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DISCUSSION AND COMMENTARY

Policy-making and truthiness: Can existing policy models cope with politicized evidence and willful ignorance in a "post-fact" world?

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Abstract
From "alternative facts" to "fake news," in recent years the influence of misinformation on political life has become amplified in unprecedented ways through electronic communications and social media. While misinformation and spin are age-old tactics in policy making, and poor information and poorly informed opinion a constant challenge for policy analysts, both the volume of erroneous evidence and the difficulties encountered in differentiating subjectively constructed opinion from objectively verified policy inputs have increased significantly. The resulting amalgamation of unsubstantiated and verifiable data and well and poorly informed opinion raises many questions for a policy science which emerged in an earlier, less problematic era. This article examines these developments and their provenance and asks whether, and how, existing policy making models and practices developed and advocated during an earlier era of a sharper duality between fact and fiction have grappled with the new world of "truthiness," and whether these models require serious revision in light of the impact of social media and other forces affecting contemporary policy discourses and processes.

Keywords False news · Alternative facts · Truthiness · Policy theory · Advocacy coalition framework · Multiple streams framework · Policy analysis · Policy science

Introduction: fake news, alternate facts and the assumptions of the policy sciences

It has been an unquestioned axiom over the history of the policy sciences that the purpose of policy studies and analyses is to improve policy-making by developing policy options based on the articulation of realistic solutions to carefully defined problems (Lasswell

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1970, 1971). While a perfect match is not always possible and governments can and do often under- or over-react to problems and issues which may be better or less well-defined (Maor 2012, 2014, 2015), the predominant idea motivating the policy sciences is that *some* efforts at calibrating government efforts and problem severity should be the aim of policy analysis and that a better policy is one which embodies this balance. This view has a long history in the policy sciences, going back to the pragmatics of Harold Lasswell in his early work on the subject (Lasswell and Lerner 1951) and has been reiterated most recently in the manifestation of much the same worldview in the many writings of the evidence-based and evidence-informed policy movements (Bhatta 2002; Packwood 2002; Sanderson 2002).

In recent years, however, a concern has arisen that this link between the meta-rationale for policy analysis and the actual workings of the policy process may have been disrupted, if not severed, by the well-publicized growth of disinformation campaigns, "alternate" alternative facts and the willful desire of many politicians and members of the public to avoid recognizing and engaging with real and emerging problems such as climate change (Kakutani 2018; McIntyre 2018; Kavanaugh and Rich 2018; Stoker 2018; Southwell et al 2018). Policy analysis and policy-making, it could be argued, have been impaired by this descent from the realm of truth and knowledge into, and beyond, what the satirist Stephen Colbert derisively termed the growth of "truthiness," that is opinion-driven selective provision of information or, worse, reliance upon intentionally false data and the alternate realities of conspiracy theory-driven worldviews and judgments (Dossey 2014; Proctor and Schiebinger 2008; Warnier 2013).

While conflict, misinformation and spin have been perennial tactics in policy making, the increase in recent years of both the volume of erroneous evidence and the increasing challenge of differentiating subjectively constructed phenomena from objectively verified policy inputs have increasingly raised such fears (Macafee 2013; Hong and Nadler 2016). The explosive growth and pervasive rise of social media and internet journalism as key sources of information in many countries, in particular, have been singled out has as force multipliers for these phenomena, often augmenting them in a malicious compilation of deliberate misinformation, lies and misdirection (Theocharis and van Deth 2018; Greenwood et al. 2016). In a dangerous brew the endogenous propagation of alternative facts can overlap with, and often amplify, the effect of exogenous campaigns to manufacture misinformation, paradoxically increasing the confidence of the uninformed in the accuracy of their views (Benegal 2018; Johnson and Kaye 2016; Kruger and Dunning 1999; Motta et al. 2018).

As Vosoughi et al. (2018: 1146) have noted, "Foundational theories of decision-making, cooperation, communication, and markets all view some conceptualization of truth or accuracy as central to the functioning of nearly every human endeavor." Hence successful efforts to erode the distinction between reality and imagined truth, it is alleged, threaten the continued viability of the evidence-based policy making paradigm of the policy sciences, potentially undermining the principles of policy studies laboriously built up over the past 75 years (McIntyre 2018; Kakutani 2018; Mintrom 2007; Carlsson 2017).

This article examines these such developments and asks whether, and how, existing policy frameworks have been able to grapple with the new world of false news and alternate facts. It discusses the epistemological bases of the policy sciences and the role of social media and other internet-based sources in affecting the kinds and types of knowledge utilized in political discourses and policy processes. It examines the conceptual implications and growing influence on policy-making of inaccurate, and often camouflaged, "evidence" on three commonly cited and deployed frameworks of policy-making—the policy cycle

model, the advocacy coalition framework (ACF) and the multiple streams framework (MSF).

Ultimately, it is argued that while popular and media portrayals of policy-making and policy analysis as purely technical exercises in scientific rationality may be difficult to reconcile with the new reality of false or evidence-free impaired policy making, the "standard" policy analytical frameworks found in the policy sciences prove to be quite robust in the face of these new circumstances. The models used in the discipline are very capable of identifying the key features of policy processes in the era of truthiness and the nature of the challenges policy-makers face in creating solutions to address policy problems in a world filled with post-factual inputs and influences and even suggest some strategies that can be used to mitigate their impact.

The epistemologies of the policy sciences: reason, (willful) ignorance and malice in public policy-making

Concern about a future in which policy is pursued with disregard for facts has been voiced by many prominent public figures. In an address to the 2018 graduating class at Rice University, for example, former New York City Mayor Michael Bloomberg stated:

> Today, those in politics routinely dismiss any inconvenient information, no matter how factual, as fake – and they routinely say things that are demonstrably false. … many of those at the highest levels of power see the plain truth as a threat. They fear it. They deny it. And they attack it …. The trend toward elected officials propagating alternate realities – or winking at those who do – is one of the most serious dangers facing democracies. Free societies depend on citizens who recognize that deceit in government isn't something to shrug your shoulders at. (Bloomberg 2018)

Of course, the general problem of false, biased or misleading information entering into political discussions and policy deliberations is not new and the policy sciences have always recognized both the limits or bounds of knowledge in policy-making (Simon 1967, 1978; Jones 2002) and the socially constructed nature of policy problems, solutions and targets (Schneider and Ingram 1993, 2005; Foucault 1979; Lemke 2000). Both of these components of policy-making and their impact on policy work and analysis have been a steady subject of debate and interest in the field for decades (Fischer 1987; Fischer and Forrester 1993). While new developments thus may challenge relatively naive or popular beliefs in the objectivity of evidence and technocratic views of the objective nature of policy analysis and policy-making uninformed by these internal debates, it is unclear if, and how, these developments affect the models and frameworks with which well-informed members of the policy sciences community actually work.

With respect to the role of knowledge or the epistemologies of policy-making and policy analysis, policy scientists have always viewed themselves as following a mode of "speaking truth to power" (Wildavsky 1979); that is, assembling and presenting verifiable facts and evidence about what works and what does not to policy-makers. Indeed, for decades, using this rationalist and instrumental theory of knowledge (Tribe 1972; Goodin 1980; Hawkesworth 1992), generations of policy scholars have advanced, applied, and refined models that interpret the policy making process based on the principle assumption that all

policy participants are usually both willing and able to distinguish fact from fiction, even if conflicts over meaning and strategy may be endemic to the politics of policy-making.

Epistemologically speaking, the underlying theory of knowledge behind the mainstream policy sciences, existing as a pre-supposition for analysis and deliberation, has always been a "realist" one; that is, a stance toward the world in which it is assumed that "evidence" objectively exists and can be marshalled by careful study and analysis to address specific kinds of policy problems but always with the recognition both of the limits of cognition, or the "boundedness" of rationality, and of the perpetual desire of self-interested parties to hijack, distort or otherwise re-orient public processes toward their ends and goals (Jones 2002; Habermas 1974).

In the words of uncertainty theorists, the former concern, relating to the difficulties of predicting accurately all possible courses of action and their implications, has led policy scientists to deal with a second epistemological concern—*ignorance*—which is thought to be a major source of policy failure even when polices are well intentioned (Bovens and t'Hart 1996; Howlett 2012). Of course the policy sciences are well prepared to deal with such a lack of knowledge as long as it represents a deficiency in *existing* knowledge that can be ameliorated by careful knowledge transmission and persistent education activities. In fact some scholars have characterized the work of policy analysis as a whole in precisely these terms, that is, as involving principally the effort to generate and disseminate as much policy relevant knowledge as possible, ensuring decisions are taken which are fully cognizant of all "known–knowns" (Hawkesworth 1992; Chow and Sarin 2002; Logan 2009), reducing the number of "unknown–knowns" while dealing with the risk and uncertainty caused by the presence of both "known" and "unknown" unknowns (Morgan and Henrion 1990; Manski 2013).

This epistemological stance serves not only as a call for more analysis but also as a *caveat against hubris* or the prudent acknowledgment of the probable existence of ignorance and gaps in policy knowledge (Gross 2010; Curzon and Kontoleon 2016). That is, the recognition of the boundedness of knowledge is seen not as an excuse not to undertake abandon good faith efforts at empirical description and analysis of the social world and the impact of specific kinds of government interventions within it, but rather as a warning to all parties of the imperfect nature of knowledge, the difficulties involved in predicting the future, and the need to hedge reason against uncertainty and act in a prudential or precautionary fashion (Dunn 1991; Van der Sluijs 2005).

Although studied much less frequently, the policy sciences also recognize the possibility of a third, more Machiavellian, stance toward, and practice of, the generation and use of policy knowledge, in which a much more malicious intent informs policy deliberations and actions and the concern for "speaking truth" remains a distant second to "winning" policy battles (Goodin 1980; Riker 1986; Schultz 2017). It is well recognized, of course, that policy actors sometimes do spin and misinform policy making by introducing inaccurate information into policy debates and deliberations, either intentionally or out of ignorance, sometimes in a major, concerted way as occurred in the 1960s and 1970s around tobacco control and more recently around global warming (Oreskes and Conway 2011).

Whether such actions are seen to be taken for the personal enrichment of proponents or for evil purposes such as the elimination, oppression or exploitation of rival groups or ethnicities, *malice* in this sense is a rival epistemological stance to the policy analytical orthodoxy in which instrumental reason is still present in policy-making but is exercised in the individual or group interest rather than for the public good. As highlighted by many studies of corruption and clientelism in government decision-making, for example (Scott 1969; Treisman 2007), this stance toward knowledge is an alternative to prudential reason

which utilizes certain types of evidence and facts while ignoring others in promoting and disseminating self-interested policy alternatives. In such efforts, lies and mis-statements and appeals to emotional and cultural stereotypes and attribution of false motives to rivals and targets are quite common (Goodin 1980; Maor 2015) and the existence of this way of thinking about, and "doing," policy is no surprise to the policy science community which, again, sees its role as actively discouraging or, at least, harnessing such efforts to the production of public value (Moore 1994; Schultze 1977).

Like ignorance, the malicious use of knowledge to manipulate policy processes is also anathema to traditional policy science, not only on moral grounds, since it typically replaces the public interest with the private as the chief criterion for policy adoption, but also on epistemological ones as it undermines the ability of analysts to accurately describe and convey an objective appraisal of costs and benefits to policy-makers in that common interest. But in the policy analysis community, it is again considered to be precisely the role of policy scientists and analysts to reveal these malicious lapses and re-orient policy-making back toward a more evidentiary, rational, base. That is, while it is acknowledged that disinterested truth may not always prevail in policy deliberations, and it is well recognized that in the final analysis the political merits of strategies often outweigh technical considerations, it is expected that outright falsehoods and misleading statements—such as "birtherism" or the propagation of the false claim that US President Barack Obama was born in Kenya and not Hawaii in order to undermine his legitimacy and that of the Democratic Party to which he belonged (Richey 2017)—will be called out by policy analysts and ultimately eliminated from deliberations by prudent decision-makers concerned about policy efficiency and effectiveness (Dunn 1988; Webber 1992).

In other words, whether a decision taken upon reviewing analytical outputs turns out to maximize public welfare or not, facts are expected to stand apart from falsehoods during the formulation of policy options and deliberation on implementation strategies and choices. And policy scientists have long advocated enhanced accountability, transparency and surveillance, for example, in order to minimize the occurrence of malicious practices and restrict discussion to more disinterested sources of knowledge and opinion (Galanter 1980). Elite displeasure with overt manipulation of populations and governments in self-interested directions has also served to check many of its excesses. These efforts, for example, have been greatly aided by the press and other traditional media who found that exposing malicious misinformation offers a ripe source for news, scandal, readers and viewers.

Eliminating ignorance and discouraging maliciousness have thus not surprisingly been two pillars of the policy sciences which have accompanied its realist orientation toward the provision and deployment of knowledge in the policy process. While some uncertainty and ignorance is thought to be unavoidable—such as imperfect knowledge of future conditions and impacts which constitutes an unavoidable upward bound on analysis (Simon 1978; Howlett and Nair 2017)—in general, many policy scientists until recently were content that their efforts toward the advocacy of prudence, transparency and education with the expectation that the quality of evidence and debate forward in policy-making would improve as a result and lead, in turn, to improved policy-making and policy outcomes. The emergence of claims of false news and alternative facts cited above, however, has brought to the forefront a fourth epistemological position or stance toward knowledge which policy scientists and analysis had largely discounted in the past, that is, the significance of willful ignorance in which facts and evidence which contradict or undermine strongly held opinions and beliefs are denied, obstinately contested or simply ignored.

Willful ignorance, the study of which Proctor and Schiebinger (2008) have termed the subject of the new field of "agnotology," has always existed in the form of wishful

thinking, problem denial and the refusal to recognize facts on the ground which violate strongly held religious or ideological beliefs—from the anti-Copernican views of the eighteenth and nineteenth century Catholic Church to the beliefs of regime apologists in the merits and progress made by the Chinese Great Leap Forward. *But it is also the hallmark epistemological characteristic of the era of truthiness,* one in which false facts, claims of fake news and, in general, a lack of knowledge and expertise is upheld for self-interested personal, economic or partisan purposes (Croissant 2014). This is the sphere of the conspiracy theories and problem denialism that have been a feature of recent political discourses and electoral politics in many countries. Contemporary examples range from the promotion of entire worlds of alternate facts and realities—found in concerns about "deep states" and various racist and other kinds of conspiracies ("Pizzagate," "I am Q," "Black Helicopters" and the like) (Oliver and Wood 2014; Pasek et al. 2015), to the denial of a gun problem in the USA, the unsubstantiated fiscal and economic dividends predicted by UK Brexiteers, or the befuddled obtuseness of climate change deniers contradicting the weight of the scientific evidence marshalled against them (Björnberg et al. 2017; Del Vicario et al. 2017; Oliver and Wood 2014).

These four epistemological stances and their problematic aspects are set out in Table 1 along with the practices and techniques typically espoused by the policy science community for dealing with their challenges.

This fourth stance toward policy knowledge and evidence is particularly significant in that it undermines the rationality assumption of policy studies and promotes the acceptance and adoption of strategies and programs based on misleading evidence or unsubstantiated uninformed opinion, and is also easily subjected to malicious manipulation (Newman et al. 2012). While it has been present in earlier eras in regimes which, for example, centered policy-making on the prejudiced beliefs of members of the public about ethnic groups or the stereotypical treatment of minorities and others, in general the worst aspects of this epistemology, such as hate-speech and slander, were suppressed or circumscribed by either law or convention or both (Herz and Molnar 2012). As discussed below, however, it is precisely this kind of speech which has recently moved out of the far fringes of political

Table 1 Epistemological stances of policy actors with associated policy problems and solutions

		Extent of knowledge of policy problems and solutions	
		High	Low
Nature of knowledge utilization	For the public good	**Instrumental rationality/reason** Policy problem: boundedness, uncertainty Solutions: more and better analysis, prudence	Ignorance Policy problem: high propensity for avoidable policy failure, blame Solutions; Enhanced Education, Better Knowledge Dissemination & Transmission
	For particular gain	Maliciousness Policy problem: high private value, low or negative public value Solution: transparency and accountability; legal proscription	Willful ignorance Policy problem: high propensity for avoidable policy failure Solution: suppression, legal proscription

debate and tabloid-level publicity and literally been given a space and amplified voice by the opening up social media and non-traditional news outlets from Reddit to Breitbart (Bogers and Wernersen 2014). The decline of traditional media gatekeepers, allowing such views to evade legal and conventional limits on speech have created a new challenge for orthodox policy scientists for which they were largely unprepared (Jones and Lidsky 2016; Wallace 2018).

Dealing with enhanced levels of (willful) ignorance and maliciousness: how social/internet media in the post-factual era steer policy making onto a treacherous path

When it comes to explaining the ebb and flow of factual and evidentiary influences on policy over the past half century and more, there is ample evidence that facts have been a politicized input for quite some time. The complexity, permeability and interaction of public problems are such that in many jurisdictions policy making has been perpetually contested and fights between different characterization of facts or their mis-representation have been commonplace. However, while much of this activity historically has involved the malicious partisan (re)interpretation of facts, as policy programs have also become more complex the level of ignorance concerning how such programs operate and what is their actual intent has also increased. Technologies from the internet to cryptocurrency enable key policy actors to bypass government organizations, regulations and programs in imagining and creating policy alternatives, highlighting the ignorance of not just the public but also many policy-makers with these new technologies.

This has introduced a sizeable gap between expert and public discourses, with experts discredited and publics empowered by the growth of complexity and ignorance. Jasanoff and Simmet, for example, now differentiate between empirical knowledge which is generated by following the scientific method and "public facts" which are the product of a competition between knowledge and values in the public arena. They assert that "… debates about public facts have always also been debates about social meanings, rooted in realities that are subjectively experienced as all-encompassing and complete, even when they are partial and contingent." (Jasanoff and Simmet 2017: 752). Cairney (2016: 42) similarly captures the fluctuating relationship between beliefs, evidence and policy when he writes that: "In the real world, evidence is contested, the policy process contains a large number of influential actors, scientific evidence is one of many sources of information, and policymakers base their decisions on a mixture of emotions, knowledge and shortcuts to gather relevant evidence."

Under these circumstances, the potential for evidence to be undermined by misinformation grows. In a situation of maliciously driven or tinged policy making characterized by willful ignorance, as Daviter (2017: 17) reminds us, gathering and assessing evidence becomes another component of the struggle over policy options, leaving policy analysis increasingly indistinguishable from politics and open to malicious manipulation. In such an extreme post-positivist policymaking space, "policy conflicts rooted in multiple and incompatible problem perceptions cannot be settled by recourse to evidentiary analysis…."

In such a context, as Berling and Bueger (2017: 333) point out, "… while there might be a singular truth in the non-political sphere, in the realm of politics truth remains in the plural, and tends to be connected to opinion." Hence, for example, researchers examining

political conflict in energy policy have noted that knowledge of resource limitations and limits mobilizes resistance against rational analysis, so much so that "… assumptions and values can play a combative, corrosive role in the generation of objective energy analysis, and in how energy decision-makers operate in practice" (Sovacool and Brown 2015: 38).

Critics are right to suggest that policy making has thus been steered onto a treacherous path substituting denial for skepticism, autodidacticism for education and emotion for rationality as the lenses through which actors view policy inputs and evidence (Stevens et al. 2018). In the contemporary era "stories" which link, for example, the slaughter of young children in Sandy Hook with claims about the complicity of the US Government involvement in the 9–11 attacks (Berkowitz and Liu 2016), combine maliciousness and ignorance in a unique way (Johnson and Kaye 2013).

Role of social/internet media as a force multiplier: promoting views of all kinds and undermining expertise

While there is a clearly focused set of concerns about the problematic effects on policy-making posed by the post-factual turn in policy discourse, the causes behind the diminishing influence of "objective" evidence are harder to pinpoint. Increased complexity is certainly an issue, but a heterogeneous array of sources and motivations have been identified in the popular press and in academic studies as disrupting the historical role played by knowledge and evidence in both policy-making and policy analysis (Bail et al. 2018).

The origins of manufactured misunderstanding are both endogenous and exogenous to the political system. Among the exogenous influences that work to separate evidence from reality, much has been made of government-backed initiatives to destabilize politics and generate controversy across borders such has occurred in recent years in several elections in Europe and Asia. Such international misinformation campaigns are increasingly propagated and were particularly pronounced in the run up to major political milestones such as the 2016 US Presidential election and the UK referendum on Brexit (Vasu et al. 2018; Morgan 2018). But they have also been documented as extensions of, or compliments to, military and paramilitary conflict, as was the case with the Russian campaign to annex Crimea and disrupt political functioning in the Ukraine (Mejian and Vokuev 2017: 1028), and these and similar campaigns continue apace in new elections and jurisdictions, from India to Africa.

Similarly, but more endogenously, professionals who rely on scientific knowledge when making life or death decisions, such as physicians and emergency service professionals, for example, have been quick to voice their alarm at the pitfalls of post-factual policy making encountered through the proliferation of conspiracy theories and mis-stated or misleading, if not outright false, claims around topics such as vaccines and gun violence among others. Identifying the major risks to public health posed to the public from confusion caused by the introduction of alternative facts about vaccinations and climate change, for example, has been widely denounced by experts in these fields.

The role of social/internet media in both these processes is very clear. In many cases the endogenous influences cited above, for example, are comingled in Twitter and Facebook campaigns with an exogenous flow of alternative facts that originate from outside a polity and are transmitted and amplified by these media.

Some of the problems with social/internet media propagation of false views and accounts are anthropological. In one of the most extensive analyses to date of how news spread online, Vosoughi et al. (2018) found that false news spread farther and faster across

social media than accurate information because individuals were more likely to propagate misinformation than they were to pass along authentic accounts of social and political events because it is "good gossip." Furthermore, false news was likely to spread more widely over social media. While "… the truth rarely diffused to more than 1000 people [while] the top 1% of false news cascades routinely diffused to between 1000 and 100,000 people (Vosoughi et al. 2018: 1148). Ultimately, as Jasanoff and Simmet (2017: 755) point out, the forum provided by social media sites allows a proliferation of unsubstantiated and uniformed opinion and commentary. "As much as enlightened moderns may deplore the pluralization of language, knowledge or perception on the internet, the digital medium teems with people every bit as intent on communicating their versions of the truth as Oxford Dons or Washington economists."

However, while false knowledge is widely distributed, it is important to note that the capacity to reshape or undermine reality is also highly concentrated and thus subject to malicious manipulation. The information resources deployed through social networks turn out to be even more unequally distributed than the material resources used to analyze and organize knowledge through traditional means of research and dissemination. Syuntyurenko (2015: 207), for example, found that "Social activity and mass relaying of memes are usually initiated from a limited number of centers: 2% of Twitter users generate 60% of all of the content that is distributed online and 5% of all users create 75% of the content." Not surprisingly, Vosoughi et al. 2018: 1147, for example, report that "… data also show clear increases in the total number of false political rumors during the 2012 and 2016 U.S. Presidential elections and a spike in rumors that contained partially true and partially false information during the Russian annexation of Crimea…." when state and partisan actors flooded websites with false information for propaganda, monetary and partisan purposes.

Scholars are thus correct in warning that emergent practices of manufacturing facts and evidence serve not only to diminish policy making capacity, but also erode politics by having policy reinforce undemocratic interest articulation and repress representative modes of problem solving (Esberg and Mummolo 2017). In the new social media/internet reality, "evidence" that does not align with the beliefs of powerful actors and pre-established beliefs and attitudes is rejected, marginalized, and often replaced in public discourse by elaborately crafted falsehoods promoting alternate and evidentiarily unsustainable views and positions (McKee and Stuckley 2017: 669).

How well do existing models of policy-making deal with this new social media/internet mediated reality?

When governments make public policy, they embark on a political journey that begs to be explored. Understanding how and why policy outputs have emerged, and what their resulting political impacts might be, can enable scholars and citizens alike to find meaning in the policy process. Interpreting the interactions of analysis, authority, and organization can help to both explain what has occurred, and also understand what has not happened. This is true both in contexts where traditional forms of evidence prevail and in the era of alternative facts. Among the puzzles to be solved in either case are: Why are decisions taken at a particular time, but avoided at other apparently opportune moments? How do policy decisions interact with one another? Do cumulative acts of policy making yield recognizable patterns, or does policy content just amount to a random or quasi-random collection of prior outputs? And, regardless of the existence of patterns based on accumulated

experience, where should attention focus when analyzing a new, or amended, public policy and the initiative behind it?

There have been many approaches and structures put forward to help interpret the overwhelming amount of information that is often available about a policy's history, its function, and its impacts. Over time, researchers in the policy sciences have created many and varied conceptual constructs, models and framework that seek to aid understanding about how policy making occurs. Levels of analysis have included individual decision-making behavior, group action, institutional structures, or historical patterns and legacies (Howlett et al. 2009). Do the current models found in policy studies cope well with the vulnerabilities created by post-factual influences on policy, especially the growth of willful ignorance? If not, is an evolution of the "core" models and theories needed?

Here we gauge the resilience of three well-established conceptual frameworks when interpreting policy deliberations characterized by a disparate subjectivity among factual claims. We focus on three widely applied conceptualizations that were created to advance understanding about policy making during the twentieth century. These include the policy cycle model, the advocacy coalition framework, and the multiple streams framework and intended to illustrate how such frameworks help, or not, in analyzing and evaluating the politics and policy of truthiness. We consider the effect on the interpretive efficacy of each when the boundary between facts and values is blurred or abandoned in a post-fact world where discourse, identity, and normative beliefs are intermingled with, and often indistinguishable from, factual evidence.

The policy cycle model

In several ways, the policy cycle model offers the most open ended and supple framework among the intellectual constructs developed to interpret what goes on in the policy making process. It was inspired by a direct connection to the practice of making policy and sought to build understanding by examining the functions pursued to solve public problems. By subdividing the study of policy into consideration of what occurred during seven discrete, but related, functions, Lasswell (1956, 1971) pioneered the approach of examining what actors do along the pathway of policy development. Lasswell's model was informed by his own experience working for the American government during the mid-twentieth century, when ambitious measures were initiated, and coordinated, across many sectors and disciplines to win the Second World War, and then prevail during the Cold War.

Refinement and elaboration of Lasswell's stages into an iterative dynamic of policy construction, and at times deconstruction, yielded a five or six stage policy cycle model which sought to capture feedback effects and inter-dependence among the various policy making functions including how policy learning occurs through evaluation and adjustment of existing processes in light of past and present experiences (Brewer 1974; Anderson 1975; Jones 1984).

Within the universe of conceptual tools for examining empirical policy analysis, the policy cycle model stands out as the longest serving heuristic for illuminating how political actors, ideas about problems and potential solutions, and the structural influence of institutions interact to influence policy making and policy-making dynamics (Capano 2012). The policy cycle model endures, offering guidance for those seeking to understand the interplay of policy subsystem participants through their initiative at particular points of action to solve public problems. The consideration of policy actors' function during agenda setting,

formulation, decision-making, implementation, and evaluation remains widely studied today (Howlett et al. 2009).

But can such resilience exhibit over the decades when evidence-based policy analysis was the norm carry forward into a process that is increasingly influenced by falsehoods presented as alternative facts? Future performance of the policy cycle model could depend on its ability to distinguish and examine the distribution and utilization of alternative facts across the various functions of policy deliberation.

The policy cycle model's articulation of distinctive functions in policy making offers the opportunity to identify where and how disinformation and manipulation of evidence could influence analysis, or corrupt authority, during the course of policy deliberations. In general, the cycle model can be seen to adapt all too well to a post-factual universe but without a critical edge. That is, it embodies no defense of truth and allows a ready accommodation of misinformation and an embrace of truthiness.

This is because the cycle model is agnostic on type of knowledge/arguments deployed and the epistemological stances of policy actors. If falsehoods posing as alternative facts are introduced into policy deliberations through a particular focus of communication or coordination, the policy cycle model is well suited to capture this empirical reality.

Misinformation from any source, be it malicious selective interpretations of data or the results of conspiracy theories, for example, will be seen to influence the focus of a policy cycle when the bogus evidence becomes concentrated within the deliberations of one or two policy making stages, such as when fake news is targeted to generate a shift in the policy agenda, or biased evaluative methods are applied to discredit the performance of an existing policy. The resulting contrast between political dynamics in the stages where post-factual influences are directly focused, and the stages where more traditional policy deliberations remain the norm help to highlight the alternative factual manipulations of policy making, but also advance understanding about how elements of a policy subsystem respond and might (or might not) resist the influence of such "facts." The political competition for legitimacy and credibility could occur in multiple stages of policy making, where actors and interests expose and rebut alternative facts that were introduced into deliberations at another stage of the cycle.

Where the policy cycle model might be vulnerable to either overlooking or uncritically normalizing the influence of alternative facts would be when falsehoods are widely accepted and distributed across several, or most of, the stages of the policy cycle. In this case, the more even diffusion of influence by alternative facts would appear more innocuous as an influence on policy deliberation. Importantly, cumulative and systemic effects of such influence would not, in themselves, stand out in the development of policy advice, but the idea that learning and evaluative feedback would normally improve policy-making and its calibrations is lost.

The advocacy coalition framework

A second commonly used framework of the policy process is the Advocacy Coalition Framework (ACF) developed by Sabatier (1993) and his colleagues. At the ACF's heart are sets of policy actors drawn together into "… advocacy coalitions composed of people from various organizations who share a set of normative and causal beliefs and who often act in concert." (Sabatier 1988: 133) Actors' core beliefs are the glue that binds the ACF's unit of analysis together. These beliefs at the center of each coalition include both normative values about the way the world should be, and axiomatic understandings of how policy can

and does function in support of such a worldview. These principles motivate policy actors to cooperate with likeminded counterparts in formulating policy options that advance their preferred outcomes, and to learn from both advocacy and research efforts about how to expand the likelihood of those outcomes over time. That learning function is where the effects of post-factual policy influence could change the ways in which advocacy coalitions pursue their goals, both in competition with other coalitions and in relation to the governmental structures surrounding them.

The ACF distinguishes between three cognitive strata that are nested inside each advocacy coalition. Each coalition can be characterized by: first, its particular configuration of deep core beliefs, which are normative, next its near-core beliefs about appropriate and effective policy making, which connect policy preferences to the deep core beliefs, and finally by its secondary beliefs which form the practical understanding of what works to translate the near-core beliefs about policy into practice.

The ACF presumes that coalition members will maintain their core beliefs, even in the face of evidence that might call these beliefs into question. Near-core policy beliefs are less absolute, and evidence either that programs which have been advocated by a coalition are not delivering desired outcomes to support the normative worldview, or that program outputs advocated by a rival coalition are effective, are likely to prompt policy learning that adapts new means to serve core values. And secondary beliefs about how to frame and communicate policy options with the wider policy community to gain broad based support are quite supple and subject to pragmatic adjustment.

Since the advocacy coalition framework (ACF) is based on beliefs and not facts it also survives well in a truthiness era. Its focus was never on truth per se but on what beliefs exist and who holds them. That is, the ACF melds the influence of beliefs, values, and bounded rationality into an analytical structure for interpreting the ways in which policy subsystems design, debate, and deliver policy options.

These principal conceptual attributes of the ACF, however, suggest that inputs from a post-factual policy world would yield a different impact pattern than would appear in the policy cycle model. The durability of core beliefs that draw coalition members together suggests their resilience in the face of alternative facts and misinformation. Indeed, a stream of disruptive information could work to reinforce solidarity within established coalitions as their members are motivated to redouble their efforts to organize and advocate for preferred policy options in the face of perceived efforts to challenge or intimidate the policy subsystem. Another attribute of resilience emerges through the adaptation of a coalition's secondary beliefs. Coalitions can be quite pragmatic in letting their ends justify the means of advocacy, and if manufactured misinformation is seen to become sufficiently influential in a subsystem, then "fighting fire with fire" could lead a coalition to generate its own alternative facts and pursue its own forms of post-factual discourse. Such escalation of misinformation could contribute to the dynamic of propagating fake news and false information analyzed by Vosoughi et al. (2018) discussed above.

Thus, the ACF offers a useful lens for seeking to understand the impact of truthiness on policy-making; that is, when and how exogenous post-factual misinformation can become endogenized within a policy subsystem.

The multiple streams framework

Kingdon (1984) developed the multiple streams framework (MSF) through inductive analysis of policy agenda setting in the US Congress. He was particularly attentive to the role

of policy entrepreneurs, both inside government and beyond it in the policy subsystem, in creating the political conditions that could justify or compel public officials to focus their limited resources (particularly time) on a particular problem. But rather than assuming that some combination of persuasive skills, reputation, and material resources, would be the major influence on a policy entrepreneur's leverage over agenda setting, Kingdon looked to a somewhat arbitrary, or at least less predictable opportunity window, or confluence of exogenous and endogenous inputs that influenced governance. Problems, policy, and politics fill three streams that configure Kingdon's framework, and successful policy entrepreneurs are those adept at leveraging their interaction to advance the priority of a particular policy problem.

Each stream contains components of policy deliberations that originate independently from one another, but which can combine to transform policymaking at particular junctures. Within the problem stream, one finds the ideas and information that can focus public attention on and characterize a specific problem as being worthy of government's attention. The policy stream contains the expertise of specialists, scientists, and pundits who present remedies and recommendations for addressing one or more public problems. And the political stream carries within it the claims of, and expectations about, governing authority that are generated by public opinion, the party organizations, and interest group efforts to gain or retain power in government. When these streams converge, the resulting accumulation of ideas, interests, and information can either open or close a "policy window" which moves problems onto or off of the formal agenda, and thus influences whether government will attend to them in policymaking.

Since the 1980s, Kingdon's Multiple Streams Framework has been applied very widely and used in interpreting policy deliberations that extend well beyond the agenda setting stage. The limitations of trying to explain the full extent of policy making dynamics through interaction of the MSF's three streams have prompted theory elaboration through a model that expands upon Kingdon's problem, policy and politics streams to account for the distinctive inputs arising from analytical processes and government program delivery that follow agenda setting (Howlett et al. 2016). These channels of influence over policy deliberation are conceived as threads, rather than streams, to allow for the inter-weaving of these conceptual elements. Among the additions to Kingdon, the process thread contains the institutional and organizational structures that are established to analyze policy options and formulate a preferred strategy for government's decision-making. And the program thread comprises policy outputs that create new effects on politics, as well as influencing participants' perception of problems.

Whether the focus remains with Kingdon's "classic" three stream MSF conceptualization, or is expanded to consideration of a greater number, the influence of post-factual policy inputs would initially appear similar. On the one hand, the effect of alternative facts intended to misinform and misdirect policy-makers to doing something new would be constrained in the same fashion as all other policies, by the unpredictable confluence of problems, policy and politics. Thus, for example, a policy initiative based on false evidence may be held up by an institution like the courts which retains a more traditional view of the subject. But on the other hand, adding alternative facts into one or more streams could disrupt their interaction and thus inhibit or promote the critical junctures needed to place issues on the policy agenda.

To borrow a metaphor that inspired one of the MSF's conceptual predecessors, the Garbage Can Model (Cohen et al. 1972), the "organized anarchy" that often characterizes policy deliberation contexts is seen as a challenge to navigate let alone manipulate toward a particular policy option through the strategic introduction of (mis)information.

This is because the uncertain timing of the interactions between problem, policy and politics streams would increase the complexity of introducing independent, but complimentary, information of any kind into each stream in ways that could be counted on to open or close a policy window or enhance or diminish entrepreneurial activity. Introducing alternative facts into only one stream, however, would be more likely to disrupt their interaction and reduce the chances of a coherent connection between the contents of streams, thus frustrating the opening of a policy window. This is evident, for example, when populist mischaracterization of immigrant populations fails to lead to their internment or expulsion, or even to moves to diminish their number.

Thus, the MSF also does well in a truthiness era as the garbage can is simply bigger in a truthiness world than in one in which willful and other types of ignorance, and maliciousness, are reduced.

Conclusion: doing quite well, all things considered

There continues to be a growing disquiet among both scholars and practitioners that recent developments in the "co-creation" of public facts may have breached an established norm of democracy and that the ongoing transgression of evidence and expertise threatens the governmental institutions that undergird both democratic politics and successful policy-making in the public interest (Kim et al. 2018). Undermining the public acceptance of expertise and the willingness to defer to facts and evidence, for example, is a critical element of many populist regimes and policy negating efforts such as climate change denial or immigrant scapegoating (Lewandowsky et al. 2015). While some institutions are less vulnerable to these false claims than others, even the courts which are still focused on evidence have been subject to malicious challenges to knowledge in the post-fact era (Ley 2018).

These challenges are often thought to be devastating for the evidence-based policy movement, for example, and have led to questions about whether or not it can survive this challenge as it did earlier threats such as the faith-based vs reality-based attacks of the Bush Jr. era (Hula et al. 2007; Kissane 2007). At the individual level, the credibility of professional analysts who incorporate influential, but unsubstantiated, alternative facts into policy assessments and recommendations can be compromised. Such analytical malpractice can spread among policy professionals who adopt or reproduce misinformation, whether intentionally or otherwise. And once the incorporation of erroneous evidence into policy deliberations reaches a critical mass, then the integrity of policy making institutions can be diminished. As the practical capability to advance policy based on evidence declines among both the individual and institutional dimensions of the subsystem, there is a concern that the scholarly fallout from anomalous policy making routines and procedures on the utility of existing models and frameworks is likely to follow.

The results of the comparisons of existing mainstream policy theories presented above, however, reveals a different story. As summarized in Table 2, all three models highlight the very problematic aspects of epistemological stances based on willful ignorance and malice for policy-making and the likely impact of enhanced levels of such self-interested and self-absorbed attitudes toward knowledge on policy development processes. The increase in willful ignorance linked to social media and internet-based circulation of previously suppressed ideas is shown by each model to convolute and multiply the number of agenda items with which policy-makers must deal, make it harder for them to control their agendas

Table 2 Summary table of framework accommodation of truthiness

Model	Prescriptive aim	Post-fact results
Policy cycle	Learning and trial and error solutions approximation	Increased noise, loss of agenda control, stumbling from crisis to crisis, improper evaluation, no learning, overloaded agendas
ACF	Learning and persuasion around core and secondary beliefs	Polarization and churn, amplification of misinformation efforts
MSF	Matching of problems and solutions in contingent fashion	Mismatching of tools and problems, failure of steering through opening of policy windows, anarchistic processes and outcomes

and contributes to increased polarization between advocacy coalitions, making it harder to learn from experiences and adapt to environmental changes. And it enhances the anarchic nature of policy-making, making the matching of problems and solutions more problematic and prone to capriciousness than need be the case, thus undermining the ability of the system to resolve issues.

Existing policy frameworks thus continue to remain very useful in a post-fact era and require little to no change in order to generate concrete expectations about future policy-making behavior and outcomes. Overall, the models offer particular, but congruent, predictions of a lack of learning, an embrace of placebos and empty symbols, policy churn, loss of direction, and a record of failed policies in a post-fact world—all of which have been clearly manifested in the context of the two best exemplars of truthiness-inspired policy deliberations to date: the many activities of the Trump administration in the USA, and the British-EU negotiations over Brexit (Del Vicario et al. 2017).

Equally importantly, the policy sciences also continue to suggest several ways in which ignorance and maliciousness can be curbed in the effort to re-orient policy-making toward a more traditional rationality and purpose. As discussed above, ignorance can be re-oriented toward reason through education and the provision and transmission of knowledge and, as government reform efforts throughout the ages have shown, malice can also be eliminated through the illumination of corrupt practices and the enhancement of various mechanisms of accountability and transparency from open contracting to freedom of information legislation.

In the case of willful ignorance, it should also be noted that discouragement of the dissemination of false views has historically also been very significant and has taken many forms, from state censorship and common or civil law slander and libel prohibitions, to voluntary film and television regulation and self-censorship on the part of the media and the motion picture industries, among others. The more insidious effects of social media and various websites in creating and promoting fake news and otherwise enhancing and promoting willful ignorance can also be addressed in this way. While government regulation remains embryonic, some aspects of this problem are being addressed by self-regulation of social media companies like Facebook, Twitter and Instagram in removing millions of false accounts and altering their advertising algorithms to remove the incentive and suppress the capacity of actors to promote false information or promote willful ignorance for monetary, partisan or other reasons.

While there will always be die-hard flat-earthers and alien conspiracy theorists among us, more critical reflection on the part of more open-minded individuals may relegate them once again back to the fringes of political and policy debate. Naming and

shaming can also play an important role here in promoting citizen-driven suppression of wild speculation and a disregard of evidence. Past examples of the academic disrepute created by incorporating bogus evidence into previously legitimate analytical structures can be found in the reaction to twentieth century biological research conducted under the aegis of Soviet Communism, for example. The opprobrium attached to research that adopted Lysenko's now discredited evidence of genetic inheritance from acquired characteristics led to quite a large body of analytical output being delegitimated as pseudo-science (Gordin 2012).

Although there may be a time lag, academic capability and credibility in assessing such deliberative degeneration can also help erode truthiness, if scholars persist in revealing the material effects influenced by misinformation in policymaking and individuals are subsequently more careful and skeptical about the veracity of what they read or view online. Policy scientists and scholars have a responsibility to explain and help society and policymakers understand policymaking in an era of truthiness and how they can deal with the growth, especially, of willful ignorance and obliviousness. This is at least as pressing as in the health sphere, where internet-inspired proliferation of self-help and conspiracy theories around health issues has led practitioners such as Dr. Lisa Rosenbaum (2017: 1609), for example, to urge physicians to speak out about the continued value of evidence-based health policy in a fashion inconceivable only a few years ago, in order to ensure that "… scientists are not alone in their determination to make the truth believable again."

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