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The necessity of wickedness and the possibilities of participation: Reframing dilemmas on water planning between conceptual fuzziness and real-world practice

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Abstract

This paper aims to provide conceptual clarity on wicked problems, or those planning and policy problems that cannot be solved but only reinterpreted. It does so by using participatory water governance as reference, and paradox and institutional bricolage as theorizing methods. The idea that wicked problems are intractable and complex but ultimately solvable is a paradoxical proposition implicit in much literature. Recognising the function of the different orders of governance helps distinguish between wicked and non-wicked or tame problems. The intractability of wicked problems originates from the order of meta-governance where paradigms compete for the definition of the grand principles of governance, whereas tame problems can be solved in second-order governance or the domain of policy implementation. Post-wickedness demands attention for the dual relationship of wicked and tame planning and policy problems, as each influences the interpretation of the other. In fact, their interdependence is crucial to promoting social justice.

1. Introduction

In their seminal work, Rittel and Webber (1973) describe planning and policy problems as wicked or intractable problems that cannot be solved but only reinterpreted. The intractability of wicked problems is due to the fact that goal formulation is a political process dependent on social values. Achieving societal consensus on the paradigms that inform planning and policy, and on the ultimate goals of policy, is therefore impossible. At most, agreement around problem definition and successful policy implementation can be obtained for tame problems, whose solution depends on defining measurable indicators of success (Coyne, 2005; Weber and Khademian, 2008). For example, the debate around whether water services should be operated by the public or private sector is a typical wicked problem and has not been solved since the question emerged in the late XIX century (Hall et al., 2013). Conversely, achieving the MDG target to halve by 2015 the proportion of the world population without sustainable access to safe drinking water and basic sanitation is a tame problem. In fact, it is possible to reach consensus on the desirability of solving this policy problem. It is also possible to structure and solve this problem by achieving the MDG target as defined by the United Nations.

The fact that wicked problems cannot be solved means that wickedness is a necessary condition of planning and policy. Another characteristic of wicked problems is problem complexity, which is due to the contingency that affects the causes of social problems. In other words, the interconnectedness of the causes of planning and policy problems entails the complexity of solving these problems (Rittel and Webber, 1973). The intractability of wicked problems therefore lies in the indeterminacy of diagnosis and inadequacy of prognosis. The notions of the necessity of wickedness and problem complexity support the exploration of the way in which planning and policy problems are interpreted and addressed. More precisely, they provide lenses through which to view the definition and structuring of such problems across communities of practice and through time. Also, the analytical categories of the necessity of wickedness and problem complexity enable the investigation of decision making on the adoption of alternative solutions to tame problems and on the relative efficiency and effectiveness of these solutions. Here it is important to note that in a complex world, contingent relationships do not only apply to the causes of problems but can also apply to problems. Wicked and tame problems arising in a given governance sub-system can therefore be interdependent. If wickedness presupposes the normative and cognitive institutions that enable and constrain the prognosis and diagnosis of tame problems, problem complexity limits the rationality of decisions and efficacy of solutions.

Consisting in the contribution of individual citizens and civil society to the exercise of democratic government, public participation is part and parcel of policy and governance. It does in fact overlap with the horizontal, participatory networks that epitomise governance as government beyond the state (Swyngedouw, 2005). Indeed, in the mainstream view of water governance promoted by the World Bank, the Global Water Partnership and like-minded organisations, participatory governance is good water governance (Rogers and Hall, 2003). As such, public participation is a wicked problem. At the same time, it overlaps with the multi-actor collaborative networks that are invoked as the solution to wicked problems (Weber and Khademian, 2008). The realisation that participatory governance is a wicked problem confronts us with a challenging question: how can the problem be the solution? It also confronts us with a dilemma: if we despair of defining wicked problems, should we try to adopt optimal policies or would random policy adoption suffice to solve problems? Similar questions and dilemmas are salient for scholars and policy practitioners concerned with water

and sanitation services. In fact, these satisfy basic human needs, prevent public health hazards (Heller, 2009), and impact on social and environmental justice (Castro, 2007).

This chapter discusses public participation in the water and sanitation sector as a wicked problem. It aims to chart the possibilities - both the potential and limitations - of public participation as a technique of water governance. Its first objective is to expound the concept of the necessity of wickedness, and in so doing to unravel paradoxes generated by Rittel and Webber's (1973) conceptualisation of wicked problems, and to make explicit the epistemic and policy implications of the dilemma of wicked participatory governance. The second objective is to illustrate the implications of the necessity of wickedness on the way in which the complexity of participatory governance is interpreted and addressed by two competing meta-theoretical and political-economic paradigms: the mainstream and neoliberal tradition, and the heterodox and communitarian tradition. The chapter pursues these objectives by using institutional bricolage (Cleaver, 2002; Kincheloe, 2001) to establish synergies between multiple perspectives and devise a composite framework that recognises the wickedness and complexity of participatory water governance. The theoretical approaches deployed for this purpose include Polanyi's (1944) notion of pendulum swings, Foucauldian approaches to knowledge, power, and governance (Swyngedouw, 2005), and the advocacy coalition framework (Weible et al., 2009).

This chapter is organised as follows. Section 2 elaborates on the causes of the necessity of wickedness and on its implications for pendulum swings between competing paradigms. These implications include the alternate dominance of dialectical paradigms. Section 3 illustrates that two paradoxes generated by Rittel and Webber's (1973) conceptualisation of wicked problems – the paradox of wickedness and the paradox of tameness - are false, as they originate from the inappropriate use of the terms "wicked problem" and "tame problem". It also rejects the dilemma of wickedness as unacceptable from the critical realist point of view, and suggests that identifying the type of planning and policy problems that are necessarily wicked promises to support socially acceptable solutions to the dilemma. Section 4 discusses participatory water governance as a wicked problem and sketches the contours of the dialectical paradigms that contend for the control over the conceptualisation and practice of public participation in the water and sanitation sector. Section 5 explains how the way in which competing dialectical paradigms interpret and address complexity informs different ideas of and experiences with participatory water governance. Here, I suggest that the orthodox or mainstream reduction of complexity is associated with the neoliberal understanding of governance as the realm of exclusion. By contrast, heterodox attempts to embrace complexity are the complement of the communitarian preference for inclusion as the principle governing governance. The chapter ends with concluding remarks in Section 6.

2. The necessity of wickedness

Rittel and Webber (1973) pronounce that wicked problems display the following characteristics (in the authors' own words): 1) there is no definitive formulation of a wicked problem; 2) wicked problems have no stopping rule; 3) solutions to wicked problems are not true-or-false, but good-or-bad; 4) there is no immediate and no ultimate test of a solution to a wicked problem; 5) every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly; 6) wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated

into the plan; 7) every wicked problem is essentially unique; 8) every wicked problem can be considered to be a symptom of another problem; 9) the existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution; 10) the planner has no right to be wrong. As defined by Rittel and Webber, wicked problems have been declared to be the norm, not the exception (Coyne, 2005). Also, it is recognised that by definition wicked problems are not solved (Weber and Khademian, 2008).

If most planning and policy problems cannot be solved due to their wickedness, the paradox of wickedness – the impossibility that the problem can be the solution – applies not only to participatory water governance but to most governance processes that are proposed as solutions to planning and policy problems. In fact, unless we accept randomness as a decision making criterion, the problem of operationalising a governance mechanism needs to be solved before the mechanism can be used to solve other governance problems. If true, the paradox of wickedness would induce despair of ever fruitfully adopting public participation to resolve problems of water governance. The necessary wickedness of planning and policy problems also generates the dilemma of wickedness: if we despair of defining wicked problems, should our strategy for solving planning and policy problems be based on the comparative institutional analysis of feasible governance mechanisms, or on random intervention? In that sense, it has been noted that without a paradigm or theory it is not possible to depart from empirical relativism, or the inability to distinguish between the implications of different facts (MacKenzie and House, 1978). Preference for empirical relativism as a decision making criterion would amount to endorsing the social and environmental injustice which is today associated with water management across the global North and South. From a critical realist point of view (Sayer, 1992) and for all those who care for a progressive future, this is unacceptable.

The paradox and dilemma of wicked participatory governance are causally intertwined, and their joint solution is required to open up socially desirable possibilities for public participation in the water and sanitation sector. I set out to do so by identifying the fundamental causes of wickedness and investigating the distinction between wicked and tame problems, under the assumption that comparing and contrasting the wicked and non-wicked will help reveal the nature of wickedness. I proceed by integrating allied perspectives on wicked problems and pendulum swings, which are respectively preoccupied with the outcome and process of emergent paradigms. On the one hand, accounts of wicked problems imply that the absence of a stopping rule for the definition of wicked problems is due to the perpetual competition between opposed paradigms. On the other hand, advances in the study of pendulum swings suggest that paradigms become dominant as a result of the political struggle between advocacy coalitions, that the intrinsic nature of political confrontation means that there is historical necessity in the occurrence of pendulum swings between paradigms, and that political confrontation is at the same time a struggle of power and a struggle of discourse (Hall et al., 2013). Paradigms therefore are dialectical frameworks used by competing advocacy coalitions to mobilise discourse (Lobina, 2012b), which in a Foucauldian perspective is knowledge turned into and shaped by power (Richardson, 1996).

The necessity of wickedness, or the impossibility of solving wicked problems, is due to the fact that the definition of policy problems is dependent upon transcendental and universal principles which in pluralist societies are contested. These contested principles – whose definition would allow for identifying stopping rules – include sustainability (Soderbäum, 2011; Connelly, 2007), nature (Ginn and Demeritt, 2008), and participation itself (Day,

1997). These concepts are transcendental and universal as they invoke the ability to go beyond society's developmental limitations in a way that benefits all in society. Controlling the meaning and use of such transcendental and universal concepts affords power (Swyngedouw, 2010), and that explains why competing advocacy coalitions can be expected to contest their definition. In a pluralist society where diverse views of the world are tolerated, the political and social struggle for the definition of rules and allocation of wealth – a power struggle that implies the mobilisation of ideas and resources - will inevitably extend to the struggle for the control of discourse in the public sphere.

The alternate dominance of paradigms is accompanied by the reinterpretation of transcendental and universal principles. In turn, this leads to recasting policy problems through the lens of redefined principles. The policy implications of this process for the definition of wicked problems are significant as exemplified by Bakker's (2003, 2001) illustration of the reinterpretation of the notion of equity in the English and Welsh water sector since the 1970s'. In this period, governmental policy abandoned ideas of substantive equity in pricing water supply and sanitation, which had been inspired by the 'ability-to-pay' principle. Instead, it embraced notions of procedural equity linked to the 'benefit principle' and the use of pricing to reflect the costs imposed by individual households on the system. This redefinition of the problem of providing affordable and good quality water services radically altered the redistribution of resources between affluent and vulnerable households and, together with the 1989 privatisation, contributed to a marked increase in water poverty (Lobina and Hall, 2008).

Rittel and Webber's (1973) taxonomy of the distinctive features of wicked problems contains both causes of wickedness (e.g. absence of a stopping rule) and manifestations of wickedness (e.g. there is no immediate and no ultimate test of a solution to a wicked problem). I argue that all the causal elements of this taxonomy arise from two fundamental causes: the fact that, in a pluralist society, diagnosis is indeterminate due to the necessary occurrence of pendulum swings between paradigms; and, the fact that prognosis is inadequate to capture problem complexity derived from the contingency of social causation. The former comprehends elements 1-4 and 9 in Rittel and Webber's taxonomy of wickedness. The latter explains elements 5-8 and 10. However, while contingency is an immanent condition of social action, problem complexity can be expected to apply to all problems – wicked and tame problems alike – albeit in varying degrees. It follows that only the dependence of goal formulation on the alternate dominance of dialectical frameworks is a unique feature of wicked problems. In other words, problem complexity cannot in itself illuminate the distinction between wicked and tame problems. In addition, paradigm-dependent problem structuring is the fundamental causal mechanism of the necessity of wickedness. Hence, problem complexity exacerbates the condition of wickedness but does not constitute wickedness.

3. Two false paradoxes and one unacceptable dilemma

Much literature on public administration and water policy treats wickedness as a synonym of problem complexity and is concerned with identifying solutions to wicked problems (Weber and Khademian, 2008; Sørensen and Torfing, 2009; Verhagen et al., 2008). This position, which can be described as the paradox of tameness, is equal and opposite to that of the paradox of wickedness. It is equal because, like the paradox of wickedness, the paradox of tameness fails to distinguish between wicked and tame problems. On the one hand, the paradox of tameness collapses wicked into tame problems by assuming that both can be

solved. On the other hand, the paradox of wickedness equally treats wicked and tame problems as it posits that no planning and policy problem can be solved. The paradox of tameness is opposite to the paradox of wickedness because the former assumes that wicked problems can be solved while the latter rejects this proposition. Also, while the former submits that all problems are tame the latter predicts that all problems are wicked. The two paradoxes are false because they fail to distinguish between wicked and non-wicked problems. I argue that this failure originates from Rittel and Webber's (1973) inconsistent definition of wicked and tame problems, and their failure to distinguish between planning and policy problems at different orders of governance.

As noted, Rittel and Webber's (1973) ambiguous conceptualisation of wicked problems is due to the fact that they define wicked problems in function of two incongruous attributes. The necessity of wickedness is an attribute unique to wicked problems while problem complexity is an attribute that, by virtue of contingency, potentially characterises all problems. This ambiguity mirrors the under-conceptualisation of tame problems. Non-wicked problems can be expected to encompass all the problems that can be structured and solved, but Rittel and Webber's (1973) notion of tame problems coincides with those problems that are simple to solve. This approach neglects the contingent and context-dependent nature of complexity, which varies with changes in the knowledge and capability of the problem-solver and in the physical and institutional structure that enables and constrains problem solving. In fact, it cannot be assumed that the same problem that is easily solved in one case will retain the same degree of complexity in another. The fact that Rittel and Webber (1973) define wicked problems on the basis of both a necessary and unique attribute (that of wickedness), and a contingent and common attribute (that of problem complexity), is heavy with consequences. Indeed, the distinction between the wicked and the non-wicked remains unclear as the contingent attribute of problem complexity might be shared by tame problems. The notion of tame problem itself remains poorly defined due to its relativity. The ambiguous conceptualisation of wicked problems combined with the weak conceptualisation of tame problems generates two diametrically opposite but equally false caricatures of planning and policy problems.

A concurrent explanation for Rittel and Webber's (1973) failure to distinguish between wicked and non-wicked problems can be found in their failure to distinguish between planning and policy problems in different institutional contexts. They are oblivious to the fact that the nature of problems varies according to the orders of governance in which problems are situated. Meta-governance is the order of governance where the grand principles of governmentality are defined, including the political-economic paradigms that guide policy and economic practice. First-order governance pertains to the codification and formalisation of these principles in policy instruments that translate norms and values into policy programmes. Second-order governance refers to the sphere of policy implementation and concerns the design and realisation of policy projects (Swyngedouw, 2005). The necessity of wickedness thus descends from meta-governance and produces its effects on the other two orders of governance. However, problems in the three orders of governance pursue different objectives: the objective for meta-governance problems is to find definitive answers to transcendental questions on the organisation of society; the objective for first-order governance problems is to operationalise the grand principles of meta-governance for the organisation of policy; the objective for second-order governance problems is to achieve specific and measurable goals identified by first-order governance. Conflating the three orders of governance and overlooking the diversity of problems associated with them, as

Rittel and Webber (1973) do, is akin to confusing the frame with the picture. As a matter of fact, frame and picture remain distinct objects despite their interdependence.

An example that illustrates the falsity of the two paradoxes is represented by the progress recently made by the international community towards achieving the MDG target on water. This target – to halve by 2015 the proportion of people who are unable to reach or to afford safe drinking water – was adopted by the General Assembly of the United Nations in 2000 in a declaration that refers to equity and sustainable development among its overarching values and principles (United Nations, 2000). It is estimated that the MDG target on water has been met five years before the set deadline, as two billion people gained access to improved water sources between 1990 and 2010 (WHO/UNICEF, 2012). Meeting the MDG target on water exemplifies a tame problem that can be structured and solved in the context of second-order governance, and as such allows us to infer the qualities of tameness. The example shows that tameness does not preclude problem complexity. The achievement of the MDG target on water has not occurred without difficulties, as reflected by uneven and discontinued progress across countries and through time, and by the fact that the twin target of sanitation is not expected to be met by 2015 (WHO/UNICEF, 2012; Castro, 2009). The difficulties in meeting the MDG target on water and sanitation are related to the dominant paradigm that has governed the organisation of water services in the last 40 years (Castro, 2009; Hall and Lobina, 2009). Nonetheless, the tame problem of meeting the MDG target and the wicked problem of providing water services through the public or private sector, through solidarity or the market, remain distinct. The former can be measurably solved while the latter can, in a pluralist society, never be definitely unravelled. The upshot is that, however related, wicked and tame problems cannot be conflated into a single category because they arise in different orders of governance.

The falsity of the paradox of wickedness and the paradox of tameness becomes now apparent. Ascertaining the falsity of the two paradoxes permits the rejection of the dilemma of wickedness, in so far as the unqualified despair of solving tame problems cannot be justified. Otherwise put, the fact that wicked problems cannot be solved by meta-governance does not mean that tame problems cannot be solved by second-order governance. Hence, the comparative institutional analysis of alternative and feasible governance mechanisms should be preferred as a decision making strategy over random intervention because it allows for prioritising the alleviation of social and environmental injustice. Recognising the separation of wicked and tame problems as well as their interdependence elicits the merits of comparatively evaluating participatory mechanisms in light of their dual relationship with competing political-economic paradigms. This relationship determines the policy outcomes of participatory governance as paradigms inform the idea and practice of participation. Conversely, multi-group assessments of the results produced by participatory mechanisms reflect in the collective evaluation of dominant paradigms, thus influencing the direction and velocity of pendulum swings (Lobina, 2012b). Scholars and policy practitioners alike should therefore go beyond the despair induced by the paradox of wickedness and the reductionism of the paradox of tameness. Unbundling planning and policy problems into their wicked and tame components and investigating how one transposes into the other, holds promise of advancing social knowledge and promoting social and environmental justice. The combination of this awareness and commitment is what I call post-wickedness. It is an intellectual and practical predisposition that is consequential to making clarity on the distinction between wickedness and tameness, and leads to curiosity about the articulation of the two.

4. Participatory governance as a wicked problem

The conceptual design of participatory governance is a quintessentially wicked problem whose solution depends on the operationalisation of transcendental and universal principles. Indeed, the idea of citizen participation is intimately connected with that of democracy and evokes principles of inclusiveness, representation, empowerment and emancipation. By contrast, those who value organisational effectiveness over democratic process cast doubts on the possibility and desirability of direct democracy and public participation, and insist that neither should be adopted extensively and in radical forms (Day, 1997). The necessary wickedness of participation therefore lies in the essence of governance as a contest between rival political projects inspired by different and at times irreconcilable values (Castro, 2007). However, participatory governance is also a technique of government for the production of governance. It follows that competing paradigms of governance presuppose competing ideas of participatory governance. Furthermore, understanding the wickedness of participatory governance requires identifying the dialectical relationships between competing paradigms of governance and participatory governance. A critical realist and Foucauldian approach suggests that paradigms emerge from the interdependence of practical and scholarly knowledge, as scholars participate in advocacy coalitions and in the exercise of power. Hence I turn to the relationships between governance paradigms associated with social practice and theory creation, or meta-theoretical frameworks.

It is possible to identify three paradigms of water governance in function of the principles that inspire water service management. The neoliberal or privatist paradigm rests on the centrality of the market and thus advocates market development to enhance sustainable water development. The administrative rationalism paradigm obtains from the marriage of bureaucratic administration with positivistic science, and favours the primacy of technocratic solutions (Castro, 2009). The communitarian paradigm upholds community development as the ultimate goal of water governance, whether this is pursued through state or community involvement (Castro, forthcoming, 2014; Bakker, 2008). These paradigms of water governance entail different approaches to participatory water governance, in function of the preferred modality of participation. Thus, the neoliberal paradigm is associated with the view that participants engage in governance as customers. Examples of participation under this paradigm include the submission of complaints to operators, customer evaluation of service quality (Lobina, 2005b), and consumer contributions of labour and materials as a form of payment in-kind for services (Hall and Lobina, 2007). Under administrative rationalism the participant is the liberal subject and participation takes the prevalent form of citizen consultation, while final decisions rest with bureaucratic technocrats, and administrative redress as a bureaucratically sanctioned civil right (Pezon, 2007). Finally, the communitarian paradigm emphasises that the participant is the citizen and contemplates advanced forms of participation such as co-decision making, direct democracy, and community management.

These paradigms can be categorised with the help of two meta-frameworks, or frameworks for the analysis of other frameworks, respectively aiming to capture their philosophical approach to resource redistribution and participation, and to interpreting complexity. Castro's (forthcoming, 2014) meta-framework of exclusive and inclusive water service governance suggests that the neoliberal and communitarian paradigms are incompatible. More precisely, as different practices inspired to different paradigms can and do co-exist (Klein, 2013), it is impossible that the practice of policy and planning be contemporarily informed in equal terms by two opposite paradigms. The former's reliance on the market as a redistributive instrument excludes those who cannot afford to pay the commercial price for accessing the

service. It thus conflicts with the latter's aspiration to universal inclusion through collective ownership and communitarian ethos. By contrast, the administrative rationalism paradigm appears located at the interface between the two conceptual dimensions of exclusive and inclusive governance. On the one hand, the technocratic nature of decision making espoused by this paradigm excludes considerations alien to the professional rationality of bureaucrats. However, this has not prevented the commodification of those public enterprises where profit orientation and technocracy prevail. Also, the democratic accountability that comes with public ownership can temper bureaucratic intransigence. In fact, it is collective action that influenced public enterprises to achieve virtual universal service coverage in the countries of the global North, from the late XIX century to the 1960s (Castro, 2009).

The neoliberal and communitarian paradigms respectively hold exclusive and inclusive conceptions of participatory water governance. The neoliberal paradigm's favour for participation in the form of customer complaints excludes the genuine voice of users in a sector where customers are captive due to natural monopoly. At the other end of the spectrum, the communitarian paradigm affords maximum voice to citizens in view of the opportunities offered by having civil society represented in service providers' executive bodies or by participatory budgeting. Again, administrative rationalism paradigm is subject to centrifugal tensions towards the other two paradigms. On the one hand, user consultation does not imply any obligation for technocrats to incorporate users' views in their final decisions, and can therefore prove to be a practice no less exclusive than customer complaints or customer evaluation of service quality. On the other hand, administrative redress is in principle open to all citizens within the limits of due process, and thus represents a channel for citizens to make their voice heard.

The meta-theoretical frameworks of orthodox and heterodox economics are competing epistemological approaches to economic theory making. They allow us to consider how the neoliberal and communitarian paradigms of water governance relate to complexity. The neoliberal paradigm of water governance descends in fact from the orthodox or mainstream economics meta-theoretical framework, which represents the currently dominant meta-theoretical paradigm in economics. Conversely, there are strong connections between the communitarian paradigm and the meta-theoretical framework of heterodox economics. Orthodox and heterodox economics have divergent approaches to dealing with social or institutional complexity: orthodox economics tends to reduce, while heterodox economics seeks to embrace complexity. In fact, orthodox economics assumes that causality is linear and that it happens in closed social systems, while heterodox economics adopts notions of circular, cumulative, and ultimately path dependent causation situated in open social systems (Dow, 2011; Lee, 2011; Lawson, 2006; Hodgson, 2000; Pluta, 2010). However influential, the orthodox assumption of linear causality is problematic because unrealistic. It consists in an under-socialised account of agency which does not question the occurrence of expected outcomes because in a closed system there is no change in the conditions of agents and underlying institutions (Sayer, 1992). In other words, if the initial hypothesis is that private sector is efficient orthodox theory will not contemplate that this assumption can be challenged because it does not recognise that the qualities of private operators and the qualities of the environment in which they act can be subject to change. By contrast, the heterodox hypothesis of path dependent causation implies a plurality of possible outcomes whose realisation is affected by uncertainty. While bringing little comfort to the deterministic mind, it avoids excluding explanations that are not envisaged at the outset of investigation. It is therefore a helpful antidote against tautology.

Connected by relationships of causal and logical dependence, the paradigms and meta-frameworks of governance discussed here constitute an ecology of paradigms which embodies meta-governance. These are relationships of compatibility and incompatibility due to the fact that the emergence and dominance of paradigms are determined by multi-group assessments of the normative coherence of discourse (Lobina, 2012b). The neoliberal or mainstream paradigm is incompatible with the communitarian paradigm because market and community development cannot be reconciled. In fact, the privatist imperative of profit maximisation cannot tolerate other hegemonic principles. Instead, administrative rationalism appears compatible with both the neoliberal and communitarian paradigms as suggested by its predisposition to blend with either paradigm in relation to the organisation of water service provision and participatory water governance. In this ecology, advocacy coalitions mobilise paradigms by processes of association and dissociation in a complex syntax of paradigm advocacy. The wickedness of governance is thus linked to the ecology of paradigms by a dual relationship. By inducing pendulum swings, the necessity of wickedness determines continuous changes in the influence of compatible and incompatible paradigms of participatory water governance. In turn, the ecology of paradigms constitutes the milieu of the intractability of meta-governance problems of structuring and interpreting participation. In fact, in the absence of a plurality of paradigms the pendulum would stand still.

5. Participatory governance as a tame problem

The interaction between the necessity of wickedness and the ecology of governance paradigms defines the possibilities of structuring participatory water governance as a tame problem addressed by second-order governance. Through the mediation of first-order governance, dominant paradigms inform the definition of participation as a tame problem in governance sub-systems. The inherent complexity of the ecology of governance paradigms therefore translates in a plurality of feasible approaches to structuring and solving tame problems of participatory governance. Sintomer et al.'s (2012) taxonomy of participatory budgeting models makes for a sophisticated cross-country exploration of this plurality. For the sake of simplicity, I consider the effects of two competing governance paradigms – the neoliberal and the communitarian - on the way in which participatory water governance is defined and structured as a tame problem. This exercise requires looking at the institutions associated to paradigms and how rules, norms and customs enable and constrain decisions on who participates, how, for what purposes, and under which premises.

Intrinsic to the neoliberal paradigm of water governance is the involvement of the private sector in the management of water and sanitation and, in alternative to private operation, the insistence that public operators mimic private companies' ethos and practices. This commodification of water services affects the process and outcome of participation under the neoliberal paradigm. Miller (1999) observes that private sector participation and community involvement in water projects do not coexist. The profit maximisation imperative of the private sector is in fact a hegemonic principle and, as such, it cannot tolerate the centrality of non-commercial considerations which is a constitutive element of the communitarian paradigm. This prediction is supported by empirical evidence on the restrictive practices of participatory water governance under private sector participation in the global North and South. A recurrent feature of concessions and other private contracts is to limit public access to information on grounds of commercial confidentiality (Lobina, 2005a; Lanz and Eitner, 2005; Beveridge et al., 2014). Another is to reduce the voice of participants and factual impact of their contributions by restricting participation to consultation (Lobina and Hall,

2007; de la Motte, 2005). Regulatory agencies established in conjunction with privatisation have curtailed the independence of participants in a number of cases. For example, the body representing water consumers in England and Wales was as an integral part of the structure of the regulator itself (de la Motte, 2005). Similarly, a consultative committee of users was incorporated in the structure of the regulatory agency for Bologna, Italy and the regulator limited the access of committee members to information and resources necessary for the fulfilment of their duties (Lobina and Matino, 2005). The neoliberal interpretation of tame problems of participatory water governance produces undesirable outcomes, including weak accountability and poor responsiveness to the interests of communities.

The necessity of profit constrains the behaviour of policy participants under the neoliberal paradigm. This contrasts with the openness of institutional trajectories to arrive at the dual goal of the communitarian paradigm: human need satisfaction and community development. The openness of this process – which rejects profit as the preferred means to achieve collective goals – implies a plurality of paths for the pursuit of this dual goal, and a plurality of possible outcomes of participatory water governance. These outcomes can be more or less satisfactory in light of their responsiveness to social considerations. Tame problems of participatory governance are solved under the communitarian paradigm when the decision making process is aligned to the governance objectives identified by the served community. The following cases illustrate this point.

In Grenoble, France, co-decision making was adopted with the return to public water supply operations in 2001. This consisted in the representation of civil society in the Board of Directors of the municipal service provider, and contributed to enhancing service quality and investment levels in infrastructure maintenance compared with the previous private and semi-private operations (Lobina and Hall, 2007). In Porto Alegre, Brazil, co-decision making has not only been introduced at operational level similarly to the case of Grenoble. It has been adopted at regulatory level as civil society representatives sat in the body monitoring the operations and investments of the municipal enterprise. Also, co-decision making was adopted at policy making level as participatory budgeting was extended to the allocation of municipal financial resources for water investments. Participatory governance resulted in efficient, effective and sustainable water operations enjoying the community's support for price increases aimed at preserving sustainability (Hall et al., 2002). In Venezuela, community participation in the management and monitoring of water operations has been institutionalised in public-community partnerships called Mesas Técnicas de Agua, whose remit includes the popularisation of knowledge on water. This has allowed Venezuela to achieve the MDG target on water as early as 2004, and the MDG target on sanitation in 2006 (Lacabana and Cariola, 2013). However, there is no necessity in the positive outcome of participatory water governance under the communitarian paradigm. This is shown by the case of Cochabamba, Bolivia where the introduction of public participation has been associated with poor operational performance (Bakker, 2008).

The observation of the dynamics of tameness reveals the role of strategic interest in determining the process and outcome of participatory water governance. This is exemplified by the private sector's interest in profit maximisation, and regulatory agencies' interest in preserving the system of privatisation, and their role in constraining the scope and effectiveness of participatory governance under the neoliberal paradigm. At the same time, the cognitive and the normative play an important role in shaping the paradigms that support the pursuit of interest in governance sub-systems. These findings corroborate the literature calling for the study of the interdependence of strategic interest and policy preference, in

order to advance the development of the advocacy coalition framework (Lobina, 2012b; Nohrstedt, 2010). They also chime with the literature invoking the analysis of the alignment of actors' motivation and resources with institutions as a determinant of policy outcome (Lobina, 2013, 2012a; Surel, 2000). This has implications for the understanding of participatory water governance as a wicked and tame problem. It has been noted that the depoliticisation of participation has the effect of making invisible the power relationships that produce social injustice, thus facilitating their reproduction (Swyngedouw, 2005; White, 1996; Leal, 2007; Cleaver, 2005). If the critical denunciation of injustice is a potent antidote against its invisibility, the comparative evaluation of the alignment of agency and institutions can be the method for predicting the policy outcome and ascertaining the social desirability of participatory water governance under competing political and economic paradigms.

6. Conclusions

This chapter has attempted to contribute to conceptual clarity in the area of participatory water governance. Understanding how participatory water governance can at the same time be the solution to problems of sustainable water development, and a policy and planning problem to be defined and structured before being solved, requires careful consideration. While Rittel and Webber's (1973) concept of wicked problems is a powerful analytical tool for making sense of policy and planning problems, the way in which this notion has been mobilised in the literature of the last forty years is problematic. The paradoxical nature of wicked problems lies in the unresolved tension between two incompatible definitions: that of wicked problems as intractable policy and planning problems that cannot be solved but only reinterpreted; and, that of wicked problems as a mere synonym for complex policy and planning problems. This tension points to the internal contradiction of wicked problems, as these cannot be at the same time unsolvable and solvable however complex. It also points to the inaccurate distinction between wicked and non-wicked or tame problems. Previous conceptualisations of tame problems have assumed that these were a synonym for problems that can be easily solved. But this leaves unanswered the question of how to define and structure the many policy and planning problems that can be solved even if their solution entails complexity.

In order to resolve the internal contradiction of wicked problems, and to help distinguish between wicked and tame problems, this chapter has demonstrated the falsity of two equal and opposite paradoxes: the paradox of wickedness, which states that all policy and planning problems are unsolvable; and, the paradox of tameness, according to which all policy and planning problems can be solved. The two paradoxes are equal because both fail to distinguish between wicked and tame problems and, moving from opposite premises, they collapse wicked and tame problems into one another. It is the empirical observation of the practice of water governance that allows for ascertaining the falsity of the two paradoxes and calling for post-wickedness. This is an intellectual and practical predisposition that is consequential to making clarity on the distinction between wickedness and tameness, and leads to curiosity about the articulation of the two. The departure of post-wickedness from classical notions of wickedness lies in rejecting the idea that all policy and planning problems can be conflated into the same governance dimension. More precisely, post-wickedness derives from the realisation that wicked and tame problems originate from different orders of governance.

Wicked problems are unsolvable and their intractability is a necessary condition because they originate in meta-governance and their objective is to find definitive answers to transcendental questions on the organisation of society. Tame problems are solvable, however complex they might be, because they originate in second-order governance or the realm of policy implementation and aim to achieve specific and measurable goals informed by meta-governance and defined by first-order governance. Distinguishing between wicked and tame problems by locating them across the different orders of governance helps shed light on the fact that participatory water governance is a wicked problem when discussed in meta-governance. Here, the necessity of wickedness leads to the impossibility of solving this problem once and for all, but only to reinterpret that. At the same time, participatory water governance is a tame problem when discussed in second-order governance where multiple possible outcomes are possible depending on the influence exerted on the governance sub-system by the dominant paradigm. Hence, post-wickedness contributes to shaping a research agenda concerned with the duality of the necessity of wickedness and the possibilities of tameness. This is a quintessentially critical realist agenda. As dominant paradigms influence mainstream policy, emerging paradigms inspire social resistance to orthodoxy, and the merits of dominant and emerging paradigms are revisited in light of the collective experience with the policies and processes they inform, the terrain delineated by post-wickedness is the terrain where the theory and practice of social and environmental justice is contested.

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