RESEARCH ARTICLE



Policy coordination and development in a VUCA world

Michael Mintrom Ruby O'Connor

Monash University, Melbourne, Victoria, Australia

Correspondence

Michael Mintrom, Monash University, Melbourne, Vic. 3800, Australia. Email: michael.mintrom@monash.edu

Funding information Monash University

Abstract

A growing bandwagon of commentators declare our collective existence is subject to volatility, uncertainty, complexity, and ambiguity. Welcome to the 'VUCA world'. Since populations typically turn to governments for support when crises strike, there is merit in policy scholars paying close attention to the 'VUCA world' narrative. This article assesses the implications of the VUCA narrative for policy professionals charged with conducting policy coordination and development. If volatility, uncertainty, complexity, and ambiguity are becoming more commonplace, what aspects of coordination and development work should change? We indicate how policy professionals might harness new technologies and integrate them with long-term planning tools to help governments anticipate and reduce the consequences of crisis events. A lot of the technology now at our fingertips can be usefully deployed to assist with improved policy coordination and development to rapidly and effectively respond to VUCA-like challenges. Further, more 'stewardship' capability in and around government must be built to enable exploration of future scenarios so societies can stand ready to address anticipated eventualities. We conclude that the VUCA narrative can promote salutary improvements in the practice of policy coordination and development.

The description of the world as becoming increasingly volatile, uncertain, complex, and ambiguous first surfaced among leadership conversations and military strategy training sessions in the United States in the early 1990s (Barber, 1992). The notion of a 'VUCA world' implies that whatever we are now experiencing is more challenging than a prior time when the world exhibited more evidence of stability, certainty, simplicity, and clarity. The typical explanation for the rise of the VUCA narrative is that, by the 1990s, the perceived 'bipolar' equilibrium established during the Cold War was breaking down. Yet only through the narrowest of viewpoints can the decades of the Cold War - spanning from the end of World War II in 1945 to the fall of the Berlin Wall in 1989 - be construed as more stable and simpler than the times that followed. Ironically, the narrative of a VUCA world can itself be seen as somewhat simplistic and forced. That said, the claim that we are living in a VUCA world has gained considerable traction (Rath et al., 2021). As such, the claim and its implications deserve careful scrutiny. We also

note that the rise of the VUCA narrative has seen parallels in discussions of, among other things, the growing prominence of 'wicked problems' (Head, 2019) and the emergence of the paradox perspective in organisation theory (Carmine et al., 2021; Waldman et al., 2019). Our purpose is to consider what implications the VUCA narrative holds for actors in and around governments charged with leading policy coordination and development. While we adopt an ambivalent perspective regarding the VUCA narrative, we also find value in it for public policy researchers and practitioners.

The proposition that the world is becoming increasingly volatile, uncertain, complex, and ambiguous suggests that action should be taken so that governments can find effective ways to negotiate contemporary challenges to the benefit of populations living within their jurisdiction. In this proposition, we find much continuity with prior discussions of the role of government in society. Systems of government policy coordination and development have always been predicated on the need to promote more stability and certainty in the face of

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broader processes that could rapidly degenerate into volatility and chaos. Hobbes (1588-1679) articulated this point memorably in Leviathan (1651) when he worried about forces in 'the state of nature' that can readily coalesce to make life 'solitary, poor, nasty, brutish, and short' (Hobbes, 1651). Hobbes argued that the unambiguous concentration of power in strong government was a necessary response. Subsequently, much contract theory, including the work of Locke (1632-1704), was devoted to exploring what might constitute the appropriate balance of the freedoms of individuals and the reach of the state (Locke, 1669). The constitutions of contemporary governments and the declarations of the United Nations and other international organisations all represent the ongoing effort to promote stability and certainty and to embed specific norms and values in the face of ongoing concerns about the state of nature. We might hold up as salient examples the contributions of Thomas Jefferson and James Madison to the development and discussion of the Constitution of the United States (1787) (see Hamilton, 1788) or, more recently, the drafting of the Universal Declaration of Human Rights (1948).

1 | AN OVERVIEW OF THE APPROACH

Our assessment of the VUCA narrative's implications for policy coordination and development proceeds in several steps. In what follows, we first present a theoretical framework. Here, we use a review of contemporary theories of the policymaking process to highlight the continuity to be found in how policy scholars have sought to understand forces of stability and change. We argue that the central purpose of policy coordination and development initiatives has always been - and continues to be - the pursuit of stability and certainty in the face of forces that tend to produce instability, uncertainty, and change. Grounded in a strong conceptual tradition, our framework presents a coherent means by which policy researchers and practitioners can interpret and respond to concerns about increasing evidence of volatility, uncertainty, complexity, and ambiguity. We suggest that efforts to address VUCA forces can benefit from approaches that promote short-term mitigation of those forces and long-term adaptation to them. Having developed this framework, we next apply it using two case studies, each of which takes the Covid-19 global pandemic as its starting points. One case considers how advances in information technology and artificial intelligence might be harnessed by policy advisors to support rapid responses to crisis episodes. The second case considers how classic policy development tools of planning and scenario modelling can support improved discussion and actions towards adaptation strategies fit for a VUCA world. We conclude the article

Policy Implications

In a VUCA world, government leaders should ensure that policy coordination and development is ready to meet anticipated challenges. These functions should:

- Build on existing procedures for best interpreting policy problems, proposing possible responses, gathering evidence to determine the suitability of specific options, and anticipating implementation challenges.
- Evolve to become adept at fast policy triage through better evidence-based practice, informed by the rapidly growing body of information about what policy responses work well within specific contexts.
- Continuously improve their data collection and analysis capabilities, supported by various forms of artificial intelligence, so that major, emerging challenges can be rapidly and effectively mitigated.
- Strengthen long-term scenario planning, bringing to many areas of policy development techniques that have long been deployed in venues such as war gaming, where lessons from the past are integrated into preparedness plans.

with brief reflections on lessons to be drawn from these cases and the broader implications of our analysis for future policy coordination and development efforts.

2 | POLICY COORDINATION AND DEVELOPMENT AND THE VUCA NARRATIVE

Literature on the VUCA world is often tailored to businesses or leadership scenarios in the private sector (Bennett and Lemoine 2014a; Johansen & Euchner, 2013; Mack & Khare, 2016; Rath et al., 2021; Sinha & Sinha, 2020). While useful, these insights and analyses need to be updated and reconsidered to account for the unique contexts and complexities inherent in public sector decision-making. Our research and the lessons proposed contribute to a nascent body of literature that explicitly brings a public policy perspective to the consideration of policy system and governance responses to VUCA conditions. Key prior contributions adopting this perspective include Eden et al.'s (2021) work on event analysis as a contribution to effective evidence-based policymaking in a VUCA world; Hoang's (2023) exploration of adaptive governance as an effective approach to VUCA problems; Moreno and



Mauricio's (2021) call for increased coordination within and between governments as a response to VUCA conditions; and recent treatment of sustainability challenges as wicked problems in the 'VUCA era' (Sempiga & Van Liedekerke, 2023; Zu, 2023). We offer a different perspective by combining insights from five established policy theories and then approaching the VUCA frame, not as an entirely novel concept or process, but as a narrative that can drive proactive responses to complex scenarios.

Since the middle of the twentieth century, public policy researchers have developed a variety of theories of the policy process (Weible & Sabatier, 2018). These theories have often emphasised different elements of that process. But both individually and in combination, these theories have proven remarkably useful in shaping our understandings of how actors in and around government seek to tackle challenging problems and address them as effectively as possible, given practical constraints. As such, the theories have served to both explain and guide central aspects of policy coordination and development. For the purpose of this discussion, we briefly review five such theories. They are (1) incrementalism; (2) the multiple streams approach; (3) punctuated equilibrium; (4) the advocacy coalition framework; and (5) the narrative policy framework. As we do so, we highlight what these theories of the policy process tell us about the pursuit of stability and certainty in the face of complexity and uncertainty. We then return to the VUCA narrative and draw out its implications for policy coordination and development.

We suggest that fruitful insights can emerge when the VUCA narrative is engaged in a manner that acknowledges knowledge embedded in established theories of the policy process. For present purposes, we place our focus on implications for policy coordination and development efforts intended to mitigate crises and support long-term adaptation to challenges highlighted by the VUCA narrative. Table 1 presents a summary of this discussion of theories of the policy process and the VUCA narrative.

Advanced by Lindblom (1959, 1979), incrementalism posits that most change within policymaking occurs through small steps pursued by risk-averse policymakers. Lindblom rejected the notion that policymakers follow a rational choice strategy, in the sense of defining the problem, laying out alternative solutions, predicting the consequences, valuing the outcomes, and making a choice. Even if a single actor intended to act rationally, complexity would soon make the exercise of rational choice impossible. The potential for rational choice is further stymied because reasonable people can be expected to disagree about many aspects of a given policy issue. Complexity and disagreement reduce the odds that bold policy responses will ever be adopted with unanimity. Incrementalism is the result.

Even though incrementalism may seem frustrating to those seeking rapid and dramatic shifts in public policy settings, Lindblom (1968) characterised it as a 'shrewd, resourceful' way of wrestling with complexity. He argued that focus should be placed on the behaviour of

TABLE 1 Theories of the policy process and the VUCA narrative.

Policy theory	Key contribution	Intersection with the VUCA narrative
1. Incrementalism	Posits that most change within policymaking occurs through small steps pursued by risk-averse policymakers	A range of institutions charged with policy coordination and development have been established to bring stability and order to a world that could otherwise be buffeted by forces of a VUCA world
2. Multiple Streams Framework	Posits that policy issues emerge on government decision-making agendas as the result of developments in three separate process streams: problems, policies, and politics. It explicitly accounts for contextual volatility and how governments develop novel responses to emerging challenges	Even though ideas often sweep policy communities, governments typically react slowly in response. To survive, ideas must be perceived as workable and must be compatible with the values of a majority of specialists in the relevant policy community
3. Punctuated equilibrium	Addresses the discrepancy between incrementalist accounts of why policy change occurs slowly and the multiple streams approach, which opens space for instances of dramatic policy shifts	Suggests that the challenge for those seeking non- incremental policy change to address aspects of the VUCA world is to undermine existing policy images and create new ones that emphasise major problems and highlight why the status quo is not sustainable
4. Advocacy Coalition Framework	Posits that forces for change come from both inside and outside of policy systems but to have political effect, those catalysts for change need to be appropriately interpreted and translated	Offers useful insights into how policy communities might process new challenges arising from a VUCA environment
5. Narrative Policy Framework	Posits that narratives shape political debates in formal and informal venues alike and are considered influential in different stages of the policy process	With its focus on the marketing of ideas, this framework offers another way of understanding how policy systems might interpret and respond to novel challenges arising from a VUCA world



proximate policymakers, anyone with decision-making authority: legislators, political executives, appointed bureaucrats, and some party officials. Proximate policymakers operate within a 'play of power' governed by institutional structures, or the rules of the game, that include the provisions of relevant constitutions, legislative acts, administrative rulings, executive orders, and judicial decisions. Policy choices emerge from structured interactions among proximate policymakers.

As a description of policymaking processes, incrementalism shares with recent variations of institutional theory a focus on following established rules, procedures, and norms (March & Olsen, 1989; Powell & DiMaggio, 1991). Adherence to these rules, procedures, and norms is specifically intended to promote stability and a degree of certainty and clarity within systems of political bargaining and policy development. In the absence of these rules, procedures, and norms, political decision-making could otherwise become mired in conflicts leading to volatility. Incrementalism and the institutions in which it occurs represent deliberate efforts to promote effective policy coordination in the known absence of mechanisms for information gathering and processing that could potentially lead to more optimal policy choices.

Policy scholars who have advanced and applied incrementalist and institutionalist accounts of policymaking have not done so with reference to the VUCA narrative. But it is clearly apparent that a range of institutions charged with policy coordination and development have been established to bring stability and order to a world that could otherwise be buffeted by volatility, immobilised by uncertainty, overwhelmed by complexity, and mired in ambiguity. Incrementalism is a form of policymaking that is often deemed 'too slow' and formulaic. But the taking of small, measured decisions is deliberately intended to reduce the making of hasty mistakes. Furthermore, when policymakers and advocates adopt a long-term view, it is entirely possible for them to navigate an incrementalist policymaking world to produce significant policy changes over a number of years.

Advanced by Kingdon (1984/2011), the multiple streams approach conceptualises the policymaking process in a way that explicitly accounts for contextual volatility and how governments develop novel responses to emerging challenges. Kingdon argued that policy issues emerge on government decision-making agendas as the result of developments in three separate process streams: the problem stream, the policy stream, and the political stream. Kingdon suggested that 'windows of opportunity' can emerge when these three streams are joined, and he proposed that the work of joining the streams falls to energetic actors termed policy entrepreneurs. The problem stream is where efforts are made to draw attention to issues and encourage a policy response. Those benefiting from the status quo face incentives to convince others that no problem worthy of government attention exists. Those seeking to highlight a problem, aside from demonstrating the problem's significance, must show that viable policy solutions are available. In the policy stream, communities of policy specialists generate and debate numerous ideas for policy solutions. Occasionally, members of these communities come up with new ideas for policy solutions, but mostly they reformulate or recombine old ones. Even though ideas often sweep policy communities, governments typically react slowly in response. To survive, ideas must be perceived as workable and must be compatible with the values of a majority of specialists in the relevant policy community. The political stream is composed of things like election results, changes in administrations, changes in the partisan or ideological distribution of legislatures, interestgroup pressure campaigns, and changes in public opinion or the national mood.

Changes in the political stream and occasional changes in the problem stream, like focusing events, provide the major opportunities for agenda changes in government. Agenda change can come rapidly at times, but organised political forces can serve as a brake. For even the possibility of major policy change to arise, serious amounts of bargaining and coalition building in the political stream typically must occur.

A discrepancy exists between incrementalist accounts of why policy change occurs slowly and the multiple streams approach, which opens space for instances of dramatic policy shifts. To reconcile these accounts, Baumgartner and Jones conceived the policy process as characterised by punctuated equilibrium. In this conception, policymaking in specific areas of activity often experiences long periods of stability interrupted by moments of abrupt, significant change (Baumgartner & Jones, 1993/2009). Following Lindblom (1959), Baumgartner and Jones suggested stability is the product of the inability of legislators to attend to more than a few issues at a time. Stability is further supported by the emergence of policy monopolies, controlled by people who go to considerable lengths to promote positive images of current policy settings and deflect calls for change. In this interpretation of policymaking, the task for advocates of policy change is to bring the policy issues into the public arena and invoke a groundswell of change-forcing interest. Even within stable systems, the potential for change exists. The challenge for those seeking such change is to undermine existing present policy images and create new ones that emphasise major problems and why the status quo is not sustainable.

Baumgartner and Jones noted that it is possible for policy changes to occur in multiple venues. When policy change appears blocked at one level (e.g., the national government level), it might be effectively pursued elsewhere (e.g., at the state or local level). This suggests efforts to establish new ways of doing things in one venue can create momentum for change across



a whole system. For example, many state-level leaders in the United States have introduced major changes that other states subsequently adopted. Further, these state-level changes can serve to change conversations at the federal level (Mooney, 2020).

Sabatier's (1988) theorisation of policy change generated the advocacy coalition framework and subsequent refinements of it (e.g., Sabatier & Jenkins-Smith, 1993; Weible & Sabatier, 2018). According to Sabatier, advocacy coalitions consist of 'people from a variety of positions (e.g., elected and agency officials, interest group leaders, researchers) who share a specific belief system - i.e., a set of basic values, causal assumptions, and problem perceptions - and who show a nontrivial degree of coordinated activity over time' (Sabatier, 1988, p. 139). Coalition participants seek to ensure the maintenance and evolution of policy in specific policy domains. Within the advocacy coalition framework, change comes from both internal and external sources. But, to have political effect, those catalysts for change need to be appropriately interpreted and translated. This process of translation takes, for example, objective social, economic, and environmental conditions and portrays them in ways designed to increase the likelihood that they will receive the decisionmakers' attention.

The advocacy coalition framework reminds us that policymaking involves a large number of actors and organisations and that change emerges from conversations among these entities. Shared meanings and interpretations operate as mechanisms both for promoting stability and for making sense of specific new developments. These new developments can emerge from changes in the natural environment, technical innovation, or political realignments. As such, the advocacy coalition framework offers useful insights into how policy communities might process new challenges arising from an environment characterised by volatility, uncertainty, complexity, and ambiguity.

The narrative policy framework (NPF) has recently risen to prominence as a theory of the policy process. Jones and McBeth (2010) argued that policy narratives can be studied using systematic empirical approaches. They set forth a formal framework for elaboration and empirical testing. The framework has been most recently summarised by Shanahan et al. (2018). The narrative policy framework investigates the empirical role of policy narratives in the policy process by asking '[d]o narratives play an important role in the policy process'? (Shanahan et al., 2018, p. 173). This is not an insignificant question as narratives shape political debates in formal and informal venues alike and are considered influential in different stages of the policy process. Policy narratives are strategic stories consisting of a setting (political context); characters (heroes and villains, beneficiaries, allies, and opponents); a plot; and a

moral of the story – the outcome designed for the public good (Jones & McBeth, 2010).

According to the narrative policy framework, the narrator's intention is to influence the policy process. To do so, the narrator can deploy a range of 'policy narrative strategies'. Shanahan et al. (2018) highlight three such strategies. First, it is expected that narrators who perceive themselves as losing in a policy debate will attempt to expand the scope of conflict, whereas those who believe they are winning will attempt to contain the issue and retain the status quo. Second, narrators are expected to ascribe causal mechanisms to situations in a fashion that assigns responsibility and blame for specific outcomes. These causal mechanisms could highlight that outcomes were intentional, inadvertent, accidental, or mechanical. Third, narrators are expected to deploy the 'devil-angel shift'. The 'devil shift' occurs when the narrator exaggerates the malicious motives, behaviour, and influence of opponents. The 'angel shift' occurs when narrators emphasise their ability to solve a problem and de-emphasise the agency of opponents (Shanahan et al., 2014). Within the narrative policy framework, 'policy marketers' are highlighted for special attention. A policy marketer could emerge from various positions in and around government. For example, the role could be played by members of an interest group, by people in the media, or by elected officials. Policy marketers 'spend much of their time constructing public policy problems, defining relevant policy beliefs, and ultimately reducing complex and interrelated societal problems into simple policy marketing packages' (McBeth & Shanahan, 2004). This strategic representation of policy problems is a means of promoting specific interests. Policy marketers are a kind of elite actor and their narratives may be geared towards not only the public in their effort to shift public opinion, but also towards other actors in the policy process (Shanahan et al., 2018). The narrative policy framework offers another way of understanding how policy systems might interpret and respond to novel challenges arising from a world characterised by volatility, uncertainty, complexity, and ambiguity.

This review of major theories of the policy process highlights distinctive interpretations of how actors in and around government seek to tackle and address challenging problems. Despite the differences among them, all these theories foreground a perennial challenge: How to balance stability and change in policy coordination and development. That challenge is of high relevance to discussions of the VUCA world and how decision-makers should respond to it. Consider, for example, a claim made by Bennett and Lemoine (2014b). They suggest that increasing volatility, uncertainty, complexity, and ambiguity should be met with four responses. These are (1) strategic foresight; (2) paying close attention to emerging evidence; (3) working to simplify complex problems and effectively



communicate with others to solve them; and (4) the ability to quickly adapt to new conditions. They summarise these as vision, understanding, clarity, and agility – four words that also transform into VUCA. Bennett and Lemoine (2014b) term it 'VUCA prime'. This convenient way of summarising recommended responses to a VUCA world holds appeal. That is because, as our review of theories of the policy process highlights, these four responses have long been recognised by policy researchers as necessary for driving change in policymaking processes.

To summarise this discussion, effective social and economic institutions - including governance arrangements and policymaking processes – have always been designed and refined to bring stability and order to complex organisational environments, while maintaining the capacity to appropriately consider and address changes thrown up by the broader operating context. Much of the scholarship concerning policymaking processes has focused on how specific actors and entities gather evidence, make arguments, and create coalitions to drive policy change in the face of significant forces serving to maintain the status quo. When speaking of the VUCA world, some commentators have suggested that adequate responses will call for extensive changes in how societies and political systems operate. One such view construes past decision-making practices as being sluggish and poorly suited to the current times (Van der Wal, 2020). On this point, we disagree. We take the view that many aspects of contemporary policymaking processes lend themselves to sound policy coordination and development in a VUCA world. Rather than reject or seek to abandon traditional policymaking practices, we suggest that many elements already present within them could, with appropriate adjustments and evolution, serve governments well in a future characterised by increasing volatility, uncertainty, complexity, and ambiguity. In what follows, we introduce two case discussions to further explore how policy coordination and development work might usefully evolve in the coming years.

3 | POLICY COORDINATION AND DEVELOPMENT IN A VUCA WORLD

In the current epoch, we have seen governments around the world being challenged by a range of phenomena that appear consistent with the claim we are now living in a VUCA world. Decades of globalisation and international integration of manufacturing and trade have led most countries to now have financial and economic systems that can be rapidly disrupted by distant events and chain reactions. One container ship blocking the Suez Canal can slow down world trade (Yee & Glanz, 2021). Likewise, a few weeks of the war in Ukraine can create grain shortages and the

threat of famine across a swathe of African countries (Arndt et al., 2023). More broadly, climate change is now beginning to have unprecedented and devastating impacts. For example, with increasing frequency, we receive news of floods causing widespread damage which can have long-term effects on agricultural production, public health, livelihoods, infrastructure, and access to social services. And, since the emergence of Covid-19 at the start of 2020, everyone everywhere has become aware of the speed with which a deadly virus can spread around the world, bringing illness, death, and massive disruption to economies and societies.

How might policy coordination and development be adapted to improve the capability of governments to respond to crises? We consider this question using two cases, each of which is discussed with reference to policymaking in response to the Covid-19 pandemic. The first case considers how governments can effectively harness new technology to improve policy coordination and development. Here, we emphasise the need for governments to improve their capacity to rapidly triage problems or crises and deliver mitigation strategies. The second case considers how long-term planning and anticipatory public policy can contribute to arresting the challenges posed by a VUCA world. Here, we emphasise the need for governments to support people, organisations, and businesses to implement mediumto-long-term adaptation strategies that build resilience in the face of likely future threats including climate change, pandemics, economic instability, and wars.

Before turning to these cases, it is useful to reflect on the evident capability of governmental systems to absorb and make effective use of analytical techniques and technological systems initially developed for private sector purposes. Statistical techniques, methods of data collection and management, operations research, and actuarial practices have all been adapted, developed, and refined over time by businesses and consulting firms to improve their decision-making capabilities and ultimately enhance business processes and performance. They represent just the most salient examples of tools devised to improve decision-making that governments have adapted to advance the creation of public value (Patton et al., 2015; Radin, 2000; Stokey & Zeckhauser, 1978). We suggest that this ability to absorb and effectively refine and deploy ongoing technological advances will be critical to governments as they seek to bring stability, certainty, simplicity, and clarity to a world where it seems increasingly easy to spot challenges caused by volatility, uncertainty, complexity, and ambiguity.

When the World Health Organisation declared Covid-19 a pandemic in March 2020, some governments around



the world were far better placed than others to respond effectively. Recent analysis suggests that the nature of the response was contingent on factors that included pre-existing population health and national GDP (Bollyky et al., 2022). But trust in government has also been shown to have been a significant factor influencing health outcomes (Han et al., 2023; Shanka & Menebo, 2022). Among other things, the level of trust that citizens have in their governments is influenced by perceptions of capability. Consequently, governments with effective systems of population health, communication with the public, and maintaining public order were better placed to address the pandemic than their counterparts (Liu et al., 2022). We also know that countries with effective systems of disease control and that were readily able to assemble advisory bodies that contained medical experts and epidemiologists were able to quickly interpret new information and translate it into appropriate policy responses (Boin et al., 2020; Christensen et al., 2023). Within a very short time of Covid-19 beginning to spread, disease tracking platforms such as the COVID-19 Dashboard developed at the John Hopkins University drew upon existing networks to gather, analyse, and share highly relevant data about where the virus was spreading, the number of reported cases, and the number of fatalities attributed to it. Just as these disease-tracking platforms started reporting their close-to-real-time findings, other initiatives like The Oxford Covid-19 Government Response Tracker got underway to track the policy choices being made by governments around the world in response to the pandemic. Consequently, it soon became possible for researchers and analysts located anywhere around the world to draw connections between what was happening on the ground with the spread of the virus and the apparent efficacy or lack of efficacy of related public policy initiatives. The open nature of these online initiatives can also enhance transparency and trust in policy decisions. By using this publicly available information, and publishing their own daily updates on case numbers and other relevant data, some governments were able to provide convincing narratives about why certain policies were being put in place and direct people to the evidence that guided these decisions (Mintrom & O'Connor, 2020). These developments indicate ways that governments could enhance their analytical capabilities and public trust in the coming years.

Effective policy coordination and development relies critically on the assembly and analysis of relevant evidence. For governments to become more adept at policy coordination and development in the face of increasing volatility, uncertainty, complexity, and ambiguity, more work is required to harness new technology in ways that support the making of fast-paced policy choices that produce the intended effects with a significant degree of accuracy. Two matters are of high relevance to this effort.

First, recently, various initiatives around the world have seen the development of repositories of information about the policy choices of governments and their resulting impacts (Bragge et al., 2011). These 'what works' initiatives have greatly increased the potential for governments everywhere to learn from the experiences of their peers and quickly narrow down options that they might explore in the face of new problems or challenges emerging. 1 Layers of sophistication can be built into such initiatives and they can provide a different level of detail, and therefore serve a different purpose, than the near real-time Covid-19 information provided through the data repositories developed by John Hopkins University and Oxford. For example, for several decades, the Washington State Institute for Public Policy (WSIPP) has engaged in systematic evidence reviews and combined them with cost-benefit analyses to produce advice to the Washington State government about the expected return on investment of pursuing specific policy options. Governments elsewhere have sought to replicate this kind of investment analysis (Mintrom & Luetjens, 2018). Much room remains for improvements in how relevant information is gathered, analysed, and presented. Technology, ranging from now familiar forms of information sharing online to more novel applications of data science and Artificial Intelligence, will likely play a key role in facilitating these improvements (O'Connor et al., 2024).

Second, governments need to get better at modelling the consequences of policy changes in one area for adjacent areas of human activity. For example, during the Covid-19 pandemic, many governments instituted forms of 'lockdown' intended to seriously restrict the movements of people and thus retard the spread of the virus. But calling for people to 'shelter in place' at home had significant implications for many businesses, schools, and healthcare provision not related to Covid-19 (such as urgent and elective surgical procedures). In the wake of these lockdowns, efforts have begun to estimate their consequences, for example, for the educational progression of school students (Kuhfeld et al., 2022) and for the mental health of specific communities (Butterworth et al., 2022). Ideally, it would have been helpful if governments in the midst of the pandemic could have had more information available to indicate the consequences of lockdowns beyond restraining the spread of the virus. Looking to the future, much scope exists for finding analytical procedures that will allow policy decisions in the midst of crisis situations to be guided by more knowledge of the likely second- and third-order impacts of specific choices. Policymakers could then more clearly see the trade-offs and opportunity costs associated with specific policy choices. The challenge here is not to devise highly sophisticated models that reflect the complexity of society. Rather, it would seem, the challenge is to devise procedures that guide analysts to rapidly



assemble custom-made dashboards to guide effective decision-making from case to case. The policy choices needed to effectively respond to floods or to supplychain challenges are likely to be different from those needed to effectively respond to a pandemic. Knowing what evidence needs to be pulled together into any specific dashboard will inevitably call on a combination of human expertise and modelling methods. Pursuing analytical procedures in this direction holds the promise of greatly improving the quality of policymaking both in times of crisis and for the ongoing refinement and delivery of established government services. However, as Lee and Moon (2022) point out, the use of big data analytics in cases of VUCA and wicked policy problems needs to account for the potential limitations and biases built into current and historical datasets. Reflexivity and critical thinking, the 'human experience' referenced above, will be key to avoiding unintended negative consequences.

3.2 | Case 2: Long-term planning and anticipatory public policy

Long-term planning initiatives have always been understood as an important part of the work of governments. Land use, urban design, infrastructure management, and the development of appropriate defence capabilities all call for long-term planning. That is because each involves significant lag times between when decisions are taken and when implementation can occur. As a subset of efforts to design defence capabilities, aspects of war gaming have been undertaken for at least the past thousand years (Mason, 2018). Scenario planning has its origins in war gaming (Vervoort et al., 2015). This methodology for anticipating future challenges and how to address them has recently started to take a more prominent place within policy coordination activities (Amer et al., 2013). But the fact remains that long-term planning is not given extensive attention or resources within most government entities charged with policy coordination and development. In a climate where elected politicians are typically seen as those most appropriately placed to call the shots on policy direction, any public servants who hold ambitions to conduct long-term policy planning are typically viewed with suspicion. There are exceptions. Over the past few decades, there have been occasional efforts in the United Kingdom to place more emphasis on policy work for the long term. Picking up on these efforts, there have been initiatives in Singapore and New Zealand to lengthen out the vision that policy advisors bring to their work (Maniam, 2019; Washington, 2023). The Centre for Strategic Futures houses the Singapore government's foresight capabilities. In

New Zealand, these responsibilities have been more devolved. Government agencies have been required to take a 'stewardship' role and to develop evidence-informed plans concerning likely future scenarios and effective ways to respond to them (see also He et al., 2022). In our view, more work of this kind could greatly benefit governments as they face the challenges of a VUCA world. This view is shared by Lorraine Eden and her colleagues who have proposed more use of high-quality evidence for analysing shock events as a useful response in a VUCA world (Eden et al., 2021). The key task is to consider policy actions that could build overall resilience in society by appropriately adapting to changing conditions.

Beyond defence planning initiatives, another area of activity that could be more broadly emulated concerns pandemic preparedness. In the United States, the Centers for Disease Control (CDC) were first established in 1946. In subsequent decades, the CDC has established an enviable reputation as an organisation that prepares well for managing the outbreaks of communicable diseases, such as Covid-19. Partly due to the adversarial stance that former President Donald J. Trump took towards the CDC during his tenure (2017-2021), the organisation drew considerable criticism for its work relating to Covid-19 (Lutz, 2022) that stands in contrast to how it had previously been perceived. For example, the CDC is well regarded for its contribution to the near-elimination of tuberculosis during the twentieth century, for stemming the HIV-AIDs epidemic, and for effective coordination with international organisations like the World Health Organisation and the World Bank to address the Ebola epidemic that spread through several African countries in 2014 and threatened to spread around the world. We also know that Asian countries that established pandemic response plans after the Avian influenza (bird flu) pandemic of 2013-2017 were better placed than others to manage the early stages of the Covid-19 pandemic (Spencer et al., 2022).

Looking ahead, we suggest that there is a need for more use by governments of long-term planning and the development of anticipatory public policy. One way to promote policy work of this sort involves closely examining and seeking to learn from practices associated with war gaming, scenario planning, the stewardship model, and pandemic preparedness. This is an area of policy coordination and development where insights from design thinking - with its focus on empathetic understanding of citizens and the routine challenges they face - could prove helpful (Mintrom & Luetjens, 2016). A lot of scope exists for the routine use of policy workshops where insights from traditional context scanning and literature reviews could be combined with insights from ethnographic fieldwork to inform discussions of policy design for the future (Mintrom et al. 2024).



4 | LESSON DRAWING

Our purpose in this paper has been to consider how policy coordination and development might be made more fit for purpose for a world increasingly characterised by volatility, uncertainty, complexity, and ambiguity. While we accept the general premise that we are now living in a VUCA world, we are also somewhat wary of the VUCA narrative. Certainly, there are aspects of contemporary life that seem to conform with the VUCA narrative. But there is also much about human existence that remains stable and predictable. Furthermore, we are the beneficiaries today of efforts by our forebears, spanning centuries, intended to imbue everyday life with more stability, predictability, certainty, and clarity. In the realm of human health alone, we know so much more about the causes of myriad human ailments now than we did a century ago. The same could be said for many other areas of human activity and endeavour. It is against this backdrop that we draw three lessons regarding policy coordination and development in a VUCA world. First, we should not respond to the VUCA narrative by seeking to completely reinvent policymaking practices. Careful evolution could usefully take things in highly productive directions. Second, a lot of the technology now at our fingertips can be usefully deployed to assist with improved policy coordination and development to rapidly and effectively respond to VUCA-like challenges. Third, vision matters. We need to build more 'stewardship' capability in and around government so that we can think hard about future scenarios and ready ourselves for anticipated eventualities. We next elaborate on each of these lessons.

- 1. The VUCA world calls for evolution in policy coordination and development. Over what now seems a lengthy period, contributors to the modern discipline of policy analysis have established a range of effective procedures for interpreting policy problems, proposing possible responses, gathering evidence to determine the suitability of specific options, and anticipating implementation challenges. Theories of the policy process highlight both the forces for change in these processes and the forces that push for stability. The best contemporary practices in policy coordination and development provide a solid starting point for evolution towards a set of practices that will guide governments and their populations through challenges thrown up by a VUCA world.
- 2. The VUCA world calls for fast, evidence-informed policy triage and mitigation efforts. Emerging challenges in a volatile world frequently call for rapid responses. Traditional policymaking venues have tended to privilege slow, considered change over efforts to make policy on the fly. The big task for policy coordination and development functions now is to become adept at fast policy triage. This

- needs to be evidence-based, informed by the rapidly growing body of information we have about what policy responses work well within specific contexts. Continuing developments in data collection and analysis, supported by various forms of artificial intelligence, could greatly advance policy coordination so that major, emerging challenges can be rapidly and effectively mitigated.
- 3. The VUCA world calls for long-term scenario planning and anticipatory public policy. In a VUCA world, vision matters. Those charged with policy coordination and development need to become adept at longterm scenario planning. This means bringing to many areas of policy development techniques that have long been deployed in venues such as war gaming. It also means learning lessons from what has worked in the past (or what didn't) and integrating these into preparedness plans. What we need more of is design thinking that allows policy developers to anticipate challenges and how people will respond to them. This is how anticipatory public policy can be developed. It is essential if we are to make human society more resilient in the face of a range of natural and humaninduced problems that many people are already predicting will come to pass in the decades ahead.

5 | CONCLUSION

A growing bandwagon of commentators declare our collective existence is subject to volatility, uncertainty, complexity, and ambiguity. This has been termed the 'VUCA world'. Since populations typically turn to governments for support when crises strike, policy scholars should pay close attention to the 'VUCA world' narrative. Here, we have assessed the implications of the VUCA narrative for policy professionals charged with conducting policy coordination and development. Our motivating question has been: If volatility, uncertainty, complexity, and ambiguity are becoming more commonplace, what aspects of policy coordination and development should change? In response, we proposed that policy professionals could usefully build upon many of the processes and tools currently in place across many jurisdictions. The VUCA world calls for the development of analytical procedures that support fast, evidence-informed policy triage and mitigation efforts. It also calls for greater application of long-term scenario planning and efforts to design anticipatory public policy. Actions of this kind would allow governments to more systematically and rapidly anticipate and reduce the consequences of crisis events.

Overall, we judge the VUCA narrative to be significant and helpful. But we also caution against being caught up in the alarmist hype that sometimes accompanies this narrative. For those charged with policy coordination and development, the VUCA narrative calls



for careful, focused attention to be given to improving current approaches to addressing both immediate crises and longer-term challenges. In this regard, the VUCA narrative is salutary. Efforts along the lines we have proposed hold the potential to improve the guality, timeliness, and effectiveness of policy coordination and development across all areas of government activity. In turn, these improvements could support many broader public policy goals. These include defending people and property, maintaining public order, promoting human flourishing, promoting sustainable development, and advancing human rights. Given this, the improvements we have proposed for policy coordination and development have the potential to generate many benefits for political leaders, public managers, and members of the public everywhere.

Looking to the future, policy developers must become much more adept at rapidly diagnosing emerging challenges and exploring ways to address them. There is a need for discussion of change and effective responses to become central to policy work. For that reason, we encourage policy researchers and practitioners everywhere to make explicit space in all key areas of their work for discussions of harnessing new technology, of long-term planning, and of the importance of anticipatory public policy. These matters can be routinely discussed within project development efforts, cross-organisational collaborations, reports and communications, and mentoring efforts.

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CONFLICT OF INTEREST STATEMENT

The authors confirm that there are no relevant financial or non-financial competing interests to report.

DATA AVAILABILITY STATEMENT

The authors confirm that the data supporting the findings of this study are available within the article.

ORCID

Michael Mintrom https://orcid. org/0000-0001-7163-3997 Ruby O'Connor https://orcid. org/0000-0001-9037-509X

ENDNOTE

¹ Salient examples include the McMaster Evidence Review and Synthesis Team in Canada, the Pew Charitable Trust's Evidence-Based Policymaking Resource Centre in the United States, and the UK Government's What Works Network in the United Kingdom.

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Michael Mintrom is a Professor of Public Policy at Monash University. He holds a PhD from the State University of New York at Stony Brook. His publications include Policy Entrepreneurs and Dynamic Change (Cambridge University Press) and Public Policy: Investing for a Better World (Oxford University Press).

Ruby O'Connor is completing her PhD in Politics and International Relations at Monash University. Her research focuses on how governments have been adopting and pursuing specific AI strategies. Her research has previously been published in the Australian Journal of Public Administration and Policy Design and Practice.

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