Agency in multi-level governance systems: the implementation puzzle and the role of 'intelligent' local implementers

Version accepted for publication

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Abstract

The qualitative paper explores an alternative lens, i.e., informed by a complexity perspective, through which to frame the adaptive role of local implementers in multi-level governance systems. It argues that three key tenets of complexity thinking - emergence, self-organisation and co-evolution - can help better explain that role. The re-conceptualisation of local actors - from agents to stewards - and of central government - from controller to enabler - are identified as the conditions that allow *intelligent* actors to leverage local varieties to deliver context-specific solutions. The paper ends with actionable measures that can enhance the self-steering capacity of policy systems.

Keywords: implementation puzzle, complexity thinking, stewardship theory, multi-level systems, local agency

Introduction

A central challenge in contemporary public administration is the implementation of policy programmes in multi-level and fragmented institutional systems. In such contexts, the policy transformation, intended as the original design of a policy "translated into operating instructions as it moves down the hierarchy to operatives at the 'bottom' of the pyramid" (Barrett, 2004: 271; Stoker, 2019) is often uncertain and unpredictable. The direction of a policy system and the way it operates, in fact, "do not necessarily follow the original intentions of governmental actors" (Morçöl, 2012: 268). This can be observed mainly where various agencies and institutions are involved, "each carrying particular interests, ambitions, and traditions that affect the implementation process and shape its outcomes, in a process of 'multi-level' government or governance" (Howlett, 2019: 420). Given the mutual impacts of this "multitude of interactions tak[ing] place in many different forms and intensities" (Kooiman, 1999: 76), programmes that are successful in one context often fail to be replicated across settings. This is what Sandfort and Moulton (2020: 141) define 'the perennial puzzle of implementation'.

Research on the failure of reform efforts to deliver on their promises (e.g., Hudson et al., 2019; Sætren and Hupe, 2018; May, 2015; O'Toole, 2000) offers valuable discussion in this respect, but there remains a great deal of potential to further our understanding of what shapes solutions from the executive level to the frontline delivery systems, especially in fragmented settings (Berardo and Lubell, 2016; Hjern and Porter, 1981). At the network level, the engagement of disparate institutions and actors, and increasing complexity "in terms of intergovernmental as well as interorganizational relations" (Torfing et al., 2013: 6) are complementary explanation for dissimilar outcomes. At a local level, individual efforts and ad hoc decisions to promote community interests

raise additional questions about the role of dispersed agency and how to make implementation more effective and coordinated.

Here, we move beyond the usual claim that translating political intentions into efficacious action is challenging. We posit that there is an urgent need for a change in thinking. More specifically, we argue for the need to replace the dominant *complexity-reducing* strategy - the primary frame for thinking in public policy (Colander and Kupers, 2014) - with an alternative (*complexity-embracing*) perspective. An approach based on *complexity-thinking* (Richardson and Cilliers, 2001; Ansell and Geyer, 2017) not only draws on basic pillars of emergence, self-organisation and co-evolution, but also recognises and leverages complexity for designing and bringing about change (Eppel and Rhodes, 2018: 952; Morçöl, 2012). According to the proponents of this perspective, complexity thinking helps better clarify the relationship between the structural and the local 'levels of interactions' (Kooiman, 1999).

Following Morçöl (2012), a complexity-embracing lens focuses on the range of conditions and social mechanisms that are at work within policy systems, including the social dynamics and human agency that are critical in determining variation in implementation at different levels in a complex system (Sandfort and Moulton, 2020).

In jointly considering contextual features that connote the behaviour of decentred actors, the paper suggests an interpretation of the implementation puzzle that overcomes the view of local variations as non-compliance and deviation from the government's chosen path. Rather, we make the case that variations are the result of local implementers acting as 'intelligent' (Bannink and Trommel, 2019) and 'astute' (Hartley et al., 2019) actors who leverage variation and diversity to deliver context-specific solutions (Bednar, 2016).

Based on this observation, the paper first must define the role of local agency from a complexity thinking perspective, which topic remains under-represented in the extant literature, notwithstanding the insightful contributions from international scholarship (Eppel, 2017; Eppel and Rhodes, 2018; Teisman and Klijn, 2008; Teisman et al., 2009; Morçöl, 2012; Haynes, 2015; Rhodes et al., 2011).

To better frame our discussion, the aim is not to articulate a 'complexity theory' of public policy implementation (even if this were possible), but to discuss some well-known implementation issues as seen through the complexity thinking lens. Our interest is in the kind of local variations and self-organisation processes that only concern *how* to implement centrally defined policy measures, not *what* they are intended to achieve.

Purpose and research approach

The paper sets out to clarify how a complexity aware approach can enlighten both the results and the actual working of policy implementation in multi-level governance systems. In doing so, our intention is to discuss how this approach might influence a more realistic view of local implementers' behaviour.

Our starting point here is that "public policy is an emergent, self-organizational, and dynamic complex system" (Morçöl, 2012: 9). This system does not necessarily follow "the dictates of the presumed 'will of the government' or that of a particular collective actor" (ibidem: 10). That surprising side effects (usually labelled as 'slippage' or 'drift' from the original plan (Hallsworth, 2011: 20) occur is old news to political scientists, see, for example, the seminal studies of Pressman and Wildavsky (1984). Rather, the perspective adopted here, by problematizing the instrumental-rational notion of 'implementation puzzle', seeks to delineate - in Alvesson and Sandberg (2011) words - a more nuanced 'assumption ground' that encompasses both the system-wide dynamics and the agency of the decentred actors involved in 'joint production' (or collaborative) efforts.

More precisely, we adopt an interdisciplinary, qualitative research approach based on personal argumentation that "integrates a number of different works on the same topic, summarizes the

common elements, contrasts the differences, and extends the work in some fashion" (Meredith, 1993: 8). Hence, the paper refers to multiple theoretical sources, also belonging to different, sometimes conflicting traditions. This is not motivated by eclecticism or the cherry-picking of data and ideas to suit our hypotheses. The aim is to identify a set of concepts developed in a variety of extant public administration streams that can be integrated to clarify and somewhat advance the complexity-embracing debate. The paper thus draws on studies that have applied complexity principles (such as self-organisation, co-evolution and emergence) to illuminate key issues in public administration (including: Eppel, 2017; Eppel and Rhodes, 2018; Teisman and Klijn, 2008; Teisman et al., 2009; Morçöl, 2012; Haynes, 2015; Rhodes et al., 2011; Castelnovo and Sorrentino, 2018; Pycroft and Bartollas, 2014; Harrison, 2006; Daviter, 2017).

We refer to complexity not as a theory but as a meta-theoretical position, an interpretive lens based on an 'epistemological rethinking' that challenges the reductionism, determinism, simplification, causality and linearity of the traditional scientific perspective (Ansell and Geyer, 2017). Taking this view, as Morçöl (2012: 266) posits, "can help guide inquiries into the workings of complex social systems…but not to verify laws and law-like generalizations".

Given the exploratory nature of the paper, the discussion is by no means exhaustive. Obviously, the use of complexity thinking as a heuristic device does not mean discounting the valuable conceptual contributions of other academic traditions, which we will not go into here. Our basic take on public administration is organisational and the proposed discussion guided by the deceptively simple question: *How can the implementation puzzle be framed from a complexity-thinking view?*

In the next section, by sketching the main traits of a complexity-embracing approach, we suggest that local differences in public programme implementation can be interpreted in terms of increased variety instead of divergence. This change in perspective has major implications in how we picture the actual role of local implementers. Therefore, in the successive sections, we attempt to respond to three critical questions related to the complexity-embracing frame: How can self-organising actors be conceptualised from a complexity thinking perspective? How can the local actor's behaviour be explained and motivated? How should the role of the central government change in order to leverage complexity to allow locally adequate solutions to emerge?

Embracing complexity

Despite extensive criticism from the international scholarship, linear and predictable social approaches, i.e., based on 'economistic rationality' (Stoker, 2010), remain pervasive in practice, especially in legalistic administrative contexts. A prime example is Italy, where central government not only defined the intended results of many of the reform programmes launched in past years, but also how local governments should implement them. Such cases include the establishment of one-stop business shops and the reform of local government to reduce administrative fragmentation through voluntary or forced intermunicipal cooperation. Both these reform programmes were the result of decades of law-making episodes, each of which introduced new, top-down obligations and incentives to remedy the scarce results on the ground. In both cases – citing Capano and Lippi (2017: 271) – the 'instrumental logic of consequence' adopted by the policy makers was in direct contrast to the 'logic of appropriateness' of the local implementers and generated resistance. In fact, and quite significantly, despite repeated efforts, a still high rate of divergence in local outcomes remains, both across and within the Italian regions (Castelnovo and Sorrentino, 2022; Castelnovo and Sorrentino, 2018).

Countering the mainstream view, however, is a growing body of evidence attesting the inevitability of uncertainties in policy implementation and the non-linearity between policy intentions and implementation. As observed by Cairney et al. (2022: 364 original emphasis), "[c]*omplex policymaking systems or environments* suggests that policymakers do not fully understand or

control policy processes". This uncovers the need for a more realistic strategy (Cairney, 2015) to 'embrace complexity' rather than to try to reduce it through rational simplification (Rhodes et al., 2010; Stoker, 2019).

Embracing complexity means first surpassing the governance model "based on assumptions of predictability, the elimination of uncertainty by planning and analysis methodologies and control by compliance" (Rhodes et al., 2010: 206) to on-board a model that allows "frequent adaptation and a real time approach to navigating emergent reality – at all levels" (ibidem). In essence, this new frame agrees that public policies are "emergent, self-organizational, and dynamic complex systems" (Morçöl, 2012, p. 9) to harness complexity rather than simply be undermined by it (Stoker, 2019).

Second, if public policies are considered complex systems, then no direct causal relationship exists between policy intents and outcomes. The complexity frame assumes that systems are in a constant state of flux at the micro-level. However, no single agent has control. At best any individual or collective agent "has a measure of influence" (Colander and Kupers, 2014: 58). Dense and diverse interactions among constellations of actors often resist external command and control pressures (Morçöl, 2012, pp. 10-11). Therefore, implementation variations and mixed outcomes are highly dependent on local interpretations "with each local organization uniquely mixing elements of national policy with their own requirements" (Butler and Allen, 2008: 421). Hence, local implementers evaluate the weighting of economic, social, institutional and cultural configurations and, if necessary, select specific options among reasonable alternatives that better address local needs and opportunities, i.e., "consistent with the important values at stake" (Alford and Hughes, 2008: 131). Butler and Allen (ibidem) label this behaviour *self-organisation,* i.e., the combined actions of individuals "operating at different scales and time frames" (Bristow and Healy, 2015: 246) that inherently leads to the *emergence* of new features which solidify and form the structures of the social system (Klijn, 2008: 308, our emphasis).

Third, purposeful decision-making in a particular system is often tied to similar processes occurring in other systems: "changes in one system trigger changes in others it is in relationship with" (Morçöl, 2012: 139). This is the basic idea of *co-evolution* as the result of strategic actions (adaptive moves) of both intelligent and reflexive agents (and collections of agents) that affect both the initiator of the action and all others influenced by them (Klijn and Snellen, 2009) and that can lead to mutual adaptation (Eppel, 2017).

The fundamental underpinnings of the complexity-embracing approach to public policy have been reinstated by the international scholarship (including: Haynes, 2015; Rhodes et al., 2011; Boulton et al., 2015; Eppel, 2017; Eppel and Rhodes, 2018; Morçöl, 2012; Castelnovo and Sorrentino, 2018) and applied to a variety of settings and from different perspectives. Consistent with Ashby's law of requisite variety (Ashby, 1956), the complexity approach recognises local variations as opportunities for qualitative improvement, instead of reducing them to "the one best way of dealing with a given problem" (Alford and Hughes, 2008: 138).

The implementation puzzle is significantly scaled down if we assume that "the organisation is open to the utilization of any of a variety of means to achieve program purposes, with the choice of these means focused on what is most appropriate to the circumstances" (Alford and Hughes, 2008: 131). The complexity-embracing view to implementation is thus based on the assumption of "multiple, interacting self-organizing entities that learn and change over time" (Eppel and Rhodes, 2018: 953). Under such view, as observed above, local variations in implementation should be considered as the result of the resourcefulness of the policy implementers. These latter possess information-processing and reflexive capacities and can act as 'learning and adjusting actors' (Teisman et al., 2009) in situations where interactions take place without necessarily requiring a hierarchical superior force. Critical to this interpretation of the implementation puzzle is the adaptive capacity of the local implementers', which is implicitly recognised in the social sciences, from Merton's analyses of 'goal displacement' to Lipsky's analyses of 'coping mechanisms' (as observed by

Brodkin (2011: i255, references omitted), and compatible with the (re)emerging theorising of street-level bureaucrats' policy entrepreneurship (Cohen and Aviram, 2021).

Complexity thinking suggests that local variations in policy implementation are the emergent result of processes of self-organisation and co-evolution through which local implementers re-interpret and adapt elements of national policy, mixing them with their own requirements and specific contextual dynamics to better achieve the goals for which the policy was designed. However, reframing the implementation puzzle in terms of increased variety (instead of non-compliance) also raises several critical questions that should be addressed both analytically and practically: How can self-organising, self-reflecting, learning and adjusting actors be conceptualised from a complexity thinking perspective? How can local actor's behaviour be explained and motivated? How should the role of the central government change in order to leverage complexity to allow appropriate local solutions to emerge?

From 'agents' to 'stewards'

Under the top-down 'innovation by law' approach typical of legalistic administrative systems, policies should comply with objectives defined centrally (Barrett, 2004: 254) and actors at lower levels are treated purely as a means to an end (Jones, 2011: 9). The focus on conformity implies the need to control the behaviour of the regulated actors (conceptualised as opportunistic individuals) and connotes the implementation process as a typical chain of principal-agent relationships.

Rooted in economics and finance theory, the agency theory "assumes information asymmetry and goal conflicts" between political principals and administrative agencies (Yu, 2021: 1). At the centre is a reductionist perspective of a self-interested, amoral, utility maximising agent (Pirson and Turnbull, 2012) whose self-serving behaviours may negatively impact principals' wealth (Lewis and Sundaramurthy, 2003), requiring the principal to set up appropriate mechanisms of control. With its calculative logic, agency theory stresses the challenges of individualism and the value of extrinsic motivation.

Considering local implementers as rational and opportunistic agents, however, undermines the idea that those people could be relied on to act selflessly for the public good (Bevir, 2013: 143). In contrast, recognising the reflexive capacities of implementers who act as learning and adjusting actors chimes with a view of the implementers as 'stewards'. Stewardship theory details a collaborative approach, tapping insights from sociology and psychology (Lewis and Sundaramurthy, 2003: 398). This line of enquiry departs from approaches that assume the "inescapable clash of interests between principals and agents" (Schillemans, 2013: 4) and adopts a primarily bottom-up micro perspective. "Stewards are motivated by ego-related values, such as personal development, self-realization and belonging, as well as by content-related values, such as delivering a public good" (Schillemans, 2013: 5). With this notion of agent as a self-actualising and collective-serving individual (Davis et al., 1997), follows a different understanding of regulated actors as having personal qualities which induce them to act responsibly (Bannink and Ossewaarde, 2011: 601). What matters even more, interestingly, is the fact that there would also be less need to impose monitoring: "control mechanisms are unnecessary and can be counterproductive by crowding out intrinsic motivations of stewards" (Yu, 2021: 6).

While control mechanisms can be effective to enforce conformity and compliance in (relatively) simple situations, in a complex and potentially conflictual situation, such as the implementation of a public programme within a multilevel governance system: "a regulated actor having his or her own information is able to evade the control ambition of the regulating actor; an actor having his own value positions is willing to use his or her information in order to evade the control ambition of the regulating actor" (Bannink and Trommel, 2019: 203). In other words, they "may put forward their

own normatively preferred solutions and their corresponding factually correct justifications" (ibidem) and choose not to adapt and to resist change (Bristow and Healy, 2015).

Naturally, considering local implementers as stewards does not eliminate the 'resistance from below'. On the contrary, when based on an adequate and informed evaluation of the local constraints and opportunities, the local implementers' resistance can be considered as one of the possible factors that can trigger local self-organisation processes.

Far from being simply naïve wishful thinking, the stewardship view that "humans are moral agents seeking to cooperate with one another" (Stoker, 2010: 20) leads to an understanding of local policy actors who "act on a combination of ethical, professional, democratic, and human values as a way of maintaining legitimacy" (Molina, 2015: 50). The key observation is that the stewardship theory tells us something important about internalised extrinsic motivations: "the objective is to do good for others and society, but the motivation originates from within the individual as opposed to sanctions or incentivized regulation" (Pedersen, 2014: 888).

Assuming that local implementers, as stewards, act on the basis of what Haynes (2015: 149) defines a 'value-based mindset' puts motivations into the foreground, thus extending "the conventional view of rationality and cognition especially on the motivational side" (Grandori, 2013: 582). Of course, the focus of stewardship on values and motivations does not exclude the existence of self-interest and resistance. However, stewardship principles can help better understand the decision-making mechanisms that lead local implementers to reinterpret locally and adapt national policies, or even resist them.

In this respect, it can be assumed that a relevant role is being played by public sector motivation (PSM), meant as an individual's predisposition to serve the public interest (Perry and Wise, 1990; Ritz et al., 2016; Yu, 2021). Remarkably, also elected politicians' exhibit a level of PSM similar to public officials (Ritz, 2015; Dal Bó and Finan, 2018). Thus, the local implementation of public programmes is basically motivated by the desire to adopt what appears to be an appropriate solution to a public problem, no matter what form it takes. In this sense, implementers creatively mobilise intelligence to take "appropriate action in an ethical-moral context where values and ends must be explicitly considered" (Sanderson, 2009: 710).

Recent developments in the field of organisation studies that focus on microfoundations (Lindenberg and Foss, 2011; Lindenberg, 2004; Lindenberg, 2013) function as an additional map to understand the role of the purposive actors in complex systems. The goal framing theory, for example, posits that three types of overarching and competing goals simultaneously govern (or 'frame') what actors attend to: extrinsic gain goals (focused on resources), intrinsic hedonic goals (focused on the way one feels), and intrinsic normative goals (focused on appropriate behaviour, and associated with pro-social motivation) (Lindenberg, 2013). Because a normative goal-frame is precarious, i.e., it is in constant danger of being displaced by gain or hedonic goals, establishing and maintaining a motivation that draws on this goal-frame is essential. Further, individual preferences are *plastic* and selective (Lindenberg, 2013; Osterloh and Frey, 2013); it follows that incentives that leverage instrumental and extrinsic motivation to engage in collective endeavour "have to take a back seat" (Lindenberg, 2013: 41). From this viewpoint, value management can thus replace control and enforcement as the basic mechanism for reducing 'resistance from below'. Of course, once the normative goal-frame is established, an organisation design effort (e.g., task and team design) is necessary to achieve participation, knowledge exchange and knowledge sharing among relevant actors.

In all, if, in principle and following a *thicker* description of decentred actors, we recognise that diverse 'value-based mindsets' concur to generate local variations on the ground, then local self-organised solutions should be considered as legitimate *ex-ante*. From this observation, two important implications follow. First, formal patterns of control on the implementation process lose

some of their importance. Second, from the practical standpoint, leaving space for variations invokes the need to evaluate what has actually happened on the ground.

Widening the focus of enquiry to the constellations of actors, in turn, shifts the attention from compliance with the intentions of the lawmakers to an assessment of the appropriateness of (logic of) the solution for the specific circumstances. More importantly, to capture local variations policy evaluators are encouraged "to dive into the black box and search out what it is about programmes that makes them work" (Pawson, 2013: xv), and to verify *a posteriori* the hypothesis of change.

Ensuring systemic coherence

Stewards creatively mobilise intelligence as the capacity to apply knowledge to take "appropriate action in an ethical-moral context where values and ends must be explicitly considered" (Sanderson, 2009: 710). In this sense, the conceptualisation of local implementers as stewards helps to illuminate the processes with which they trigger context-specific solutions and recalibrate them in self-organising (i.e., resulting from the local implementers' agency) processes that better target the emergent problems at hand.

However, while actors' reflexivity and creativity can extend the variety of the possible solutions on the ground, these resources can also lead to the emergence of conflicting representations of environmental variety. Self-organisation processes are expected to solidify, through co-evolution and emergence, in new levels of order (Eppel, 2017: 4). At the same time, as observed by Morçöl (2012: 100) "self-organization can create both orderliness and disorderliness" since in system evolution "there are two possibilities: either systemic properties break down (disorderliness), or new systemic properties emerge (orderliness)" (ibidem).

Considered in the non-linear context of public programmes implementation, the question then becomes how to ensure (a certain degree of) convergence in policy goals (orderliness) given the proliferation of heterogeneous local implementation solutions (disorderliness). Within a policy arena, self-organisation processes can be triggered by the relevant actors, in conjunction with specific events or situations. In these cases, autonomous actors that have a shared interest in addressing a certain problem look for common solutions, for example, through joint action. Sometimes, and paradoxically, opportunities for action can be the result of different, and even conflicting, actors' factual understandings of the world, as well as their normative preferences regarding this same world (*our thanks go to the anonymous reviewer for this insight*).

Basically, without a central planner who directs the system to a preconceived goal (Butler and Allen, 2008), complexity thinking suggests two possible ways to ensure systemic coherence: 1) interactive mechanisms of co-evolution; and 2) the role of central government, different from both command and control, and steering.

Interactive mechanisms of co-evolution

Complexity jargon primarily uses the term co-evolution to "mean reciprocal selection between systems, a process during which future states of systems are selected reciprocally by other systems" (Gerrits et al., 2009: 134). Where implementation is dispersed, intelligent and reflexive agents involved in horizontal relationships and repeated interactions observe and act on information available in their immediate environments and derived from those other agents to which they are connected (Anderson, 1999: 220). Thus, decision making in one system can co-evolve with decision making in other systems (Klijn, 2008: 310), and this can lead to mutual adaptation (Eppel, 2017).

Co-evolution also involves various processes of learning through which interactive agents search for viable smart options, learn what works and what does not work in a given situation, by adopting, transforming, opposing, deliberately rejecting the new knowledge, and by adjusting their strategy (Van Assche et al., 2022: 1232). However, in a co-evolving system not all changes in an entity

cause changes in all other entities. Rather, co-evolution relies on an idea of selectively triggered responses (Van Assche et al., 2022: 1230). By comparing strategies of various actors in the same arena in relationship to their ability to obtain relative fitness, actors can learn about what is more effective in certain situations (Gerrits and Marks, 2022: 1361). Repeated interactions facilitate local implementers to potentially identify successful and unsuccessful configurations, exchange ideas and use the acquired knowledge to select viable solutions; those options perceived as non-beneficial are discarded (Bousema et al., 2022).

Of course, co-evolution does not guarantee that a dispersed implementation process converges on a uniform solution, also because it cannot be naively excluded that extrinsic gain goals and intrinsic hedonic goals can exert an influence on local implementers' behaviours. However, the moderating effect of the predisposition to serve the public interest, together with the reasonable assumption (empirically confirmed) that when confronted with alternatives actors pragmatically will choose the one that 'fits best' the local context (Kim and Warner, 2016), strongly suggests that interactive co-evolution can reduce the proliferation of heterogeneous local solutions.

In the top-down model of policy steering, the convergence of policy goals is a matter of the best mix of incentives and sanctions. A very different way is to match (rather than simply 'align') individual and collective goals, a very similar process to that which Lindenberg (2013) calls *goal integration*. Goal matching or goal integration focuses central government on how to empower local implementers through responsibility, autonomy and trust, rather than on steering and control. Put simply, goal integration is expected to emerge organically from the behaviours of the local actors based on 'focal goals', shared values and culture.

Value management can thus replace control and enforcement as the basic mechanism for goals alignment, shifting the focus of higher levels from issuing directives to building a shared 'framework of meaning' around the policy goals. In other words, rather than shaping the pattern that constitutes a shared strategy, policy designers should shape the context within which it can emerge (Anderson, 1999).

Lastly, the principle of 'bounded self-regulation', which requires elected governments to set general rules of action in the design and implementation of public programmes and then "leave a large discretionary space to motivated stewards" (Schillemans, 2013: 16) is another mechanism though which coherence and orderliness can be achieved in a non-authoritative mode.

Role of central government

Central government can also directly intervene in the implementation process when convergence does not emerge from the behaviours of the local actors. Using a complexity jargon, the role of central government is to enable innovation though local variations while keeping the system below the 'edge of chaos'. This points to a dual governance strategy: one focusing on control and order, and another focusing on letting go and dynamics (Edelenbos et al., 2009: 3).

How this approach could actually be operationalised is still an open question. Interestingly, the need for a complexity-oriented policymaking is emerging also outside the academic debate, as the OECD (2017) recently pointed out. Table 1 (below) is a preliminary step toward this endeavour and, drawing on selected scholarly and grey literatures, outlines the fundamental areas of intervention - enabling conditions, goal setting, rule formation, incentives, control and monitoring – in which 'facilitative government' can enhance the self-steering capacity of policy systems.

Table 1 – Government tools under the complexity-embracing perspective

Areas of intervention	Examples of practices

Enabling conditions	Remove the barriers to self-organisation related to national legislation or political systems, or issues of power, discourse and social capital problems (Jones, 2011).
	Develop an administrative culture promoting the building of relationships between actors in a system, trust, shared values, principles and behaviours (Lowe et al., 2021).
	Government and policymakers should begin to experiment more widely with systems methods. Scaling up systems approaches and building them into career development and training for policymakers and other public servants should be a priority (Chapman, 2004).
	Due to the changing working method deriving from the adoption of a complexity-thinking approach, recruitment and training programmes need to change drastically (OECD, 2017).
Goal setting	A nation-wide policy should be limited to clearly establishing the direction of change; set boundaries that cannot be crossed by any implementation strategy; allocate resources, but without specifying how they should be used (Chapman, 2004).
	Policy goals need to be clear but general not detailed as actors in the adaptive environment need to be free to find their own ways to goal achievement (Stoker, 2019).
	Involve the policy implementers in the definition of mutually agreed-upon boundaries (Dicke, 2002).
	Implement interventions that directly connect local implementers to the impact of their work and build a culture that rests on the notion of meaningful significance of organisational goals (Moynihan et al., 2012).
Rules formation	Implement rules that provide boundaries but must allow for flexibility. They should be more guidelines rather than rigid formulas to be followed (Stoker, 2019).
	Make a greater use of 'trial and error' policy making and learning from pilot projects (Cairney, 2012).
	Allow local experimentations and innovations. As local agents gain experience, they learn rules about what works well, generally (Stoker 2019).
	Enable and facilitate emergent and self-organised responses, rather than emphasizing implementers' attempt to control their context, capitalizes on the effectiveness of lower levels in addressing complex problems (Jones, 2011).
	Promoting value-based decisions (instead of simply regulating) to allow individual organisations to set their own processes to achieve shared goals (OECD, 2017).
	Greater adaptation and experimentation by those realising policies could lead to much greater information about what works. Central government could act as a repository of the evidence and ideas that these activities generate or enable connections between actors – without mandating a particular approach (Hallsworth and Rutter, 2011).
Incentives	Reputational and non-financial incentives appeal more clearly to the motivational structure of local implementers. Incentives, such as praise, realisation, acknowledgment and reputation are important for them (Van Slyke, 2007).
	Incentives need to reward those who energetically search out experience and ideas, network, facilitate and understand the systems within which they operate (Hallsworth and Rutter, 2011).
	Policy makers may attempt to steer the system using advocacy, changing incentives or prices, nudging system users, or creating greater transparency (Hallsworth and Rutter, 2011).
Control and monitoring	Feedback on policy success is key. Learning, monitoring and understanding are all fundamental to what is a more stewardship manner of governing. (Stoker, 2019).
	Internalised mechanisms of reporting, information processing and recording, then, are to be prioritised above external demands for information and external behavioural guidelines (Schillemans 2013).
	Since goals and performance targets are largely jointly developed, performance information is used for learning rather than control (Bjurstrøm, 2020).

	Policy makers should oversee the ways in which the policy is being adapted, assess progress towards the policy goals; identifying problems that central government could help resolve; judging the effects of the adaptation that may be occurring, and attempting to steer the system towards certain outcomes, if appropriate (Cairney, 2012).	
	Develop more flexible, inquiring approaches to gaining feedback. This will require a more sustained engagement with a policy area, good relationships with stakeholders in order to get their perspectives, and the ability to perceive patterns that may indicate future changes (Hallsworth and Rutter, 2011).	
	If appropriate for the issue or system, or needed when the lines are crossed or the standards are not fulfilled, policy makers may also use direct intervention to address problems (Hallsworth and Rutter, 2011).	

Final remarks and conclusions

Starting with the deceptively simple question "*How can the implementation puzzle be framed from a complexity-embracing view?*" the paper has provided a broad overview - from a complexity thinking perspective – of how and why the self-organisational behaviour of purposeful local implementers may vary in response to central policy provisions. The rationale for such an endeavour derives, on the one hand, from the need to surpass the artificial "scientific division of the production work of the public policies" (Regonini, 2001: 217, our translation) and, on the other, to both capture and address the non-eliminable complexity of the multi-level governance settings. The implementation puzzle has been understood here in terms of the emergence of a variety of solutions or arrangements at local level that co-evolve with local actors' dispersed agency.
Based on the above arguments, Table 2, below, summarises the ideal-typical contrast between the rational-instrumental and the complexity-embracing ways of thinking.

Table 2 – Rational instrumental and complexity-embracing ways of thinking (author's elaboration)

	Rational-instrumental	Complexity-embracing
Role of top government	Setting goals, means and methods	Goal setting; shaping of the enabling conditions
Governance strategy	Control and order	Dual focus: on control and order; and on letting go
Mode of governance	Legislation	Regulation
Governance tools	Law, incentives, sanctions	Self-organisation, emergence, mutual adjustment
Implementation strategy	Planned; top-down	Emergent; bottom-up
Problem-solving strategy	Simplification, standardisation, reduction	Complexification, variation
Local variations	Plan deviations	Emergent solutions
Outcomes alignment	Compliance	Shared values, mutual adaptation, goal integration, mutual learning
Local implementer	Utility maximiser agent	Steward
Theoretical foundation(s)	Rational choice theory, methodological individualism	Complexity thinking; Stewardship theory; Microfoundations
Form of rationality	Instrumental	Value-based

The paper makes two distinct theoretical contributions to the implementation puzzle debate. *First,* the combination of complexity thinking and stewardship theory (and microfoundations thereof) as an analytical lens broadens the focus of inquiry from that of formal public programmes to the actual circumstances that play out in real life. Stewardship theory illuminates the bottom-up processes with which the local implementers trigger issue- and context-specific solutions and recalibrate them

to better target the emergent problems at hand. Considered in these terms, stewards creatively mobilise intelligence to take "appropriate action in an ethical-moral context where values and ends must be explicitly considered" (Sanderson, 2009: 710).

Second, the thicker connotation of actor here proposed, which highlights both the 'intelligence' and 'astuteness' of local implementers and the range of social and personal resources that peripheral actors can readily access and leverage, including a strong understanding of the local dynamics, with long-built and often largely tacit knowledge of the drivers of behaviour, and how issues relate to these. As observed by Colander and Kupers (2014: 254), these resources are not simply additive ('add-ons to policy making') but, rather, attributes that can lead to emergent public solutions.

In a world where policy implementation is nonlinear, uncertain and embedded in a variety of multilevel governance arrangements, the article has argued that a shift in the thinking of central decision makers is required to overcome the "*wicked problems*" of today.
We acknowledge that, in its current state of development, a complexity-embracing approach offers no directly applicable solutions, e.g., it does not help to design substantive public policies in detail. Nevertheless, the examples shown in Table 1 do offer potential support to identify actionable prescriptions in several key areas.
Here, we have attempted to surpass the limitations of the rational instrumental approach and chart an alternative path. This is, however, a bare beginning. Of course, that does not demonstrate the superiority of what is proposed on paper in a relatively simplified way. For example, the proposed analytical dimensions sketched in Table 2 need to be developed and corroborated by future research. Also, further elaboration and refinement are required to answer a number of pressing questions. For example: why do some actors have more self-organisational capacities than others? How can local implementers be empowered to play an effective role as intelligent actors in fragmented settings? How could performance evaluation systems meaningfully capture local variations? How can questions of power and politics influence the value-based behaviours of local implementers? Which organisational designs better enable central governments to tap into the resources of local implementers?

Finally, the 'intelligence' and 'astuteness' of local implementers need to be studied systematically and throughout the entire policy cycle, also in relation to non-governmental actors with a direct role in bringing the policy to life. Our research will tackle these crucial aspects next.

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