path [88].

Shocks in the ecosystem can be observed in governance or occur unobserved. If they are not observed, only an indirect response can be expected, as indicated above. If this is the case, then the governance path might be altered by the attempts by outsiders to gain attention for their perception of threat. If they are observed, this leaves more space for coordinated response. If the shock comes from within the social system (revolution, war), even from within the governance system (*coup d'état*), then it can be perceived as more of a threat to existing power relations.

Shocks will affect interdependencies immediately, as supply chains can be broken, as particular forms of coordination will be more difficult than others to maintain, and as some actors will be more damaged than others or can be taken out plainly [89]. Networks might have to reform when not only actors are gone or forced to take on other roles but also resources and infrastructures might be affected. Interdependencies between actors and institutions will shift, as certain institutions will not be attractive or realistic anymore as tools of coordination—long-term futures might be harder to envision, compliance might be harder, embedding informal institutions might have vanished [90,91].

Material dependencies can be affected by shock directly and indirectly. The shock can create scarcity and alter landscapes [92–94], or it might divert the attention of actors in governance to other resources, places and infrastructures that might now appear worth focusing on [95,96]. A war can focus the attention on self-sufficiency or on conquering someone else's oil reserves. If the shock has an environmental origin, the immediate change in governance could work its way through material dependencies, but shock stemming from social systems is likely to entail shifts in material dependencies, as well. Either competition for resources comes into play, or conflict over space and infrastructures. In the

case of shock to social systems, conflict is most likely occurring either as the cause of the shock, or the effect (think, e.g., massive religious conversion).

Even if societies are strongly dependent on an environment, a resource, a space or infrastructure, that does not mean that shocks are most likely to take that route, nor does it mean that material dependencies can trigger effects immediately or can be considered in isolation of the other dependencies. It also does not mean that shocks can be predicted, or, once taking place, that the effects of a shock on the shifts in governance can be predicted. Capital accumulated by exploiting one resource can be diverted towards a different future; in addition, public discourse and sentiment can change dramatically when faced with a shock.

Path dependencies can thus be reinforced and weakened; path creation can become easier or more difficult in the pressure cooker after a shock. Opinions can be volatile, resource distributions and power balances unrecognizable, old bullies gone or scared, certainties can appear less certain. Steering as deliberate path creation is not likely in the immediate aftermath, but the loosened couplings and interdependencies can create space for regimes strategically envisioning alternative futures. In short: shock makes things more unpredictable and harder to coordinate, but this does not necessarily mean that path dependencies of any sort are weakened. It does mean that more stark choices become more likely, that options for action and futures are considered more in terms of an *either/or* or in terms of polarities. Both conservative and progressive revolutions become more likely.

Goal dependencies, on the other hand, will be more uniformly undermined, as coordination for the long term becomes more difficult in times of shock. One can also note that they become less predictable, as the governance landscape becomes less familiar for the decision makers themselves, as a quick succession of new plans is common, and as short-termism tends to dominate [97,98]. After shock, governance tends to have a weaker and less fine-grained control over the various aspects and scales of community life, even in authoritarian regimes, and this further adds to the unpredictability of goal dependencies. If several visions remain without much effect, or too many new visions follow each other, this can erode trust in the community, in turn weakening the goal dependencies engendered by the next plan or vision.

5. Shock, Conflict and Dependencies

Shock and conflict leave different traces in governance evolution and in the community, and once a shock led to a conflict (or vice versa), the presence of a conflict will transform the evolution of governance [29–31].

Once we deal with a conflict, a shock will likely introduce stronger path dependencies [21,99]. How they play out remains unpredictable, yet given the features of conflict highlighted above, the self-perpetuating, polarizing, simplifying and expansionist tendencies of conflict, as well as their capacity to be recalled and revived, favor rigid governance paths marked by a simplistic interpretation of the past. If identity is invoked or restructured through conflict and if the conflict is tied to the identity narrative, then politics becomes identity politics, conflict can escalate and governance takes a more rigid course [35,40,41]. Rigidity of this sort does not preclude change, it is just that change is more likely to come as disruption, as a new shock, associated with a radical swing. Adaptive mechanisms of a more refined sort disappear together with the simplification of governance in the conflict and the appearance of identity politics.

Conflict has a different impact on discursivity and institutions in governance, compared to shock, again stemming from the simple fact that a conflict is a social system while a shock is not. Conflicts can thus be productive and disruptive in a different way and can create or redefine actors, objects and subjects much more directly [38,60]. New stories can become persuasive, can take over the experienced reality and create new movements and new actors in governance, who can enact new institutions. A conflict, moreover, is per definition observed, and thus, before it escalates, amenable to response. One can say that conflict forces response, and that this contributes to the features of polarization, etc.,

mentioned earlier. A shock, however, is not necessarily observed. If the shock comes from the environment, the only thing that is always observed is the initial non-response of the governance system. Sometimes the cause (volcano) is also observed, sometimes not at all (lead pollution in Roman water pipes). Ref. [100] distinguishes different pathways here of material events affecting governance, ranging from whispering events to vigorous and deadly ones [100]. Once an environmental shock engenders a conflict, these pathways will be transformed through the internal dynamics of the conflict.

As conflict is discursive (even seemingly straightforward conflict about resources), it is subjected to all features of discursive evolution, and in the context of governance, this means that it can be encoded in institutions and affecting power/knowledge interactions [39]. This, in turn, means that conflicts can reverberate in governance in more ways than shock and that a shock can cause such more complex legacies once it “ties in” a conflict [101]. We are particularly thinking of legacies beyond conscious restructuring of social memory and identity. Distinctions, topical emphases, implicit narrative structures, metaphors, problem definitions and even organizational structures in administration can all be shaped by a history of conflict [102]. The capacity to envision alternative futures can be reduced, the trust in coordination through governance, the possibility of transforming governance—all of it can bear the mark of a past conflict. In some cases, one can speak of collective trauma leaving traces in governance. The original conflict might not even be remembered to make the legacies possible [103]. If identities are formed in opposition to others, this can structure governance both through enacting new institutions and interpreting old ones, and, more broadly, through structuring discursive configurations in the community [104].

If through the conflict, actors disappear and new ones come to the forefront, if the process of object creation is altered and new or old objects become symbols of the conflict, symbols of a solution or reminders of victory or loss, this can crystallize a focus of decision-making around them. As we know, politics can also invoke or resuscitate old oppositions and conflicts to mask or manage, in a rather risky way, another conflict or the effect of a shock one does not want to acknowledge [105,106]. While a shock can reshuffle positions of power, the creation of narrative solutions, identities and futures will take place faster and in a more easily coordinated manner through conflict, as the conflict creates its own logic, while the shock itself defies the existing set of system logics.

While conflict in general thus creates its own path dependencies, because of its internal logic and its tendency to take over governance, it becomes clear that the other dependencies will be affected. Interdependencies are naturally reshuffled, not just because actors and institutions can disappear, but also because their positioning in the conflict now becomes relevant [89]. Actors can survive the shock but become marginalized in the ensuing conflict [107]. If the conflict endures and everybody must take a position, power relations will shift and the capacity to configure different coalitions will be diminished, hence affecting adaptive capacity [77,108]. If we recall Renaissance Italy, shifting coalitions and this form of adaptation might remain possible, maybe paradoxically when conflicts multiply, when there is not one subsuming conflict imposing its logic [46]. An easy move between coalitions and a smooth emergence of new actors remains unlikely, however, in a multiplicity of conflicts, and careful deliberation of possible adaptations is difficult.

If the shock is an environmental one, leading to a conflict, the presence of conflict will shape the material dependencies. One common way is the symbolization of the environment in categories traceable to the conflict. For example, a place, a resource or an event becomes associated with parties in the conflict and the position of those parties in governance will affect the material dependencies playing out [26,45,57,109]. It will affect what is observed, what and who is blamed and what is defined as problem and solution, as appropriate for the character of the polity. Conflict can induce blindness, an ignoring of material events, as much as a reinterpretation. This blindness or reinterpretation can lead to whispering events, materiality seeping into the fabric of governance slowly and quietly, unobserved [100].

Goal dependencies can be modified along this path of unobserved material dependencies. New plans, including strategies to address environmental shock, can fail to gain traction because they hit the wall of an unobserved environmental dependency. This can be understood as an appearance of the Lacanian Real [110], as both an outside and an unobserved inside of governance. Such a path of modification of goal dependencies after environmental shock, and in the presence of conflict, is not the only one of course. Rather than mapping out all alternatives, we can say that the presence of conflict can both reinforce and undermine goal dependencies, but in general, it makes them harder to manage. This is the case because in conflict, resources can be mobilized more easily, checks and balances can be placed in parenthesis and dissension ignored (amplification of goal dependencies), while simultaneously, the quality of the plans, visions and strategy, in terms of suitability for the situation, is more questionable since colored through the categories and simplifications and non-observations induced by the conflict (undermining goal dependencies).

6. Concluding: Managing Shock and Conflict in Environmental Governance

As we are interested in governance responses to ecological shocks, shocks stemming from the environment, yet reverberating through social-ecological systems, we are bound to acknowledge the complexity of governance systems, a complexity affecting the observation, explanation of and response to shocks. If we see responses to shocks as mechanisms of adaptive governance (beyond the obviously healthier avoidance of shocks), then we enter a terrain where conflict is often present, conflict which can operate as cause and effect of environmental shock. In our view, more important than tracing cause and effect is establishing the co-presence of conflict and shock. The emergence of conflict is not bad luck that can be ignored in the analysis of environmental governance when it is most urgent, i.e., after shocks.

The presence of conflict is logical, and it undermines many of the common prescriptions for adaptation as the core of environmental governance. There is no need for general despair, however. Conflict multiplies the possible pathways of response, of governance evolution, as it can further entangle the dependencies in that evolution. One practical recommendation is that awareness in governance (and academia) of the role of conflict is essential in managing environmental shocks, i.e., the tendencies described above, to modify observation of the environment, to alter patterns of dependencies, and with that, the effects, first on governance (goal dependencies), then beyond, of plans, policies and strategies designed to deal with the shock. A *second* practical recommendation is that concrete proposals for specific responses to an environmental shock, as well as more general prescriptions for good environmental governance (including current adaptive governance credo's), must be scrutinized much more carefully for their potential contribution to conflict, and to the erosion of already existing adaptive mechanisms. *Third*, the memory of both conflict and shock in governance systems and in their communities deserves a continuous critical scrutiny, beyond remembrance. Even if identities, and hence, memories, are reshuffled, this aspect of cultivating reflection can assist second-order observation, and a possible deconstruction of previous mythologies regarding conflict and shock [111].

Finally, our analysis of possible relations between shock and crisis in environmental governance does not preclude an application of Churchill's adage of not letting a good crisis going to waste. It is more easily applicable when a shock does not trigger a conflict, but the conflict itself might be productive, as well. A conflict might clarify positions which were muddled before, making a sharper analysis of environmental problems possible, forcing actors to take positions when that might be necessary. Depending on the outcome, of course, there is the possibility that actors previously denying environmental problems lose their grip on power, which might have been impossible in a tradition of continuing compromise. The point remains that understanding governance and conflict in governance is essential in grasping how societies can respond to environmental shock.

The perspective on shock and conflict in governance offered here can enrich several traditions of inquiry and apply to several domains of policy. We deemed it useful to embed our analysis in the discourse of resilience, as this perspective is valuable in the current context of environmental and socio-political crisis, and because it is tightly coupled to the concept of social-ecological systems, which also underpins our analysis. We have argued how our shock/conflict perspective complements current resilience thinking, enhancing its capacity for realistic policy recommendations and connecting it to intellectual traditions hitherto ignored. Yet, the shock/conflict thinking presented here can be valuable in other policy perspectives, for other themes and in more narrowly defined policy domains, as well.

This is largely a matter of further inquiry, but as intimated in the introduction, the burgeoning field of transition studies seems like hospitable terrain to continue the type of analysis proposed in this paper, especially as this field has moved far beyond its rather formulaic roots. Similar things can be said about development studies, conflict studies and the management of science and innovation. Even when departing from social-ecological perspectives, our shock/conflict ideas can be helpful in grasping the entanglement in a particular policy domain between shocks, the conflicts they engender and the options to respond. Even if analyses focus on a single concept, the shock/conflict perspective can be of assistance. It can inform studies of learning in governance, of participation and inclusivity and potentially many other topics. Hence, our hope that this is not the last word, but rather the beginning of a fruitful conversation.

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