



What's the Problem? Multilevel Governance and Problem-Solving

Eva Thomann , Philipp Trein, and Martino Maggetti

The study of multilevel governance (MLG) is fundamentally concerned with the capacity of MLG to effectively deal with policy problems. However, the notion of problem-solving itself remains vague. Moreover, MLG research prioritizes questions of structure and agency, while neglecting the role and nature of policy problems themselves. This symposium defines problem-solving in both procedural and operational terms. The introduction reviews relevant attributes of policy problems and existing assumptions about their influence on problem-solving. By adding uncertainty, tractability, and three political attributes (power, conflict, salience), we propose an extended list of attributes of policy problems that matter for problem-solving, and link them to different notions of procedural and operational problem-solving in MLG. The contributions address the challenges facing problem-solving in the European Union, adopting a particular focus on the characteristics of policy problems. Empirical cases include the European Semester, Brexit, the governance of the swine flu pandemic, and climate change.

KEY WORDS: multilevel governance, problem-solving, problem tractability, wicked problems

问题是什么？多层治理和问题解决作者：

有关多层治理(MLG)的研究本质上聚焦于多层治理在有效应对政策问题时的能力。然而,问题解决 (*problem-solving*)这一概念本身还较为模糊。此外,MLG研究优先关注有关结构和政府机构的问题,却忽视了政策问题自身扮演的角色和本质。此论文集从过程和操作两个方面对问题解决进行了定义。论文集导论检验了政策问题的相关性质,并检验了关于这些性质对问题解决所产生的影响的现有假设。通过引入不稳定性、易处理性、和三种政治性质(权力、冲突和显著性),笔者提出了更多有关政策问题的性质,这些性质对问题解决尤为重要。笔者随后将这些性质与MLG中属于过程性还是操作性的问题解决概念进行关联。通过特别聚焦于政策问题的特征,笔者的研究贡献应对了欧盟问题解决所面临的挑战。实证案例包括欧洲学期、英国脱欧、猪流感大流行治理和气候变化。

关键词: 多层治理, 问题解决, 问题易处理性, 棘手问题

¿Cuál es el problema? Gobernanza multinivel y resolución de problemas

El estudio de la gobernanza multinivel (MLG) se ocupa fundamentalmente de la capacidad de la gobernanza multinivel para abordar con eficacia los problemas de políticas. Sin embargo, la noción de resolución de problemas sigue siendo vaga. Además, la investigación de MLG prioriza las cuestiones de estructura y agencia, mientras que descuida el papel y la naturaleza de los problemas de

políticas en sí mismos. Este simposio define la resolución de problemas tanto en términos de procedimiento como operativos. La introducción revisa los atributos relevantes de los problemas de políticas y las suposiciones existentes sobre su influencia en la resolución de problemas. Al agregar incertidumbre, capacidad de tratamiento y tres atributos políticos (poder, conflicto, prominencia), proponemos una lista extendida de atributos de problemas de política que son importantes para la resolución de problemas, y los vinculamos con diferentes nociones de resolución de problemas operacionales y de procedimiento en MLG. Las contribuciones abordan los desafíos que enfrenta la resolución de problemas en la Unión Europea, adoptando un enfoque particular en las características de los problemas de política. Los casos empíricos incluyen el Semestre Europeo, Brexit, el gobierno de la pandemia de gripe porcina y el cambio climático.

PALABRAS CLAVES: gobernanza multinivel, resolución de problemas, capacidad de resolución de problemas, problemas retorcidos

Introduction

Not all problems are created equal. Problem-solving approaches that are effective for one sort of problem are not likely to work for other sorts.

Chisholm (1995:472)

This symposium highlights the importance of accounting for the characteristics of policy problems in understanding problem-solving dynamics in multilevel systems. Multilevel polities, such as the European Union (EU), facilitate the governance of “wicked” transboundary policy problems such as environmental governance or health risks (Adelle & Russel, 2013). These problems need to be tackled with an approach that goes beyond the boundaries of the nation state. At the same time, however, maintaining and reforming multilevel systems can open up policy challenges themselves (Maggetti & Trein, 2019). The current legitimacy challenges facing the EU illustrate this dilemma: on the one hand, the EU derives its justification as a governance system above the nation state partly from its problem-solving capacity resulting in high output legitimacy (Schmidt, 2013). On the other hand, the intensified political integration that came along with it is meeting fierce resistance, as recently expressed in the Brexit vote.

Multilevel governance (MLG) constitutes a “system of continuous negotiation among nested governments at several territorial tiers—supranational, national, regional and local” (Hooghe & Marks, 2003), such as the EU. Therein, decision making is shared between public and private actors situated at different levels (Benz, 2009; Hooghe & Marks, 2016). MLG systems vary in their degree of political, institutional, and policy integration as well as in their extent of functional differentiation (see, Hooghe & Marks, 2016; Trein, 2017). Functional differentiation refers to the delegation of authority to task-specific jurisdictions that integrate different levels to deal with a given policy challenge (Hooghe & Marks, 2003, pp. 237-9; Leuffen, Rittberger & Schimmelfennig, 2012).

Although scholars have frequently referred to problem-solving in MLG, since the early scholarship (e.g., Benz, 2000; Scharpf, 1997) to more recent literature

(e.g., Falkner, 2016; Lodge & Wegrich, 2014), the concept has remained somewhat fuzzy and metaphorical. Yet, understanding the capacity to solve complex policy problems is crucial for maintaining multilevel structures such as the EU. A recent collection of articles examined how structural factors affect problem-solving (Trein, Thomann & Maggetti, 2019b) by specifically pointing out how multilevel arrangements can also generate new problems (Maggetti & Trein, 2019). In the present symposium, we argue that the *attributes of policy problems* are important for understanding the processes, outputs and outcomes of MLG settings (Peters, 2005; Thomann, 2018a,b), and therefore, for their problem-solving capacity. Problem-solving in multilevel systems is particularly relevant with respect to problems which imply high degrees of uncertainty with regard to risks, technologies, and consequences of policies (Head, 2008). However, the relevant attributes of policy problems and their implications for problem-solving remain an under-researched aspect of the MLG literature.

This symposium addresses the challenges of problem-solving in MLG by adopting a particular focus on the attributes of the policy problems—whereby instances of policy problems are Brexit, the European Semester (ES), the governance of health risks, environmental governance, and the enforcement of EU law. We adopt Sabatier's (2007: 3) encompassing definition of policy-making as a process in which “problems are conceptualized and brought to government for solution; governmental institutions formulate alternatives and select policy solutions; and those solutions get implemented, evaluated, and revised.” Problem-solving can thereby be conceived of either as a process, for example, a specific policy-making mode, that aims at dealing with pressing policy challenges (Héritier, 1996; Scharpf, 1997; Trein et al., 2019b). Or we can think of problem-solving from an outcome-oriented, operational perspective, that is, whether and how a policy achieves results that solve the original policy problem at stake (Thomann & Sager, 2017a,b). Accordingly, problem-solving happens at different stages of the policy cycle such as decision making, instrument choice, and policy implementation.

In this introduction, we contribute to the literature by reviewing and synthesizing the existing scholarship on policy problems and problem-solving in MLG. This review addresses two questions: first, what are the relevant attributes of policy problems? We propose to extend the previous work by Peters (2005) and Hornbeek and Peters (2017) in order to account also for the uncertainty and tractability of policy problems as well as for political attributes (power, conflict, and salience). And second, how do policy problems relate to different modes of problem-solving in MLG? We then outline how the contributions of this symposium illustrate the link between the attributes of policy problems and the unfolding of corresponding problem-solving processes in MLG.

Policy Problems in Multilevel Governance

The choice of governance tools should match the characteristics of a given policy problem. Yet, as Peters (2005: 349) points out,

Although conceptions of policy design have well-developed conceptions of the instruments used to address public problems, they have much less developed conceptions of those problems themselves.

Hoornbeek and Peters (2017: 369) define a policy problem as a situation in which society and/or political systems define and frame particular *disconnections between the current state of affairs and desired states* as appropriate for pursuit of resolutions by government(s). Thinking about the nature of policy problems requires to acknowledge that the characteristics of policy problems are seldom “objectively given” or set into stone. Instead, the definition and framing of problems are fundamentally subjective, prone to social and political constructions and change (Chisholm, 1995; Turnbull & Hoppe, 2018). The ways in which policy problems are defined, put on the political agenda, framed, and tackled depend, for example, on the social construction of target groups in society as regards their power and deservingness (Schneider & Ingram, 1993) and other biases (Jones & Baumgartner, 2005). Problem definition and framing are also decisive for understanding mechanisms and outcomes of problem-solving in MLG (Chisholm, 1995; Peters, 2005). Accordingly, Hoornbeek and Peters (2017: 381) stress that:

the assessment of problems is tied to the ways in which political processes yield definitions of policy problems. Indeed, the very definition of a problem as a disconnection between existing conditions and desired states of affairs means that some persons(s) or group(s) must agree on desired states of affairs (. . .). This process of determining how policy-makers will define what is desirable is inherently political and it means that recommendations for policy design and policy instrumentation will be tied to the underlying politics associated with the problem’s definition to at least some degree.

If problems are socially constructed, this raises the question of what counts as an accurate problem definition (Turnbull & Hoppe, 2018). Dery (1984) offers three criteria for a “good” problem definition from a problem-solving perspective. First, the definition should fit a feasible solution; second, it should be amenable to organizational and interorganizational action; and third, the problem definition should be seen as a realistic opportunity to improve a problematic situation according to a majority opinion.

What are the relevant attributes of policy problems that influence the processes and outcomes or problem-solving in MLG? We start by identifying an ongoing discussion in the policy sciences about “wicked” policy problems and alternative conceptualizations based on the notion of “structuredness.” Related to this, the regulation literature has dealt with issues of complexity, conflict, uncertainty, and crisis, and with the appropriate governance responses to them. Furthermore, research on policy implementation distinguishes different degrees of “problem tractability” and emphasizes the importance of issue salience. These different concepts overlap to some extent. Yet they also point to different attributes

of policy problems which have most comprehensively been captured with a recent synthesis of the attributes of policy problems (Peters, 2005; Hornbeek & Peters, 2017). Our review enables us to refine and complement Peters' (2005) model in order to account for aspects of policy problems that are sensitive to social and political construction.

"Wicked" or "Unstructured" Problems

Borrowed from the planning literature, the concept of "wicked" problems draws a distinction between ordinary or "tame" policy problems and complex, intractable, open-ended, and unpredictable policy problems for which conventional strategies or techniques do not apply (Alford & Head, 2017; Newman & Head, 2017; Rittel & Webber, 1973). Wicked problems—and even more so "super wicked" problems (Levin, Cashore, Bernstein & Auld, 2012)—are often seen as immune to linear, rational, or scientific methods of problem-solving (Newman & Head, 2017). Given that Rittel and Webber (1973) propose no less than ten criteria for wicked problems, the concept is too vague to be meaningfully confined to certain problems only, and difficult to operationalize empirically (Alford & Head, 2017; Peters, 2017). The answers to the question of what wicked problems are and how they should be tackled vary widely (Turnbull & Hoppe, 2018) although a recent review identifies increasing agreement between authors (Danken, Dribbisch & Lange, 2016).

Turnbull and Hoppe (2018) point out that wickedness was initially introduced in order to (falsely) distinguish all social problems from science problems—thus, by definition, all policy problems are wicked (see also Newman & Head, 2017; Peters, 2017). Hisschemöller and Hoppe (1995) reiterated in Turnbull and Hoppe (2018) argue instead that problems differ in the degree to which they are well defined or *structured*. Ill-structured problems are difficult to manage effectively and defy the development of simple policy designs (Peters, 2017). This structuredness or "problematicity" of problems comprises two elements. On the one hand, policy problems vary in the extent to which there *is agreement or conflict about underlying values and norms* about means or ends of the policy. The most extreme manifestation of this can be with so-called morality policies that concern fundamental questions about which no compromise is possible (Engeli & Varone, 2011; Mooney, 1999: 675; Thomann, 2018b). The other dimension of "structuredness" is the extent to which *certainty* about the required and available knowledge needed to address a policy problem. Uncertainty corresponds to risks for which it is impossible to assign probabilities to their occurrence (Tosun, 2013). Similar to Hisschemöller and Hoppe (1995), Alford and Head (2017) propose a ninefold typology of wicked problems along two main dimensions. First, the complexity of the problem refers to the question whether the problem and/or its solution is clear. Second, the difficulty with respect to stakeholders relates to the propensity of those involved to enable the problem to be properly addressed. This includes the locus of relevant knowledge, the existence of conflicting interests, and the relative power of policy managers and stakeholders.

Problem Tractability and Issue Saliency

Issues of uncertainty, complexity, and conflict have also been discussed under the umbrella term of “problem tractability.” Schrefler (2010) for instance defines problem tractability as the question whether a policy issue can be routinely addressed with available scientific knowledge and whether the medium- and long-term consequences of possible policy approaches are unknown or risky. Alford and Head (2017: 404) provide a somewhat different definition according to which a problem is tractable when neither knowledge nor interests are fragmented between the managers and the stakeholders, and neither has a relative power advantage. A “moderately intractable” problem prevails when knowledge is fragmented among various parties, taking time and effort to access, but the stakeholders broadly consent or are at least indifferent about the nature of the problem and the possible solutions. Finally, an intractable problem is where both knowledge and interests are fractured among the various actors. Hisschemöller and Hoppe (1995) in turn define intractable problems as fully unstructured problems with low certainty about the relevant knowledge and a lack of consensus regarding norms and values where policy-makers almost inevitably persevere in addressing the “wrong” problem and do not take seriously certain viewpoints or interests.

Sabatier and Mazmanian (1980) provide a more distinctive and principled definition of problem tractability as *those aspects of a social problems which affect the ability of actors involved in the policy process to achieve the policy’s objectives* (see also Thomann, 2019). This entails three questions. First, is there a clear understanding of the behavioral changes necessary to resolve the problem? This can be measured through the availability of valid technical theory and technology. Second, is the behavior of the regulated target group heterogeneous, does it involve a large proportion of the population? We can capture this aspect through the diversity of target group behavior as well as the size of the target group in relation to the population. Third, how extensive is the amount of behavioral change required? In this vein, Thomann (2019), for instance, distinguishes “micro-issues” that refer to very rare situations, merely administrative procedures, and/or imply only negligible costs or benefits for the addressees, from macro issues that refer to frequently occurring situations and have notable consequences for the addressees.

Research on agenda setting and policy implementation has also emphasized the importance of *issue saliency* for how actors react to different policies (Jones & Baumgartner, 2005; Versluis, 2003, 2007). Saliency is about the visibility of and the importance attached to a topic, the main indicator being public attention. As such it captures an important aspect of how problems and target groups are shaped by social and political processes. Saliency can indicate either the high importance of a policy or its political contestation (Versluis, 2003). When responding to EU policies, domestic actors pick and choose where to focus their attention and tend to ignore issues they deem less salient (Spendzharova & Versluis, 2013).

Policy Problems: An Integrated Approach

Peters (2005) (see also Hoornbeek & Peters, 2017) suggests seven attributes of policy problems that are relevant for problem-solving. In assuming that policy problems are “real” and have relatively unambiguous characteristics, Peters’ (2005) framework is more “objectivist” than other approaches (Hoornbeek & Peters, 2017). We now discuss Peters’ (2005) criteria and integrate the previous discussion (see Table 1). We argue that Peters’ list neglects some relevant attributes of policy problems. First, uncertainty is a core attribute of policy problems. Moreover, the notion of problem tractability put forward by Sabatier and Mazmanian (1980) is more precise than Peters’ (2005) categories of scope and scale in capturing relevant aspects of problems which affect the ability of policy implementers to achieve the policy’s objectives. Finally, the list does not feature key attributes that are shaped by the politics of problem-solving. We identify three political attributes in the literature: power, conflict, and issue salience.

According to Peters (2005), three *core attributes* of policy problems are solubility, complexity, and scale.

Problem solubility refers to the question whether a problem has a finite and definable solution or whether it is an acute and chronic problem that is likely to appear again and again on the agenda of government (Peters, 2005). As such, (in-)solubility bears resemblance with wicked problems resisting a clear solution as

Table 1. Synthesis of Attributes of Policy Problems

Attribute	Definition
<i>Core attributes of policy problems</i>	
Solubility	Can the problem be solved? Is the problem likely to reoccur/in need to be readdressed over time?
Complexity	How complex is the problem? Political or programmatic (causal and technical)
Scale	Is the problem a large one that is not subject to disaggregation?
Uncertainty	Unpredictability of occurrence and effects of solutions
<i>Attributes tied to instruments</i>	
Divisibility	Are the solutions divisible—can they be disaggregated to the advantage of particular constituencies?
Monetarization	Is the problem identified and/or solvable in terms of money? —
Scope	Are there large numbers of persons, organizations, or activities involved in creating the problem?
Interdependence	Can the problem be addressed well by a single agency or ministry?
Tractability	Aspects of problems affecting the ability of policy implementers to achieve the policy’s objectives: <ul style="list-style-type: none"> • clear understanding of the behavioral changes required • diversity of target group behavior and size of the target group • extent of behavioral change required
<i>Political attributes</i>	
Power	Relative power of managers and stakeholders
Conflict	Degree of agreement or conflict about underlying interests, values, and norms (means or ends)
Salience	Visibility of and importance attached to a topic

Source: Adapted from Hoornbeek and Peters (2017: 367). **Bold:** attributes added by authors.

well as with the aspect of (un)certainty defining problem structuredness. It also emphasizes the time dimension as it the case with “super wicked” problems.

Complexity is a multifaceted attribute of policy problems. Political complexity refers to the number of different actors involved, and hence the difficulty of reaching an agreement among them. Political complexity has also been discussed in view of the potential conflict resulting from diverging values and interests in the wicked problems and structuredness literature, which touches also upon the question of their power. The size and diversity of target groups are a core aspect of problem tractability. Programmatic complexity can refer to the extent of technical expertise required to understand the problem. Moreover, and importantly, there can be multiple and competing causal models for a given policy problem, which leads to conflict among experts (Peters, 2005: 358-359). The wicked problems literature refers to programmatic complexity when arguing that some problems defy a full understanding of their nature and implications.

The *scale* of the questions confronting government refers to the magnitude of the problem and the range of the effects it can produce—which determines whether a problem can be disaggregated into smaller, manageable components, or whether it requires a comprehensive solution or nothing at all (Peters, 2005: 360-361). This aspect is somewhat discussed in the wicked problems literature and it is also somehow reflected in the definition of crises, but it does not range among the characteristics of “problem structuredness.” Finally, scale is related to the question of the extent of behavioral change required by a policy, as an aspect of problem tractability.

Peters (2005) adds four further attributes that are tied to instruments, namely divisibility, monetarization, scope, and interdependence.

Divisibility refers to the nature of the resources required to solve the problem. Essentially, problems that entail collective action and produce diffuse benefits may be more difficult to solve than when benefits are more immediate and more appropriable by individuals, as it is difficult to generate and maintain support for policies that yield only indirect benefits to particular constituencies (Hoornebeek & Peters, 2017; Peters, 2005). To a degree, divisibility may express itself through issue salience; however, it is an aspect of policy problems that other strands of literature tend to have neglected.

Monetarization refers to the question whether a policy problem can be addressed using money and subsidies. This aspect influences which solutions are discussed and how prominent distributive questions are in these discussions. It has not been explicitly discussed in relation to wickedness, structuredness, or problem tractability.

The *scope of activity* or behaviors that contribute to the creation of the problem can also vary. This refers essentially to the number of people, activities, and organizations involved with a problem, and to the extent to which these are well defined. This in turn relates to the broader question of government capacity to carry out different activities (Lodge & Wegrich, 2014). The scope of activity is one pillar defining wicked problems with respect to stakeholders. Scope is the core idea underlying the more refined definition of problem tractability put forward by Sabatier and Mazmanian (1980).

Interdependence captures how policy problems vary in the extent to which they are confined or confinable to a single policy domain (Peters, 2005). This relates to the extent to which policy problems lie within the jurisdiction of single ministries, agencies, or organizations. Interdependence affects the difficulty and controversy in the selection and implementation of instruments. Interdependence is one key aspect defining wicked problems (interrelatedness and multitude of stakeholders).

In sum, Peters (2005) list of problem attributes captures most attributes considered as relevant in the different strands of literature on policy problems. It also includes other neglected attributes such as divisibility and monetarization and the relevance of time for solubility. As Hoornbeek and Peters (2017) admit, this list of policy attributes is rather long. When analyzing a given set of policy problems, there are various ways in which the attributes can be aggregated into a more parsimonious conceptual structure. Some attributes may be more analytically or practically relevant than others, depending on the given context (Table 1).

Notions of Problem-Solving and Their Link with Policy Problems

Problem-solving has been described as a linear, rational activity consisting of five steps: problem identification, problem representation, generating alternatives, and selecting solutions (Chisholm, 1995). However, there is in fact a broad variety of very different understandings of problem-solving in the literature. The contribution by Irepoglu Carreras (2019) shows how the different understandings of problem-solving are reflected in different strands of the MLG literature. We adopt the encompassing definition developed by Maggetti and Trein (2019: 3), according to which problem-solving implies that the policy-makers and other decision makers in charge of defining, deciding, implementing, and evaluating policies:

(a) Make policies in the sense of “puzzling” (on society’s behalf) as opposed to “powering” (Hecló, 1974); So as to (b) deal with problems that are perceived important for society by organized groups and/or by policymakers themselves (Cohen, March & Olsen, 1972); Through (c) the cooperative production of a policy output that is expected to be collectively beneficial in making a contribution to solve the policy problem at stake. (Elgström & Jönsson, 2000)

As Trein, Meyer and Maggetti (2019a), Trein et al. (2019b) discuss, problem-solving entails political action intended to solve policy problem. This definition can include both problem-solving processes and the outcomes of such processes. We now discuss prominent notions of problem-solving in policy analysis and link them to policy problems.

Procedural Notions of Problem-Solving

Procedural notions of problem-solving include among others problem structuring, a collaborative decision making mode, learning and knowledge utilization, and problem management.

Problem Structuring. Hisschemöller and Hoppe (1995) argue that policy-makers can “restructure” problems when they define the issue. Policy-makers tend to move *from unstructured to more structured* problems. For structured, technical problems (with high levels of certainty and high consensus on values and norms), a “rule strategy” of policy-making is applied that relies on rules to achieve clearly defined goals as effectively as possible. For moderately structured problems with unclear means but clear ends, a “negotiation strategy” serves to address the conflict about the means to reach the policy goal most effectively and efficiently. For moderately structured problems with clear means but unclear ends, an “accommodation strategy” serves the aim of finding a compromise about the values most relevant in the conflicting parties. This strategy often focuses on procedural means to enable future consensus (e.g., Engeli & Varone, 2011). For fully unstructured problems, Hisschemöller and Hoppe (1995) suggest a “learning strategy” which focuses on integrating, evaluating, and deliberating contradictory information and arguments.

Collaborative Decision Making. In the context of EU policy-making, problem-solving has been discussed as a specific procedural pattern of negotiation and decision making between member states in the early drafting process of an EU policy, focusing on how interests are accommodated and actors coordinate. In contrast to bargaining, problem-solving is characterized by actors concentrating on joint production, common interests, and “creating value” rather than distributive issues and self-interest in order to focus on problem analysis, the definition of objectives, and the finding of possible solutions involving multiple attempts and trial and error (e.g., Benz, 2000; Scharpf, 1999). Thus, problem-solving in the EU is painted as comparatively denationalized and dominated by technical, scientific, and legal expertise (Héritier, 1996). Several features of the EU polity can be conducive to this mode of problem-solving: the continuity of negotiations fostering norms of stable reciprocity and cooperative solutions, informal codes of conduct and a consensual culture, and feelings of solidarity emerging from interpersonal relationships during negotiations (Elgström & Jönsson, 2000).

In a very similar vein, using Heclo’s distinction between powering and puzzling, Maggetti and Trein (2019) suggest that problem-solving entails “puzzling” on society’s behalf. In his seminal book, Heclo held that,

Governments not only “power” (or whatever the verb form of that approach might be); they also puzzle. Policy-making is a form of collective puzzlement on society’s behalf; it entails both deciding and knowing. The process of making pension, unemployment, and superannuation policies has extended beyond deciding what “wants” to accommodate, to include problems of knowing who might want something, what is wanted, what should be wanted, and how to turn even the most sweet-tempered general agreement into concrete collective action. (Heclo, 1974, 305)

In this understanding, problem-solving is a collaborative decision making style in which policy-makers intend to solve the policy problem, that is, seek policy solutions, and not only pursue their own narrow political agenda.

Divisibility matters for this kind of problem-solving: Policy-making regarding non-divisible policy problems may suffer from collective action problems which complicate building support for a policy (Hoornbeek & Peters, 2017). Accordingly, problem-solving processes have been attributed mainly to distributive and regulatory types of policy problems (Elgström & Jönsson, 2000; Héritier, 1996). Moreover, whether or not problem-solving takes place is a matter of *issue salience*. Falkner (2016) argues that how EU integration unfolds will depend on how the crisis and crisis-induced problem-solving needs are being interpreted and communicated. Joint problem-solving can be promoted as an answer to recent crises in the EU within an “integration-friendly” framing of crisis. Hoornbeek and Peters (2017: 367) further specify how problem attributes affect policy-making processes. For instance, *solubility* influences whether a problem can be addressed through a one-time intervention or requires ongoing efforts. Moreover, *complexity* suggests a need to focus on processes: political complexity requires reaching a common understanding of the problem, while technical complexity calls for more expertise or research (see below about knowledge utilization). Problems that lend themselves to *monetarizations* may involve policy-making processes that revolve around expenditures. Policy-making processes tend to be very complex for problems with a broad scope, and interdependence exacerbates difficulties in the policy-making process.

Learning and Knowledge Utilization. An important dimension of problem-solving in MLG is learning, defined as “the acquisition of new relevant information that permits the updating of beliefs about the effects of a new policy” (Braun & Gilardi, 2006: 308). Learning is a process that results in collective products such as new shared ideas, strategies, rules, or policies (Heikkilä & Gerlak, 2013: 486; Zito & Schout, 2009; Dunlop et al., 2018). Learning can involve the instrumental use of scientific knowledge in policy-making.

The *tractability* of policy problems directly influences whether and what kind of learning takes place for instance when assessing risks, engaging in regulatory impact assessment or other forms of evidence-based policy-making. This is because it is easier to define the payoffs associated with different courses of action when tractability is high. Thus, we would expect in MLG to apply standard operating procedures and engage in top-down hierarchical or bargaining-based modes of learning under conditions of high problem tractability. Conversely, when policy problems are intractable, more bottom-up, reflexive, epistemic, and contingent modes of learning come into play (Dunlop & Radaelli, 2018). According to Schrefler (2010), knowledge utilization should especially occur in situations of low problem tractability and low levels of conflict around a policy. Conversely, when *conflict* is high, the use of scientific knowledge should be symbolic. For more tractable policy problems, knowledge is expected to be used instrumentally or strategically.

It has been argued for the EU that the success of these different learning strategies should interact with the extent of differentiation (Zito & Schout, 2009). Several properties of what Heikkilä and Gerlak (2013) call the “technological and functional domain” of a policy further influence the success of learning, such as its “publicness,” levels of *ambiguity* or *uncertainty*, available information, and technology. Moreover, conditions of crisis development and termination define how a crisis progresses over time (e.g., fast- or slow-burning, cathartic, or long shadow) which may facilitate or hinder learning (Kamkhaji & Radaelli, 2017). In the EU, events such as the euro crisis have led to intensive learning within crises, such as in the form of “contingent learning” as a fast, surprise-triggered understanding of how cue–outcome associations work, but also more gradually between crises over time (Falkner, 2016; Kamkhaji & Radaelli, 2017).

Knowledge utilization is also a key aspect of the use of the *precautionary principle* which is a procedure used to handle uncertain regulatory risks in the EU. In the event of a potential risk, even if this risk cannot be fully demonstrated or quantified or its effects determined because of the insufficiency or inclusive nature of the scientific data, the precautionary principle enables policy-makers to take regulatory action before risks materialize in order to prevent unnecessary harm. Typically such policies impose constraints on the actions of target groups (e.g., bans on the production or sale of certain products), subject to review when new scientific data become available (Thomann, 2018a; Tosun, 2013; Trein, 2018).

Managing Wicked Problems. The literature consistently suggests two remedies to manage wicked problems (Danken et al., 2016). First, *cross-boundary collaboration* is important, with the involvement of external stakeholders, interorganizational collaboration among governmental bodies, and networked forms of governance; second, public leadership and management matter, in terms of distinct *managerial skills* and collaborative competences. Lodge and Wegrich (2014) further emphasize the crucial role of *administrative capacity* in terms of delivery, coordination, regulation, and analysis for tackling contemporary crises of the states’ problem-solving capabilities. They argue that the way in which substantive and procedural governance instruments are used depend on dominant ideas and functional demands determined by specific problem constellations (Lodge & Wegrich, 2014: 17). The successful use of instruments in turn depends on administrative capacities and vice versa. These governance capacities lie increasingly outside the boundaries of the state, being tied into a network of public, private, and arguably MLG systems.

Operational Notions of Problem-Solving

As Thomann and Sager (2017a,b) highlight, there is a more operational understanding of problem-solving which refers to the *results* of decision making, that is, the extent to which policy problems are effectively being addressed (see Peters & Pierre, 2016).¹ This perspective significantly broadens prominent notions of problem-solving by highlighting the fact that decision making goes on after policies have been adopted, during the phases of implementation (Sabatier & Mazmanian,

1980), policy evaluation, and the maintenance, revision, or termination of policies. Thus, from a results-oriented perspective, not only the “goodness” of a policy decision but also the goodness of implementation become key. Hoornbeek and Peters (2017: 378) note the importance of *interdependence* for operational problem-solving:

Interdependent problems engage multiple organizations, and this increases the complexity of achieving resolutions to the problem. By contrast, problems that are not interdependent in this manner may be more easily addressed.

One consequence of the management of interdependent problems is that there is a demand for coordination, and potentially even the integration, of existing policies and organizations. Therefore, decision makers tackle complex problems, such as environmental protection or climate change, with integrated strategies and reforms (Trein et al., 2019a).

Jordan (1999) presents a 2 × 2 matrix for analyzing problem-solving in operational terms (Weale, 1992), see Table 2. On the one hand, the result of decision making can be a policy output, that is, “the laws, regulations and institutions that governments employ in dealing with policy problems” (Weale, 1992: 45) and policy outcomes which refer to “the effects of those measures upon the state of the world” (ibid). On the other hand, problem-solving can be seen as the question whether policy outputs and outcomes correspond to objectives set out by policy-makers (“conformance”; cells 1 and 2), or the focus can be whether policy outputs or outcomes are actually suitable responses to address the underlying policy problem (“performance” as in cells 3 and 4; see also Thomann & Sager, 2017a).

These operational understandings of problem-solving are less prominently the focus of MLG studies, but nonetheless relevant. Understanding problem-solving beyond policy adoption in MLG invites the researcher to consider the insights from the literatures on policy instrument choice, legal and practical policy implementation and enforcement (Scholten, 2017; Treib, 2014), regulatory quality (Radaelli, 2004), and policy evaluation (Pattyn, Van Voorst, Mastenbroek & Dunlop, 2018).

Instrument Choice. The most prominently discussed aspect of the link between policy problems and operational problem-solving is that of instrument choice

Table 2. Operational Understandings of Problem-Solving

	Focus of analysis	
	Policy output	Policy outcome
Orientation to problem		
Policy goals	1, for example, legal compliance	2, for example, practical implementation
Policy problem	3, for example, customization	4, for example, policy evaluation

Source: Adapted from Jordan (1999: 72). Examples are our own (non-exhaustive).

(Howlett & Cashore, 2009). For instance, Hoornbeek and Peters (2017: 377) point out that:

The scope of activities giving rise to a problem affects the means used to address it. Where many individuals and organizations are involved in the problem, solving the problem becomes a more complex endeavour that may need to be addressed by a wide range of policy designs and instruments. Conversely, where the scope of activity is narrow, focused regulatory policy instruments may be reasonably employed to address the problem.

Moreover, *scale* influences the need to invest in big solutions commensurate with the problem at hand (Hoornbeek & Peters, 2017). Peters (2005: 361-362) notes that from an operational perspective, scale is to an extent a question of instrument choice:

The style of policy making in Europe tends to be large scale, at least in terms of gaining compliance among the member states. This style can be contrasted with that in other MLG arrangements (...) in which the components of the union are granted more latitude in interpreting central government policy, and are more autonomous. The drive for conformity has to some extent been lessened by the adoption of the Open Method of Coordination (...) and its emphasis on benchmarks and standards rather than regulations, so that the scale of the policy system may be lessening.

Hoornbeek and Peters (2017: 367) outline how *insoluble* problems should be addressed by instruments that address the continuing nature of the problem. The incremental use of targeted policy instruments can help with small-scale problems, but would be less useful for large-scale problems. One can address *divisible* problems with policy tools that build support from policy beneficiaries, but non-divisible policy solutions may require broader support. Problems of narrow *scope* are easier to address with regulatory solutions than problems with broad scope. Finally, *interdependent* problems often come along with “lowest common denominator” instrument choices.

Implementation and Enforcement. Policy implementation and enforcement crucially serve to maintain the delicate balance between the governmental and supranational elements in the EU (Jordan, 1999: 69; Scholten, 2017; Thomann, 2019). Particularly,

the troublesome implementation of EU environmental policies is a microcosm of the wider story of integration and the conflicting forces and contradictions which have characterised the EU throughout its journey from an intergovernmental agreement to a multilevel polity. These contradictions include the maintenance of unity in diversity, the competition

between national priorities and supranational imperatives, and the distribution of powers between actors at different spatial levels of government. If anything, they are more starkly revealed in the implementation phase when the EU's policies are put to the test than at earlier stages in the policy process, where symbolic gestures and rhetorical commitments are more likely to secure consensus. Implementation is at the sharp end of the EU policy process, where a burgeoning supranational legal order meets a decentralised policy delivery system dominated by states. (Jordan 1999: 87)

One example of operational problem-solving is the “customization” of EU policies by member states, where the latter adapt and change the former to domestic preferences and contexts (Thomann, 2019). Moreover, operational perspectives highlight the varieties of what could be “successful” problem-solving—procedural, programmatic, or political (Marsh & McConnell, 2010; Weaver, 2014), while the EU MLG literature often reduces this to the question of compliance with EU decisions (Treib, 2014). The policy implementation perspective offers important insights into how *problem tractability* and *issue salience* as well as levels of *ambiguity and conflict* interact with different (EU) governance and implementation modes when affecting actual implementation success (Heidbreder, 2017; Matland, 1995; Sabatier & Mazmanian, 1980; Spendzharova & Versluis, 2013; Thomann, 2019; Versluis, 2003, 2007).

The Contributions of the Symposium

The symposium contributions scrutinize the interactions between formal aspects of multilevel systems and policy problems, especially in order to understand “governance in turbulent times” (Ansell, Trondal & Øgård, 2017). They analyze how the characteristics of policy problems shape problem-solving dynamics in MLG, from different perspectives but always focusing on *critical cases*, that is studying cases of MLG of wicked problems and cases of disintegration by applying a *comparative perspective*. In doing so, these studies provide valuable information on how MLG arrangement can deal with such difficult problems.

The article by Papadopoulos and Piattoni (2019) deals with learning in the ES. The authors discuss some of the problems with the credibility and eventually the problem-solving capacity of the ES. Especially, the authors underline four problems with the Semester. Firstly, they point to a democratic deficit that stems from the dominance of the executive and bureaucracy over parliamentary actors. Second, they hold that the strict budgetary rules preempt a solution based on collaboration and learning. Third, the authors suggest that asymmetric intergovernmentalism results in bargaining instead of learning. Fourth, the paper contends that the strict conditions for Eurozone members outside the ES are a further impediment to learning.

The authors start out by linking policy ownership to learning, in the context of European governance. They hold that, in the ES, learning should happen in a reflexive mode. After that the authors point the reader to the dominance of the

executive as well as the sidelining of parliaments and the absence of the public in the decision making, in the ES. In the next step, the authors argue that policy constitutionalization, that is, the creation of fiscal rules through European regulations and the rulings of the European Court of Justice, is an impediment to learning because it creates rules that limit reflexive learning and flexible policy adoption. Furthermore, the structure of intergovernmental bargaining in EU fiscal politics and the ES undermines learning because the European Council fosters decision making through bargaining among member states.

The authors conclude with a pessimistic outlook on the problem-solving capacity of the ES. "Ultimately, a 'puzzling' and problem-solving approach characterizing MLG within the ES is of relatively limited relevance compared to the 'powering' aspects of European economic governance" (Papadopoulos & Piattoni, 2019). This paper makes an important contribution to understanding how attributes of the policy problem are linked to problem-solving.

The article by Versluis, van Asselt and Kim (2019) focuses on the swine flu pandemic as an instance of a complex problem tackled in multilevel settings. A core insight concerns the role of uncertainty in the regulation of this type of problem and how this uncertainty is managed and communicated by policy-makers. The swine flu pandemic represents indeed a crisis moment that was relatively novel, unforeseen, fast-moving, and whose scope and consequences were not easily predictable. What is more, the surrounding scientific knowledge was not very firm, being based on limited empirical evidence and theoretically speculative models.

The authors then show how policy responses vary considerably between different levels as the World Health Organization (WHO) and the EU dealt with the same problem in distinctive ways. On the one hand, the WHO did not explicitly address the uncertainty surrounding the pandemic. It rather adopted a prescriptive approach that has been criticized for overstating the pandemic's expected outcome and for its lack of transparency. On the other hand, the EU agencies in charge of the matter paid much more attention to existing uncertainty and were explicit in communicating it to the public. Confronted with these discrepant policy recommendations, national reactions to the pandemic varied greatly, due to a number of contextual political factors. The conclusion by the authors points to the usefulness for governmental organizations to provide uncertainty information. Conversely, without openness about the unknowns, decision making may become negatively politicized, which in turn produces undesirable side effects and is less conducive to problem-solving.

The contribution by Fossum (2019) uses the example of Brexit in order to inform and improve existing notions of problem wickedness. Fossum convincingly demonstrates how Brexit can be seen as a prime example of a wicked problem. The problem is hard to define: it is not clear what Brexit really is a problem of, and public opinion is very polarized. Moreover, there is no stopping rule for establishing when the issue is resolved and who has the right to take ultimate decisions. Brexit also involves fierce struggles over key political and societal values, its effects are likely to be irreversible, and it is a problem without a clear

solution. Brexit is, moreover, a unique problem and in many ways a symptom of other, social and economic, problems.

The question the article explores then is: how can the case of Brexit inform our understanding of wicked problems? In so doing, Fossum argues that a key aspect for understanding the wicked problem of Brexit and potential approaches to solving it is that of what he calls political order. He defines political order as two core meanings: a settled order, or orderliness as the presence or absence of rules. Along these two dimensions of political order (polity change/structural reconfiguration, and orderliness), he outlines four possible scenarios for Brexit. Fossum argues that the neglect of political order in the literature on wicked problems is problematic because matters of political order and change have implications for terms under which policy-making takes place. Using the example of the Good Friday Agreement, Fossum demonstrates that policy implications are impossible to capture without tackling the problem of political order as well.

He concludes that the policy literature has tended to focus on cognitively or politically demanding issues, which has enabled them to focus on policy substance. However, structurally or normatively demanding problems tend to become heavily politicized and questions of value and political order tend to appear, which gives a different meaning and significance to wicked beyond the realm of policy. Thus, Fossum's contribution is a welcome step toward integrating political perspectives into the study of policy problems in MLG, as we have suggested in Table 1 above. Simultaneously, Fossum demonstrates the relevance of policy perspectives for analyzing contemporary issues of EU integration.

The paper by Irepoglu Carreras compares the problem-solving capacity of federal states, notably Germany and the EU. The paper focuses on climate change action, which is an important case for problem-solving in multilevel contexts. Irepoglu Carreras discusses how the structure of the multilevel policy, the agency of different levels of government, and the interaction between them impacts on the outcome in the process of problem-solving. Through an extensive review of the existing literature, this article discusses the interplay of structure, agency, the process, which is essentially coordination, and the outcome of the problem-solving process.

The article proceeds with a discussion of why we need to take an encompassing theoretical approach to studying problem-solving that links structure and outcome through processual aspects. The author emphasizes that the processual aspects of problem-solving entail both a bottom-up and a top-down perspective. Against the background, the paper proceeds with a very well researched survey of the literature problem-solving in climate change action and its relation to environmental policy in the EU and in federal states, with a focus on Germany. The paper does a very good job in summarizing these strands of literature without getting lost in the details.

Irepoglu Carreras concludes that the emphasis in the literature on comparative federalism is explicitly on the structural elements related to problem-solving, such as the construction of the polity. More implicitly, the federalism literature focuses on the outcome dimension, and assesses, for example, policy convergence or divergence between levels. The MLG literature focuses explicitly on the process

of problem-solving, for example, through functional differentiation in task-specific jurisdictions. Furthermore, the MLG literature focuses implicitly on the agency of problem-solving.

Taken together, this symposium proposes a renewed, conceptually and empirically improved, and broadened emphasis on the study of problem-solving in the EU and in MLG more generally. With this introduction, we propose conceptual tools to study these phenomena and link attributes of policy problems with notions of problem-solving. The contributions illustrate the rich variety with which the EU responds to problem in its political processes and institutional architecture. In a next step, research should tackle not only procedural but also operational notions of problem-solving more systematically. A better understanding of how the EU responds to different types of policy problems is an important but neglected step toward generating theoretical and empirical knowledge about the actual extent to which MLG can improve the output legitimacy of governance, that is, actual problem-solving (Trein et al., 2019b). Given the current legitimacy challenges facing EU integration but also MLG more globally, this is a timely and important trajectory for further research.

Note

1. This focus on effectiveness seems to underlie some of the earlier work of Scharpf (1997, 2003). In these earlier works, successful problem-solving means effective coordination of the involved actors (and their interests) (Scharpf, 1999)—thus, Scharpf adopts a procedural rather than an operational understanding of problem-solving.

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