

Policy learning and policy change: Theorizing their relations from different perspectives

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Acknowledgments

This themed issue of the *Policy & Society* Journal results from a panel/workshop at the International Conference on Public Policy (Milan, 1-4 July 2015) and from initial discussions with our colleagues of the Department of Public Administration at Erasmus University Rotterdam. An earlier draft of this paper was presented at the Conference on 'Knowledge, Policymaking and Learning in European Metropolitan Areas' (Vrije Universiteit Brussel, 25-26 January 2016). We are grateful to the participants for their useful comments.

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Abstract

All politics and policy issues involve the accumulation of data about problems and solutions in context of social interactions. Drawing on these data, policy actors acquire, translate, and disseminate new information and knowledge toward achieving political endeavors and for revising or strengthening their policy-related beliefs over time. 'Policy learning' is a concept that refers to this cognitive and social dynamic. Articles in this special issue examine the relationship between policy learning and policy change from different theoretical perspectives. In this introduction to the special issue, we describe the current approaches that structure the field and gaps in knowledge separating policy learning and policy change. We introduce a refined conceptual framework to outline and compare the articles in the issue. These articles point to several facets of the learning phenomenon. First, the articles focus on the nature and consequences of learning by specific groups of society, such as advocacy coalitions, epistemic communities, citizens, street-level bureaucrats, and policy brokers. Second, they present learning processes in which information and experience are used to acquire new knowledge on policy objectives to substantiate and legitimize them or to change or form beliefs. Third, they identify several cognitive and social processes to strengthen the connection between policy learning and policy change. Finally, the articles point to several psychological, social, and institutional factors fostering or impeding these cognitive and social processes. This introduction concludes with avenues for future research.

Keywords

Certification of actors; Policy change; Policy learning; Policy theory; Problem tractability.

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Introduction

The complexity of the world and inevitability of human error make learning essential for overcoming challenges that emerge when dealing with politics and public policy. People learn about the severity and causes of problems that trouble a society and, given crowded agendas, adjust their political strategies for attracting the attention of government officials. The formulation of public policies builds on learning from experiences of other policies, and the design and implementation of policies are constantly adapted over time through various feedback mechanisms. In these challenges and many others, learning from past mistakes represents a hope that better policies will develop in the future.

At its most general level, “policy learning” can be defined as adjusting understandings and beliefs related to public policy (Dunlop & Radaelli, 2013). Deutsch (1963) was arguably the first to emphasize learning in the study of politics and policy in his relatively rationalist theory of government. For Deutsch, governments operate through constant processes of ‘feedback’ and ‘steering’ that depend on, and enhance, governmental ‘learning capacity.’ Following Deutsch, Heclo (1974) underscored the importance of learning, especially in reference to power and politics, in how people cope with uncertainties in shaping government decisions. For the operation of government and development of policies, Heclo argued that knowledge should be created, assimilated, and organized to reduce uncertainties in aiding decision-making. At a similar period, Walker (1974) showed that the management of ideas is the exertion of power. From the perspective of Walker, controlling ideas means, in

part, controlling uncertainties and choice. In other words, power relates to controlling processes that 'leads actors to select a different view of how things happen ("learning that") and what courses of action should be taken ("learning how")' (Zito & Schout, 2009, p. 1104).

One of the complications in studying policy learning is that it occurs in a policy process. Policy processes consist of politically engaged individuals, called policy actors, interacting to influence government decisions in relation to a topical issue over time. Policy actors come from various organizational affiliations: they include politicians and public officials, managers of public and private companies, members of pressure groups, academics and researchers, and active citizens. Finally, policy processes do not occur in a vacuum but within the institutional systems of a country or a sub-unit of a country, as might be found in federal forms of government.

The legacy of research and complications associated with policy learning has produced a literature on this phenomenon that has constantly evolved (for reviews, see for example Bennett & Howlett, 1992; Dolowitz & Marsh, 2000; Dunlop & Radaelli, 2013; Freeman, 2006; Grin & Loeber, 2007; Parsons, 1995; Sabatier & Schlager, 2000). In this literature, there are points of divergence on the types of actors and nature of knowledge involved in policy learning (Bennett & Howlett, 1992). Recent typological efforts have highlighted significant variations in the processes of policy learning (Dunlop & Radaelli, 2013).

One way to make sense of this literature is through three categories of theoretical approaches that can be differentiated according to the level at which they analyze policy learning: micro-level approaches at the individual level, meso-level approaches at the organization level, and macro-level approaches at the system level. Micro-level studies focus on policymaking as a process of 'puzzling' among individual policy actors dealing with ideas

and uncertainty. Meso-level studies look at the increase of knowledge and intelligence in organizations and changes in their effectiveness in resolving problems or in the policy positions that they advocate. Finally, macro-level studies are typically interested in sequences in which policy decisions are made in one or several institutional systems, often times after similar decisions have been made in one or several other institutional systems.

This issue of *Policy & Society* presents a collection of articles that focus on the connection between policy learning and policy change from all three approaches. Among the existing approaches for studying policy learning and policy change, some theorize that learning is a principal source of policy change whereas others emphasize its conditional effects. For instance, Sabatier and Jenkins-Smith (1993) argue that policy learning is contextually dependent and most likely to contribute to changes in the secondary beliefs of policy actors and, therefore, predominantly contribute to incremental policy changes. Others emphasize that learning through ‘critical frame reflection’ is a viable path for fundamental policy changes (e.g., Schön & Rein, 1994). The central aim of this issue is to contribute to such theorizations in policy learning and policy change by juxtaposing different perspectives.

This introductory article consists of four sections. The first section presents a ‘stylized’ synthesis (Mahoney & Goertz, 2006, p. 228) of the three approaches existing in the policy learning literature. The second section summarizes the key findings from this literature on the connection between policy learning and change before identifying the main knowledge gaps addressed by the articles in this issue. The third section introduces a refined conceptual framework used in the fourth section to outline and compare the articles in this issue. In the two last sections, we draw the main lessons of articles’ findings and conclude with several avenues for future research.

Existing approaches on policy learning

The literature on policy learning can be partitioned into three approaches to policy learning that operate at micro-, meso- and macro-levels.

Micro-level approaches assume that learning occurs within and among individuals within social settings (also called 'social learning'). According to Hecl (1974), 'politics finds its sources not only in power but also in uncertainty – men collectively wondering what to do ... Governments not only 'power'... they also puzzle. Policy making is a form of collective puzzlement on society's behalf; it entails both deciding and knowing... Much political interaction has constituted a process of social learning expressed through policy' (pp. 305-306). As noticed by Parsons (1995), social learning approaches integrate learning and power. There has been an early recognition, in particular by Friedmann (1984), that policy knowledge is socially embedded and results from power relations between human groups. Examples of social learning approaches include Haas (1992)'s epistemic communities, Hall (1993)'s social learning, and Sabatier and Jenkins-Smith (1993)'s advocacy coalition framework.

Meso-level approaches focus on organizational learning. They result from the development and dialog of two tendencies. A first tendency, in political science, is to consider the role of learning in the broader body of research adopting a business perspective on government action (Etheredge & Short, 1983; Metcalfe, 1993). A second tendency, in organizational science, is to adopt a learning perspective on the behavior of organizations. Organizational learning is concerned with organizations of all types, but there is a clear niche of research on specific forms of learning in public organizations (e.g., Common, 2004; Gilson, Dunleavy & Tinkler, 2009; Moynihan & Landuyt, 2009). As one of the foundational contributions to this approach, Cyert & March (1963) contend that through 'organizational

learning processes ... the firm adapts to its environment' (p. 84). For organizations, learning has a strategic character because it affects their ability to identify, react, and adapt to the changes in their environment. As noticed by Argyris and Schön (1996), learning involves the detection and correction of errors, which allow organizations to implement their objectives and norms (single-loop learning) and to modify those norms and objectives (double-loop learning).

Macro-level approaches study how learning occurs at the system level, often across government units. For example, they might study how a policy decision made in one government might affect another government over time. Such processes have been termed policy transfer (Dolowitz & Marsh, 2000), policy diffusion (Marsh & Sharman, 2009), lesson drawing (Rose, 1991), and policy convergence (Bennett, 1991; Knill, 2005). Building on a sociological tradition of diffusion research, those approaches are 'primarily interested in the take-up of information and ideas, practices and technologies among networks of peers' (Rogers, 2003). For example, policy transfer has been referred to as a process in which the decision-makers in one institutional setting 'learn' from the policy decisions made in another setting (Dolowitz & Marsh, 2000). The indirect focus of this literature on learning as means for policy change has led to categorization of other rival mechanisms of diffusion, including competition, imitation and coercion (e.g., Shipan & Volden, 2008). Research delving into the niceties of learning in fostering transfer of ideas and how it occurs at the system level among a collective is relatively recent (Gilardi, 2010, Meseguer, 2004, Volden, 2008). Lesson drawing (Rose, 1991), in particular, entails an ideal form of learning: it assumes a practical capacity to draw lessons from one institutional settings to meet objectives in another institutional setting (e.g., Gilardi et al., 2009). Against this ideal - and relevant for all three approaches to learning

outlined here - learning can be random, biased, or even absent altogether (Dussauge-Laguna, 2012; Shipan & Volden, 2012; Wolman & Page, 2002).

These approaches focusing on different levels of policy learning do share, to various degrees, three distinctive characteristics. First, they pay attention to the relation between society and the state. The state-society frontier is neither static (Hall, 1993) nor impermeable (Sabatier & Jenkins-Smith, 1993). Political and policy-relevant ideas (and power) exist and circulate in the state and among experts, scientists, stakeholders, and citizens in a society. For this reason, the policy learning literature extends to the development and use of concepts that involve collective action and how people relate to government, as found in notions of policy networks, epistemic communities, advocacy coalitions, and others (Parsons, 1995)¹.

Second, flowing from psychological research, policy learning research has mostly adopted the 'behavioral turn' (Zito & Schout, 2009): people are boundedly rational with incomplete knowledge, limited in their abilities to process information, and constrained by their environment. These factors affect policy learning in a number of ways. For example, actors' relations with their environment are dynamic and socially construed shaping the stimuli observed and the interpretation of that simulation. Cognitive activities of policy actors, such as policy learning, are affected by these dynamics and social constructions.

Third, policy learning theories consider the policy process over time. Indeed, 'one of the principal factors affecting policy at time-1 is policy at time-0' (Hall, 1993, p. 277). This point is important because ideas have two contradictory forces on politics. One is their relative stability of ideas in imposing inertia on decision-making. The other is a dynamism of

¹ It is symptomatic of the connection between policy learning approaches and policy networks that Hugh Heclo was at same time an important contributor to first category of approaches (Heclo, 1974) as well as to the second one (Heclo, 1978).

ideas in how ideas are collected, selected, assembled, arranged, and then communicated, advocated or abandoned. These stable and dynamic forces can influence policymaking and need to be incorporated temporally in the analysis of public policies (Dunlop, 2013; Sabatier, 1993).

Gaps in our understanding between policy learning and policy change

Current research is ambiguous on the degree and scope of policy change that results from policy learning. Even if some theories originally offered a great deal of confidence in learning as a factor in policy dynamics, they have recognized that increase in governmental 'intelligence' does not necessarily lead to greater governmental effectiveness (Etheredge & Short, 1983). Similarly, in evidence-based policymaking, politics is often 'introduced 'through the back door' via debates on what is valid evidence rather than on what values should prevail' (Wesselink et al., 2014, p. 341).

Existing research suggests that there are two reasons why learning is rarely conducive to policy change. First, policy learning is one of many factors contributing to policy change. For example, instead of one government unit learning from successes or failures of other government units in the policy transfer literature, the adoption (or not) of policies could be shaped instead by the degree of coercion, the activities of a charismatic entrepreneur, or the wake of a shift in a governing coalition (Dolowitz & Marsh, 2000). Additionally, individual ideology or interests and the exercise of power often override knowledge gained about the severity and causes of problems and the benefits and risks associated with various policy alternatives under consideration (Metcalf, 1993; Moyson, 2014).

Second, policy learning itself is challenging. In the literature, there is widespread recognition that policy learning is difficult to achieve. Knowledge acquisition on complex

policy issues is far from easy: 'if no problem is perceived, little research will be done; new technologies can cause a 'stampede' of studies; while poorly defined problems may or may not be studied, but will have little possibility that any study undertaken will be policy relevant' (Etheredge & Short, 1983; cited by Bennett & Howlett, 1992, p. 286). Also, policy actors' preferences on policy programs exhibit great rigidity (Sabatier, 1993; Moyson, 2016). Policy actors are not perfectly rational and, as a result of various psychological biases such as the 'certainty effect' (Leach et al., 2014), they tend to privilege what they believe rather than accept information that might challenge those beliefs.

Finally, individual learning does not necessarily lead to collective learning and change (Heikkila & Gerlak, 2013). If learning occurs among individuals (micro-level) than upscaling this knowledge across a collective in an organization or system is not necessarily automatic. It depends on range of factors including the network structure among individuals and the various rules governing the exchange of information and decision-making (Witting & Moyson, 2015).

The connection between policy learning and policy change is one of the main motivations for policy learning research. Yet, there remain many unknowns about the extent and mechanisms of policy learning and the conditions and its effect on policy change. We argue that future studies based on new and refined concepts, theories, and methods could advance the field to higher plateaus of knowledge. For example, existing research is relatively limited on the effect of learning on specific types of policy change. In particular, there has been a widespread use of Hall (1993)'s distinction between 'orders' of change. Similarly, in the advocacy coalition framework, it is common to distinguish minor policy changes, when instrumental decisions are changed to serve stable policy objectives, and major policy

changes, when policy objectives or values are altered. However, policy learning does not necessarily change values in the short term but exert crucial pressure on those values in the long run. Alternatively, learning about the effectiveness of policy tools might feedback and alter policy objectives.

Research efforts could also focus on a better understanding of learning effects on policy processes in specific groups (e.g., citizens) or about specific types of knowledge claims (e.g., scientific claims). Knowledge could be gained by studying the cognitive and social processes in policy learning and into the characteristics of organizational and institutional settings fostering or impeding such processes. In this respect, policy learning research can still gain leverage in the interdisciplinary aspect of this phenomenon, which includes drawing inspiration from psychology, sociology, and the management and organization sciences. Or, at least exhibited in this special issue, original insights can be gleaned from different theoretical perspectives from the policy, public management, and political science literatures.

Overall, conceptual refinements and theoretical comparisons can lead to inroads into the abstruse phenomenon of policy learning and its effects on policy change. In this view, the next section proposes a conceptual framework to look at articles in this special issue on the relation between policy learning and policy change.

A refined conceptual framework for the study of policy learning and policy change

To compare the findings of new studies on policy learning and policy change, we build on Bennett and Howlett (1992), Howlett and Cashore (2009), and Dunlop and Radaelli (2013) in asking four organizing questions: Who learns? What do they learn? How do they learn? What is the effect of this learning?

Who learns? This question focuses on the actors of learning and their attributes. They could be individual policy actors (like policy brokers), groups of policy actors (like advocacy coalitions or epistemic communities), organizations (like interest groups) or political systems (at the macro level). For example, Dunlop & Radaelli (2013, p. 602) highlight the mechanism of actors' certification that results in the emergence of 'teachers' that 'can be easily identified by the learners and enjoy some social legitimacy'.

What is learned? There are important differences, between existing approaches, in the types of knowledge, information and experiences learnt by policy actors. For example, managerialist approaches emphasize organizational learning via decisions and activities. Micro-level approaches often focus changes on individuals' values, norms, and policy preferences. Dunlop and Radaelli's (2013) reference to problem tractability comes in this dimension of policy learning. When policy problems are tractable, uncertainty is not radical and policy actors can 'calculate the pay-offs of different courses of action' (p. 602).

How do policy actors learn? We are particularly interested in '*knowledge utilization*', or the ways actors actually use sources of knowledge, information, and experience. This speaks to the existing literature that distinguishes instrumental forms of knowledge utilization (knowledge as a key source for policymaking) from symbolic forms of knowledge utilization (knowledge as a source of legitimation for specific policy actors or policy objectives). According to Dunlop and Radaelli (2013), there are important differences in knowledge utilization according to the degree of control that policy actors have on learning objectives/ends and on learning content/means. When policy objectives/ends are predefined, the learning actors aim at finding the best way to achieve those objectives. When there are no such objectives, policy preferences are endogenous to learning and can change

through the cognitive and social process. When policy actors control the means of learning, they rely on formal and, most often, more sophisticated approaches and methods of learning, such as science and experiments. When there is no control on learning means, the process is less Bayesian and more subject to informal social interactions and disruptions. For example, Aubin et al. (2017) show that policy analysis is a mix of such forms of knowledge utilization in the Belgian, central and regional governments.

Finally, we will look at the *types of policy change* that result from policy learning. Howlett and Cashore's (2009) conceptual clarification of policy change will be used because it captures a wide set of policy dynamics. Howlett and Cashore (2009) distinguish policy focus (policy aims or tools) and three degrees of abstraction in policy content. This means that policy aims and policy tools can be altered at different levels of abstraction. In addition, Howlett and Cashore (2009) differentiate the speed and mode of policy change. This means that paradigmatic changes may happen quickly or slowly (speed). Similarly, incremental changes may result from many small but fast or slow moving steps (mode). For example, in the 'neo-homeostatic' model of policy change, policy settings slowly change through small steps but so deeply that the policy (and its objectives) becomes unrecognizable at the end.

Policy learning and policy change from different perspectives: outline of the issue

This issue incorporates empirical studies using different theoretical perspectives to analyze the relation between policy learning and policy change. In this section, we outline those studies before comparing them in Table 1.

Thunus and Schoenaers position themselves on the micro-level of analysis. They develop a phenomenological approach to learning in the context of the 'reform 107' of the Belgian mental healthcare sector. They distinguish embodied, inscribed, and enacted

knowledge and two modes of policy learning. They find that assembling inscribed knowledge led policy actors to negotiate a plausible arrangement. However, this arrangement did not resolve the disagreements between members of the reformist and tradition coalitions or 'alliances'. Later in the policy process, enacted knowledge was produced through meetings of a think tank. As this think tank gathered key decision-makers together with representative actors of the two alliances, this meeting produced knowledge from the relevant actors, which contributed to a policy innovation of a more fundamental nature.

Moyson examines whether policy actors' policy beliefs are revised according to new policy information and experiences in the liberalization of two Belgian network industries. In this micro-level analysis, *Moyson* finds that policy actors' beliefs and preferences are rather stable. More surprisingly, policy actors maintain their preferences toward policies even when they acknowledge changes in their beliefs about the impacts of those policies. His findings highlight the constraints in the cognitive potential of policy learning processes, but point to the importance of social practices and institutional settings.

Another micro-level analysis is *Dunlop's* article on the epistemic community involved in the European regulation of hormone use in meat production. This study confirms the role of such communities in reducing uncertainty and providing authoritative sources of knowledge on some policy issues. However, uncertainty reduction can also challenge the authority of epistemic communities. Indeed, when policy actors become more knowledgeable on policy issues (thanks to their learning from an epistemic community), they become less receptive to knowledge claims that question their authority and eventually challenge the dominant epistemic community. This is what is described as 'the irony of epistemic learning', which leads to a 'bargaining' mode of policymaking.

Montpetit and *Lachapelle*'s micro-level article explore an 'ideal-typical' process of policy learning – in which policy actors engage without prior expectation about its result – and a motivated reasoning process of policy learning – in which new knowledge is mainly used to substantiate existing policy preferences. They show that both processes occurred in the two subsystems of policy actors involved in shale gas policy in British Columbia and Quebec. Further, they identify some individual factors of such processes. In British Columbia, policy learning polarized policy actors, most of them becoming stronger opponents or stronger proponents to shale gas. In Quebec, policy learning resulted in higher convergence against shale gas development. However, as this province has restrictive policies against the development of shale gas industry, collective action has become easier but policy change will be unlikely.

Several contributions focus on policy learning at the meso-level. For example, *Scholten*'s article involves the congruence analysis of one process of policy learning and policy change from two constructivist policy perspectives: the frame reflection framework and the discourse coalition framework. The key question that drives Scholten's analysis is whether policy learning can actually lead to non-incremental or fundamental policy change. The article focuses on migrant integration policies in the Netherlands, an area prone to many paradigm shifts over the last three to four decades. Scholten concludes that these paradigm shifts have been triggered by many factors other than policy learning. As far as learning is concerned, a strong tendency of policy actors to resist knowledge claims that do not help legitimate specific policy actors or substantiate specific policy claims is observed. Rather than learning in the form of frame reflection, this article shows evidence that knowledge and information primarily contribute to discourse institutionalization and discourse structuration. This

reminds us that the learning-change process needs not be linear, from 'knowledge production' to 'utilization' and 'learning', but it can also operate the other way.

Another meso-level contribution is *Howlett, Mukherjee and Koppenjan's* article, which applies the network theory to policy learning and policy change. They argue policy learning in policy networks or 'policy subsystems' has remained under-theorized. Yet, a key contribution that network theory can offer to learning is how policy brokers can open and close connections. Following a method of social network analysis of the policy subsystem in the Indonesian biodiesel sector, they distinguish various types of learning and various brokerage roles. This analysis shows that some organizations can serve as intermediaries between government actors and other organizations from the society. It reveals that those organizations can provide opportunities for learning as gatekeepers facilitating the coordination between relevant actors, but they can also constrain the opportunities for policy learning from other influences or other actors that do not manage to get access to these two crucial organizations. Hence, identifying the central learning brokers, in policy subsystems, is an important element for understanding who learns what and with what effects on policies.

Voorberg, Bekkers, Timeus, Tonurist and Tummers look at co-creation processes, in which citizens are involved as initiators or co-designers of public service delivery. They compare three case studies of co-creation processes in Estonia, the Netherlands and Germany. Those processes that lead to policy changes of a more fundamental nature occur with changes in the policy frames sustained by the citizens and public officials. Furthermore, the institutional context conditions the relation between policy learning and policy change through co-creation. Somewhat paradoxically, the centralist governance tradition of Estonia strengthens this link because the number of actors that have to be convinced is more limited.

In contrast, in Germany, there is a more legalistic tradition of policymaking that established many hurdles for policy change. Finally, in the corporatist tradition of the Netherlands, citizen involvement had to compete with other consultative structures and forms of interest representation, to convince public officials.

Several contributions look, on a more macro level, at the structural conditions that can influence the relation between policy learning and policy change. For example, *Newig, Kochskamper and Jager* look at 'governance learning' or the way policy actors learn about the appropriateness of different modes of governance. They focus on how stakeholder involvement can be organized in such a way to contribute to EU water governance (participatory planning). They notice that few lessons are learnt from past participatory processes to change future ones. Furthermore, they observe that little attention is paid to the types of participatory processes that have been implemented in other jurisdictions or policy fields. In other words, there is very little 'governance learning.' To systematize thinking about governance learning, they develop six types. This is based on the distinction between parallel learning (in various jurisdictions/fields at the same time) and serial learning (cyclical in one jurisdiction/field). This is also based on the distinction between three sources of learning: endogenous, exogenous from other jurisdictions or exogenous from other policy fields.

Witting applies the institutional analysis and development framework to study rule configurations that did or did not contribute to policy learning and policy change in relation with the development of drainage in the Denver metropolitan area before and after the 2013 Colorado flood. She finds that clear rules fostering transparency, reciprocity, and communication are key dimensions of a policy setting that contribute to learning. Framing learning as a process of adjustment in response to other policy experiments, such as

appropriate rule configurations, are most likely to contribute to incremental policy change, or 'sustainable' policy developments over time.

Finally, *Dunlop and Radaelli* offer a discussion of the research on the policy learning-change nexus through their distinction of three analytical regions based on Coleman's 'bathtub'. Looking at the micro-foundations of action (macro-to-micro), Dunlop and Radaelli remind us the importance of heuristics and emotions in policy learning and change, next to cognition and rationality. Social interactions among individual actors also play a role in learning processes (micro-to-micro) and highlight that rational, mechanistic belief flows are relatively rare. Rather, various processes of 'bricolage' and socialization allow minorities or even some individual actors such as entrepreneurs or brokers to exert a decisive influence on policies. The third analytical region (micro-to-macro) refers to the studies looking at aggregation effects in organizations, institutions and the society that foster or impede the effect of learning on change. For each analytical region, Dunlop and Radaelli also discuss research methods.

Table 1 compares all articles on the basis of our conceptual framework of policy learning and policy change. We rely, in particular, on the certification of actors, the problem tractability, the control over learning objectives/ends and learning content/means, and the content, focus, mode and speed of policy change.

	Authors	Perspective	Who?	What?	How?	To what effect?
			Actors involved	Types of knowledge involved	Types of knowledge utilization	Types of policy change
Micro-level	Thunus and Schoenaers	Phenomenological approach	High CA: only policy actors representing coalitions or alliances (but all of them)	Low PT: clear pay offs of action in inscribed knowledge, but needs to be enacted and embodied too	Learning by assembling (low COE; high COM) versus learning by meeting (low COE; low COM)	Assembling can lead to negotiated change, but meeting can lead to policy changes of a more fundamental nature (abstract & fast)
	Moyson	Advocacy coalition framework	Low CA: all individual policy actors within policy subsystems	Low PT: experience and information from past policies do not lead to preference adaptations	High COE & COM: adjusting policy beliefs in response to experience and information but with stability of policy preferences	Gradual paradigmatic changes in policy aims and tools despite high stability of policy preferences
	Dunlop	Epistemic communities	High CA: epistemic communities in relation to decision makers	Low to high PT: epistemic communities clarify the problem	High COE & COM: learning as a mode of uncertainty reduction	Learning about policy measures and program leads to political bargaining on aims
	Montpetit and Lachapelle	Policy learning versus motivated reasoning	Low CA: all individual policy actors within policy subsystems	High PT for the actors who struggle over the definition of 'neutral' sources of information; low PT for learning actors	Learning (low COE & COM) versus motivated reasoning (high COE & high COM)	Convergence of policy opinions facilitates collective change whereas divergence impedes it
Meso-level	Scholten	Frame reflection versus discourse Coalitions	Medium CA: policy stakeholders or actors within specific discourse coalitions	Low PT: struggle over the definition of authoritative sources of knowledge and information	Learning as frame reflection (low COE & COM) versus discourse structuration and institutionalization (high COE & COM)	Frame reflection as source of non-incremental frame shifts versus learning as source of incremental substantiation and legitimization
	Howlett, Mukherjee and Koppenjan	Network theory	High CA: key role of specific organizational actors such a policy brokers	Medium PT: technical, social and institutional learning	High COM: brokers as gatekeepers for knowledge claims	Brokers make changes more incremental but faster; they also have the power to stop changes
	Voorberg, Bekkers, Timeus, Tonurist and Tummers	Co-creation	Low CA: involvement of all stakeholders in the learning process	Low PT: policy processes require knowledge from all stakeholders	Low COE & COM: learning via interactive 'co-creation' or 'coproduction' processes	Legalist and corporatist institutional contexts with decisions based on consensus make the transformation of learning into change less likely
Macro-level	Challies, Newig, Kochskamper and Jager	Governance learning	High CA: learning on how to involve citizens but only by decision makers	High PT: endogenous or exogenous knowledge claims	High COE & COM: serial learning or parallel learning	Few governance learning observed: changes in the design of policy learning are not likely
	Witting	Institutional analysis and development	Low CA: all actors in polycentric action arenas	Low PT: experience from past but complex policy experiments	High COE & low COM: learning from policy experimentations	Collective changes in tools are more paradigmatic and fast when collective rules are clear
Multilevel	Dunlop and Radaelli	The 'bathtub' of policy learning and policy change	Conceptual article discussing existing research on policy learning and policy change according to three analytical regions: the micro-foundations of collective action ('macro-to-micro'); the effect of social interactions ('micro-to-micro'); and the aggregation effects ('micro-to-macro')			

Legend: CA = Certification of Actors; PT = Problem Tractability; COE = Control over learning Objectives/Ends; COM = Control over learning Content/Mean (see Dunlop and

Radaelli 2013)

Table 1. Comparison of the articles in this issue

Key findings

All articles in this issue take a different theoretical perspective to delve into the empirical reality of policy learning and policy change. Clear differences appear in terms of the actors that were found relevant, the types of knowledge that were considered sources of policy learning, the types of knowledge utilization found in policy learning and, finally, the types of policy change that resulted from learning.

From the outset, policy learning research has highlighted the variety of actors that should be accounted for to understand the influence of belief adaptations and interactions in policy processes. The articles of this issue focus on the nature and consequences of learning by specific groups of the society and the government. For example, *Challies et.al.* and *Voorberg et.al.* argue that stakeholder and citizen engagement can be very valuable sources of policy learning, especially in the changing governance setting of contemporary society. *Howlett et.al.* look at the role of policy brokers in bringing in new ideas and information and in connecting different groups from the society to the government. *Witting* argues that, under certain institutional conditions, polycentric governance is favorable to learning through policy experiments. *Dunlop* shows that epistemic communities can be caught in the 'irony of policy learning' when their 'teaching' contributes to the emergence of new actors that politically challenge their power.

Most of the articles recognize the broad scope of knowledge claims involved in policy learning. This includes scientific evidence (e.g., *Montpetit and Lachapelle* or *Scholten*), which can, in specific settings, still contribute to 'neutral' knowledge. However, this also includes 'lay knowledge' or 'common knowledge' (e.g., *Thunus and Schoenaers* or *Voorberg et.al.*) or the specific expertise of key stakeholders (e.g., *Challies et.al.* or *Witting*). What the articles

say very little about is under what conditions specific types of knowledge are mobilized in policy learning processes. *Scholten* argues that patterns of knowledge utilization are inherently connected to processes of knowledge production, but very little is known about how and why actors actually select specific knowledge claims.

In terms of knowledge utilization, we differentiate four categories of articles. The first category of studies look at rationalistic processes in which policy actors use specific means to learn about predefined policy objectives (e.g., *Moyson* or *Dunlop* and *Challies et al.*). The articles that describe processes in which information and experience are used to institutionalize pre-existing policy preferences (*Scholten*) or to ‘motivate reasoning’ (*Montpetit & Lachapelle*) also pertain to this category. *Witting’s* article is the only one that falls in the second category, in which policy actors have predefined objectives – here, mitigating floods – but less control on means – here, learning depends on real-life policy experiments and the institutional context.

In the third and fourth categories, learning may lead to a revision of policy aims; they are not predefined. In this issue, we find many articles looking at learning processes falling into the third category, where policy actors do not control content/means of learning (learning by assembling in *Thunus & Schoenaers*, ‘ideal-typical’ learning in *Montpetit & Lachapelle*, ‘frame reflection’ in *Scholten* or ‘co-creation’ in *Voorberg et al.*). This is the most ‘social’ form of learning because lower control over the content/means of learning is often associated with lower certification of actors and higher openness to the disruptions resulting from their participation to the process. The fourth category, in which policy actors do not control learning ends but do control learning means, is not represented in this issue. In fact, rationalistic processes in which policy actors look, in a Bayesian perspective, at information

and experience from the past or from abroad without predefined policy objectives are very rare.

The macro-level of the articles, in particular, focus on the structural conditions for learning, such as general trust and reciprocity (*Witting*) and serial or parallel learning processes (*Challies et.al.*). *Voorberg et.al.* argue that learning via co-creation is a matter of design, although strongly dependent on the broader institutional environment. In contrast, *Thunus and Schoenaers* see learning mostly as an outcome of social interactions.

Finally, the articles vary strongly in the extent to which they see opportunities for learning as a source of policy change. Whereas some articles clearly define policy learning as a key source of change under specific conditions, others are clearly more skeptical or challenging the notion of policy learning per se. In fact, two important categories of articles may be distinguished. A first category of articles focus on the micro processes that allow policy actors to adapt their beliefs based on new information or social interactions. They point to the potential of such processes for changing policies or reinforcing the conviction of policy actors about the appropriateness of policy tools to achieve policy aims (e.g., *Dunlop, Jenig et al., Moyson* or ‘learning by assembling’ in *Thunus & Schoenaers*). Such processes are close to the ‘ideal-typical’ form of learning (see *Montpetit & Lachapelle*) studied by our colleagues from the psychological or educational sciences.

However, in the second category, most articles identify obstacles and barriers to the transformation of such micro-level processes into macro-level policy change. For example, several articles point to the tendency of policy actors to use knowledge to substantiate or institutionalize existing policy aims (e.g., ‘motivated reasoning’ in *Montpetit and Lachapelle* or ‘discourse institutionalization’ in *Scholten*). Still in the same category, other articles identify

a range of psychological, social or institutional factors fostering or impeding the process leading from learning to change. For example, *Moyson* shows that psychological biases prevent policy actors to align their policy preferences with adaptations in their beliefs on policy outcomes. *Howlett et al.* show that social networks can facilitate belief flows, in policy subsystems. However, policy brokers can also play a role of gatekeepers. Finally, *Voorberg et al.* argue that the institutional context can be an important barrier to the transformation of policy learning into concrete policy changes.

Agenda for future research

The articles contained in this issue contribute to filling several gaps in the literature. For instance, they have highlighted several processes connecting policy learning to policy change. They have also identified a sets of psychological, social, and institutional factors fostering or impeding learning processes. In this respect, this issue has demonstrated the benefits to examining the policy learning-change nexus from various and, sometimes, new theoretical perspectives (rather than to restrict analyses to a single approach or to existing sets of approaches).

At the same time, those articles suggest several avenues for future research. First, the research efforts on policy learning and policy change are still emerging. Future studies could look at a myriad of other factors and their interactions. On this respect, *Dunlop and Radaelli's* article suggestions are worth considering, such as paying closer attention to the cognitive role of emotions or the aggregation effects of organizations and institutions. Furthermore, they identify the analytical regions where such processes can unfold. Of course, the challenge here is one of simplification. That is, given the uncountable number of factors that could affect how people learn and what they learn, how can researchers focus on the most important

factors while ignoring others? One solution is the adoption of more than one theoretical approach to guard against confirmation bias associated with any one approach.

Second, policy learning research raises challenges in terms of research designs. We lack empirical variation in the degrees/types of policy change and in the degrees/types of policy learning processes in the literature. In the literature, a myriad of cases exists with policy stability or with policy change without policy learning. Also, very few cases (even experimental ones) examine knowledge acquisition by policy actors having control over learning means but without control over learning ends, i.e., “ideal-typical” cases of learning without predefined policy objectives. An empirical attention to alternative cases would offer a better understanding of the relation between policy learning and policy change. Put differently, a systematic, comparative strategy looking at variations in who, what, how, and to what effect should be developed. Part of this strategy must also be sympathetic to the population under studied and what is being sampled. If all researchers were to focus on the most salient cases where we expect learning matters in policy change, we would ignore all those cases where learning does not matter thereby skewing our knowledge of the role of learning in the policy process.

Third, the articles in this issue have relied on a variety of research methods, from case studies to cross-sectional surveys through participating observation or social network analysis. In addition to the insightful methodological suggestions made by *Dunlop and Radaelli* in their article, we would like to focus on the need for longitudinal data, in research on policy learning. Given the inertia of policy beliefs and programs over time (Dunlop, 2013; Sabatier, 1993), the influence of policy learning on policy change can most likely be captured by longitudinal studies. In fact, when quick, paradigmatic policy changes are observed, they

often do not result from policy learning. At this moment, qualitative methods, such as participant observations, repeated interviews or document analyses offer advantages in producing thick descriptions but conducting interviews or observing processes over long periods of time can be unrealistic or suffer from recall effects. Many artifacts have been used, in quantitative research, especially using one cross-sectional survey in which respondents are asked to compare their current and past policy beliefs (e.g., Leach et al., 2014; Montpetit, 2009; Moyson, 2016). However, there is a consistent body of research suggesting that those artifacts are methodologically imperfect (e.g., Geweke & Martin, 2002; Van Der Vaart et al., 1995). Neither qualitative nor quantitative methods of data collection and analysis offer the optimal strategy for gaining leverage on learning. The best approach is mixed methods, acknowledging the limitations of any single method, and being as public as possible regardless of the method to foster learning among scholars on learning.

Finally, most often, the normative implications of policy learning studies remain examined with much prudence, or not treated at all. Etheredge and Short (1983) explicitly examined the forms of learning increasing the 'intelligence' and 'effectiveness' of governments while early experts of evidence-based policymaking were interested in the right way to use valid evidence in policymaking processes. In the organizational learning literature, Hedberg (1981) introduced the concept of 'unlearning' to identify the deconstruction of wrong routines and maladaptation. Other scholars used this concept for referring to the assimilation of 'wrong' knowledge (Lee, 2002; Starbuck, 1996; Tsang & Zahra, 2008). Since then, policy scholars have shared with other social scientists a growing prudence in formulating practical implications of their findings. However, this prudence has also resulted from the fragmentation of knowledge on the actual implications of policy learning on policy change. Hopefully, this special issue that incorporates different theoretical perspectives will

contribute to advancing the reservoir of knowledge on the appropriate conditions facilitating policy learning and policy change.

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