Knowledge and Non-Knowledge in Theories of the Policy Process

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Abstract

This paper reviews the state of theory on the role of 'knowledge' (including evidence, facts, and science) and 'non-knowledge' (including values, norms, and emotions) in the policy process. Recent studies that embrace the messiness and ambiguity of real-world policymaking often touch on these notions, but the role of knowledge and non-knowledge is rarely put center stage in policy process research or in ongoing efforts to refine policy process theories, despite their long standing scholarly relevance. These notions, however, are essential for rigorous comparative public policy studies as policymakers navigate the demands of evidence-based policymaking and the challenges of 'post-truth politics.' This work complements the renewed notions of rational and irrational choice (e.g. Cairney and Weible, 2017; Jones, 2017). In recognition of this gap, our review seeks to evaluate some of the major public policy theories of today, including the Advocacy Coalition Framework, the Multiple Streams Framework, the Narrative Policy Framework and Punctuated Equilibrium Theory, in terms of how they conceptualize and characterize the role of 'knowledge' and 'non-knowledge' in the policy process. The study will consider questions such as: (1) How does a given theory conceptualize and label the notion 'knowledge?' Under what circumstances do these theories argue that policy actors successfully employ knowledge, or disregard or subvert it? (2) Does the theory consider the notion of 'non-knowledge,' and, if so, how is this notion conceptualized? (3) What can we learn from policy process theories about the ways in which knowledge and non-knowledge interact to influence the policy process, for example to direct attention toward certain issues on the political agenda and away from others? By clarifying how existing policy process theories engage with these important concepts, we seek to identify crucial gaps in our theoretical understanding of agenda setting, alternative selection, and policy decisions.

Keywords: *knowledge, non-knowledge, policy process theories, evidence, ignorance, post-truth*

1. Introduction

Two, at least at first glance, quite contradictory notions on knowledge and policy-making have gained increasing attention in recent years. On the one hand, there has been a renewed belief in evidence-based or evidence-informed policy-making (see e.g. Nutley et al., 2010), and the behavioural insights movement has aimed at using evidence for designing more effective policies (see e.g. Straßheim and Beck, 2019), both reflected e.g. in the 'What works centres' installed in the United Kingdom. On the other hand, the notion of a 'truth under siege' (Brans and Blum, 2018) has become very strong in debates on 'post-truth', 'post-factual politics' and 'alternative facts', challenging not only what should be understood as evidence, but also the legitimacy of scientific knowledge. Against this backdrop, it becomes crucial not only to empirically investigate the actual role of evidence and other types of knowledge for policy-making, but also to review the theoretical underpinnings for studying those phenomena. Most recently, policy researchers have started to ask how existing models 'cope with politicized evidence and willful ignorance in a "post-fact" world' (Perl et al., 2018; see also Braun and Dodge, 2018; Paul and Haddad, 2019).

This paper reviews the state of theory on the role of 'knowledge' and 'non-knowledge' in the policy process (see Section 2 for definitions). Recent studies that embrace the messiness and ambiguity of real-world policy-making often touch upon these notions, but they are rarely put center stage in policy process research or in on-going efforts to refine policy process theories. In recognition of this gap, our review seeks to evaluate some of the major public policy theories of today, in terms of how they conceptualize and characterize the role of 'knowledge' and 'non-knowledge'. Namely, we consider here the Advocacy Coalition Framework (ACF), the Multiple Streams Framework (MSF), the Narrative Policy Framework (NPF), and Punctuated Equilibrium Theory (PET). The paper considers the following questions:

(1) How does a given theory conceptualize the notion of knowledge?

(2) Under what circumstances does the theory argue that policy actors employ knowledge, or disregard and subvert it?

(3) Does the theory consider the notion of non-knowledge, and, if so, how is this notion conceptualized?

(4) What can we learn from the policy process theories about the ways in which knowledge and non-knowledge interact to influence the policy process, for example to direct attention towards certain issues on the political agenda and away from others?

To answer these questions, it is first essential to further define what we mean by 'knowledge' and 'non-knowledge' and how their relevance for policy-making has been discussed; we draw here e.g. on the literatures on knowledge utilization, on non-knowledge and on values in politics (Section 2). In Section 3, we analyze the roles that forms of knowledge and non-knowledge play in four specific policy-process theories. Section 4 draws some general conclusions.

2. Sources and Uses of Knowledge and Non-Knowledge

In the following, sources and uses of knowledge as investigated by the knowledge-utilization literature will be discussed. We will also introduce the concepts of episteme, techne, and phronesis to discuss sources of knowledge (2.1). While the focus of this literature has been on 'knowledge', 'non-knowledge' is more than a negative definition of the absence of, or non-use of knowledge. Thus, we draw on the sociological understanding to view non-knowledge as a distinct resource that can be used in the policy process (2.2). Finally, we discuss whether and how Aristotle's categories of logos, ethos, and pathos can help to grasp forms of both knowledge and non-knowledge in the policy process (2.3).

2.1 Types of knowledge and knowledge uses

The literature on knowledge utilization is interested in the extent and ways different types of knowledge – scientific knowledge in particular (research utilization) – are used for policy-making. Research on this issue accumulated from the late 1970s (see e.g. Caplan, 1979; Weiss, 1979). Since then, it has undergone a shift from a linear model of knowledge utilization (where knowledge basically is understood as produced by scientists and then 'transferred' to policy-making and applied there) towards a more interactive one (see Blum and Brans, 2017, p. 344). This shift is mirrored in the terms and concepts that have been put forward - while 'knowledge transfer', for instance, is based in a rather direct, and one-way communication, concepts such as 'research use' (Nutley et al., 2007; Boswell, 2009) or 'knowledge exchange' (Fazey et al., 2012) are more open to the context of policy-making and that communication is two-way. The concept of co-production of knowledge (cf. Jasanoff, 2004) goes one step further, extending the idea of an interplay to the production and definition of new knowledge as such.

Arguably, to be able to understand the impact knowledge has on the policy process, we need to include and distinguish different knowledge bases. Flyvbjerg (2001; see also Tenbensel, 2008), drawing on Aristotle's 'intellectual virtues', describes a typology of knowledge based on how that knowledge is created: *episteme* (science-based), *techne* (experience-based), and *phronesis* (feelings-based). *Episteme* is achieved with 'analytical rationality' and 'corresponds to the modern scientific ideal as expressed in natural science' (Flyvberg, 2001, p. 55), while *techne* is created from 'what works in practice' and often identified as tacit knowledge (Tenbensel, 2008, p. 4). Lastly, *phronesis* originates from a practical value-rationality, what is desirable and must be done (Tenbensel, 2008; see also Flyvberg, 2001). Tenbensel (2008, p. 5) describes how the role of these knowledge types depends on the image of political decision-making, e.g. policy rationalists favoring episteme, while techne and phronesis are 'more likely to be considered as impediments

to rational policy', while participationists highlight the phronetic dimension of knowledge, involving normative considerations, and pragmatists highlight techne. The different knowledge types compete in democratic policy-making, and 'what is academically most preferred may not be technically feasible, nor politically desirable' (Brans and Blum, 2018).

Moving beyond types of knowledge to its use in policy processes, one of the most important conceptualizations with three different uses of knowledge: instrumental, conceptual, and symbolic (Knorr, 1977; see also Amara et al., 2004). While *instrumental use* refers to the rather direct use of knowledge, such as evidence, to make and guide policy decisions, *conceptual use* captures a more indirect and mid- to long-term influence, which might lead to 'enlightenment' (Weiss, 1979) about an issue and changed ideas over time. As a third type, *symbolic use* denotes situations in which policy-makers use (scientific) knowledge merely symbolically, or to attain other purposes, such as gaining credibility or political leverage (see Boswell, 2009). It is important to note that the types of utilization are not mutually exclusive. Through the lens of policy-process theories, Weible (2008) describes the three uses as 'instrumental', 'learning', and 'political'. In our review of the four policy process theories, we will consider both the sources of knowledge and their uses in the policy process.

2.2 Sociological Non-Knowledge as Ignorance

Knowledge-utilization research has focused on different forms of knowledge and, from that perspective, non-knowledge would be simply the absence of or non-use of knowledge. Drawing on a sociological research tradition, though, non-knowledge[1] is not simply what we do not know—a lack of something—but can be seen as a form of knowledge in itself—a knowledge of what we

[1] Non-knowledge is a concept used foremost by sociologists and originates from the translation of Simmel's concept *Nichtwissen* (a German word which has been translated in different ways!).

do not know (e.g. Aradau, 2017; Gross 2007; Innerarity, 2012). As such, it is equally important for decision-making as knowledge of what we do know. Many equate non-knowledge to ignorance (Nielsen and Sorensen, 2017; Paul and Haddad, 2019), and define ignorance to include what we know that we (1) do not know, (2) cannot know, and (3) do not like to know (Daase and Kessler 2007).

Some authors have assessed the extent to which policy analysis considers non-knowledge/ignorance and have concluded that policy analysis has not considered it systematically (Paul and Hadded, 2019). One reason for this, they argue, is that policy analysis understands decision-making as knowledge-centric:

> The focus is predominantly on knowledge, and where ignorance is discussed, it is understood as the result of epistemic neglect, a lack of will to gain knowledge, an irreducible blind spot of human subjectivity, or as a repressed form of knowledge. As such, these theories share an (at least implicit) normative assumption, deeply rooted in the logocentric tradition of European philosophy, that knowledge—and knowledge alone—can serve as the norm and the foundation of public policy. (Paul and Haddad, 2019, 309)

Perl and colleagues (2018) come to a similar conclusion, in that policy analysts traditionally have seen ignorance as something to be reduced and, what they term, willful ignorance (manipulation and lies) as a pathology to be prevented.

However, some sociological researchers point out that non-knowledge/ignorance can be deliberately produced and used (not least in policy-making) (Aradau, 2017; McGoey, 2012b; Owens, 2017). McGoey (2012b) calls this strategic ignorance. In this line of thinking, building on Foucault, ignorance is a resource that can be "commodified, privatized, circulated, diffused and 'weaponized'" (Paul and Haddad, 2019), and therefore needs to be seen as a productive category

in the same sense as knowledge. Just as sources and uses of knowledge can be studied, so can those of non-knowledge.

The distinction of knowledge and non-knowledge (in this sociological sense), we believe is important but not sufficient to capture the policy processes of today. In the following section, we draw on Aristotle's distinction of three rhetorical modes of persuasion (logos, ethos, pathos) and discuss whether these can be used to grasp how both knowledge and non-knowledge play a role in public policy.

2.3 Aristotelian Logos, Ethos, and Pathos

If the predominant theories of the policy process indeed are logocentric, as Paul and Haddad (2019) suggested in the preceding quote, this implies their perspective stems from the Western scientific tradition that holds *logos*—referring to logic, reason, or truth—to be a superior basis for understanding the natural and social worlds. Indeed, Lasswell's policy science approach was founded on the idea that policy decisions in the service of democracy should be based on rational evidence—an idea taken even more seriously by the evidence-based policy movement (Head, 2010). It seems that argumentative approaches to policy analysis, including discourse analysis, frame analysis, and interpretive policy analysis, are also logo-centric, since most studies assume that rationality prevails in discursive settings (Gottweis, 2007, p. 238-239). Yet even if public policy theories do privilege logos-based perspectives, the idea that underpins most of them—namely that individuals employ "bounded rationality" for decision making—proves that they also recognize the boundaries and limits of rationality.

Indeed, in the real world that theories aim to explain, appeals to reason are not always capable of resolving policy debates. In some situations, lack of knowledge may create uncertainty regarding the best course of action. In other situations, tradeoffs between irreconcilable goals may

give rise to ambiguity that stymies decision-making. Situations like these are common in the public arena. They often give rise to policy disputes that, at least in democracies, are resolved through public deliberation.

This type of public deliberation is what the ancient Greek philosopher Aristotle identified as "deliberative oratory" in his three-book treatise, *Rhetoric*. Despite the unsavory connotations that phrases like "mere rhetoric" often provoke today, Aristotle's aim was to teach the practical skills that make a speaker (or writer) persuasive in public settings like legislative policy debates, "for which we have no systematic rules" (Aristotle, 1926, p. 23). Because rhetoric aims at producing belief rather than knowledge (Freese's introduction, in Aristotle, 1926 p. xviii), it can draw from a wider array of *pístis*[2] or 'proofs' beyond *logos* or 'evidence' alone. In this respect, persuasion captures the reality of policymaking on complex issues where knowledge may be unavailable, unhelpful, or strategically produced.

To incorporate ideas drawn from Aristotelian rhetoric in policy studies appears promising. Gottweis (2007) argued for bringing rhetoric back in to argumentative policy analysis by looking beyond *logos*, the appeal to reason, which persuades by way of truth or apparent truth, to incorporate attention to Aristotle's other two rhetorical modes of persuasion: *ethos*, which persuades through trust in the speaker—often by appealing to the audience's values,[3] and *pathos*, which persuades by provoking the audience's emotions[4]. In some cases a single rhetorical element

[2] Although it has no direct translation in English, the Greek word Aristotle used, πίστις, or *pístis* (the singular form is *pisteis*) stems from *πείθω* (peithō, "I persuade"). It has been variously understood to mean trust, faith, belief, or confidence of something outside one's own experience, and thus can be seen as a "proof" for an argument. Consequently, evidence is not the only form of persuasive "proof" envisioned by Aristotle.

[3] While this interpretation of *ethos* differs from how Aristotle presented the concept in *Rhetoric*, it is in line with how various scholars have reinterpreted the term. They base this reinterpretation on a holistic reading of Aristotles' work, in particular his *Nichomachean Ethics* and *Politics*.

[4] Interestingly, there is also *kairos* as a fourth element of rhetoric which refers to a sense of situational awareness about the right and opportune moment to take action. The idea is captured in the MSF's notions of an open policy window.

may dominate, although often they are combined. We embrace Gottweis' suggestion to treat ethos and pathos not as irrational elements in policymaking, but as intrinsic to reasoning (2007, p. 248). We employ these modes of persuasion along with Aristotle's distinction of *episteme*, *techne*, and *phronesis* (discussed above), as a foundational perspective for thinking about knowledge and non-knowledge, and how they influence the public policy process.

Few policy studies have explicitly incorporated Aristotle's three modes of rhetorical persuasion, but Stucki and Sager (2018)'s recent article is a notable exception. In this research note, the authors develop a systematic approach for analyzing how the use (and non-use) of evidence influences the persuasiveness of policy arguments. They tie this to the idea of framing—a notion common to many policy theories—that refers to the way political actors persuade others to support their policy ideas by highlighting some aspects of reality while downplaying others (Entman, 1993). Stucki and Sager (2018) propose that policy arguments are more persuasive when the intended audience (1) has trust in the speaker (ethos), (2) is emotionally aroused or motivated (pathos), and (3) has confidence in the truth expressed (logos).

The idea to tie Aristotelian rhetoric to policy framing is intriguing and warrants further development. In particular, clarification is needed on Stucki and Sager (2018)'s application of logos. If a policy argument uses evidence as backing, this is clearly an appeal to rationality, or logos. According to the authors, if policy arguments are not built on evidence, then no matter how logically constructed, it cannot persuade through an appeal to rationality. In other words, evidentiary backing generates proofs that persuade through rational means (logos), while non-evidentiary backing generates proofs that persuade through non-rational means (either ethos or pathos). This application of logos, ethos, and pathos raises several questions beginning with, what other types of backing exist beyond the logos-centric notion of evidence?

Taking inspiration from Stucki and Sager (2018)'s approach and drawing on the notions of knowledge and non-knowledge reviewed above raises additional questions: in what way and with what effects are knowledge and non-knowledge created through practice-based techne and feelings-based phronesis used as backings for policy arguments, in addition to the notion of 'evidence' derived from science-based episteme? How do different types of rhetorical framing influence instrumental, conceptual, and symbolic knowledge use? Answering questions such as these requires extending Stucki and Sager (2018)'s target from studying the use of evidence (as rational, science-derived epistemic knowledge) to the use of knowledge and non-knowledge more broadly defined, and from the context of policy arguments to the broader context of policy process theories.

3. Methods

To explore the use of knowledge and non-knowledge in different theories of the policy process, we distinguish between the different *sources* of knowledge and non-knowledge (episteme, techne, and phronesis). And their *uses* in the policy process, including the mode of persuasion (logos, pathos, ethos) and the aims of its utilization (instrumental, conceptual, and symbolic). We understand evidence as the product through a science-based form of inquiry (episteme), and mainly used for logos-based argumentation. By considering the influence of different sources of knowledge and non-knowledge beyond 'evidence', we will be better able to assess the potential for policy process theories to explain contemporary developments like the evidence-based movement and facts-under-siege. We are by this move not stating that everything goes, and that everything should be accepted as a valid basis for decision-making. We are simply claiming that what is popularly used in place of 'evidence' today does influence policy making, and consequently, policy process theories need to be able to capture this.

Our overall goal is to assess the extent to which policy process theories consider, and how they conceptualize, forms of knowledge and non-knowledge based on their sources and uses in policymaking processes. We aim to do this at three distinct levels; first, on the foundational level of the theories; second, on the conceptual level; and third, on the level of application. Focus is placed both on original writings and on major developments of the theory. To some extent, we also consider how the theories have been applied in the academic community. The choice of theories has to some extent been based on the usual suspects—some of the major policy process theories appearing in Weible and Sabatier (2018)—and to some extent on theories we believed would consider knowledge and non-knowledge. The theories included are the Advocacy Coalition Framework (ACF), the Multiple Streams Framework (MSF), the Narrative Policy Framework (NPF), and the Punctuated Equilibrium Theory (PET).

This enables us to assess the extent to which the three different forms of knowledge and non-knowledge are either used or refused in the policy process (distinguished here by the concepts of episteme, techne, and phronesis). To investigate the theories' grasping of different uses of knowledge, we will, first, draw on the concepts of instrumental, conceptual and symbolic use. This collection of concepts is sufficient for the current phase of our efforts. Second, we will follow the distinction of logos-centric, ethos-centric, and pathos-centric uses, recognizing that all three variations exist together, while one of these tends to dominate in a particular situation.

We are currently in the second phase of our analysis. In the first stage, we identified promising literatures for thinking more systematically about knowledge and non-knowledge, and piloted these distinctions using a sampling of policy process theories. In the current phase, we draw on the distinctions we found most useful to iterate between refining our preliminary notions, applying the existing concepts, and developing analytic concepts (as our emerging 'theory') further

in order to analyze the role of knowledge and non-knowledge in our extended selection of policy process theories (as the object of our analysis; our 'data'). We offer our preliminary findings in the next section.

4. Findings

Here we present to what extent and how the four theories consider knowledge and non-knowledge at foundational, conceptual and applied levels. At this stage of our analysis, different aspects of knowledge and non-knowledge stood out as useful for analyzing each policy process theory. Consequently, each subsection can be viewed as an individualized tour, showing several possibilities for analyzing knowledge and non-knowledge. We take a first step toward linking these individual tours together in the last paragraph of each section by considering the four guiding questions posed above.

4.1 Multiple Streams Framework

Originally developed by Kingdon (1984, 1995), and elaborated by others (e.g. Herweg, Zahariadis, and Zohlnhöfer 2018; Zahariadis 2003, 2014), the Multiple Streams Framework (MSF) explains that agenda setting, and ultimately policy change depends on successful attempts at linking three independently evolving processes, or 'streams,' of problems, policies, and politics. The *problem stream* represents the progression of an issue from a more-or-less tolerable condition, to a problem in need of government intervention. Influences on this progression include problem indicators, focusing events, symbols, policy feedback, and problem load. Issues in the *policy stream* evolve as specialists revise and recombine existing ideas to develop potential policy solutions. The most promising ideas exhibit technically feasibility, value acceptability, and other considerations such as resource availability. Finally, the *politics stream* tracks the evolving context of events and

conditions that make policymakers more or less willing to pay attention to a specific issue. These contextual variations include events affecting the government itself such as election turnover, shifts in the balance of power among competing interest forces, and policymakers' perceptions that the national mood has shifted. The evolving streams are considered "ripe" when an issue is widely recognized as a problem, a feasible policy solution that addresses at least part of that problem is available, and policymakers are willing to devote attention to responding to the issue. Building on Kingdon's figurative language, Herweg (2016) formalized the notion of stream 'ripeness' into testable hypotheses. During the (usually brief) periods of opportunity when all three streams are ripe, policy entrepreneurs attempt to connect, or *couple* the streams in a way that favors their preferred policy solution. This activity dramatically increases the likelihood that an issue will rise onto the policy agenda and from there to the decision agenda for authoritative action, e.g. policy change. Analyzing agenda setting and decision stages as separate processes can be beneficial in some contexts (see Herweg et al. 2015, p. 444-445), while in others the two can essentially be collapsed into a single process of authoritative choice (see Zahariadis, 1992, p. 359; 2003, p. 10).

MSF's ongoing popularity is due in part to its intuitiveness and flexible structure. This has enabled scholars to extend its applicability beyond the US policymaking system to parliamentary democracies, beyond the national level of analysis to subnational and multinational settings, and beyond the agenda setting to other stages of the policy process including policy adoption and implementation (see, e.g., Herweg et al. 2018; Rawat and Morris 2016). However, most publications engage only superficially with its core concepts (Jones et al. 2016; Cairney and Jones 2016). This suggests the need for more systematic theory development (Jones et al. 2016, 19), to which our analysis of the role of knowledge and non-knowledge contributes.

Notions of knowledge and non-knowledge are relevant to MSF's core notion of ambiguity.[5] Ambiguity is often confused with uncertainty: a form of non-knowledge that can be defined as the inability to predict an event due to ignorance or imprecision. With enough information, uncertainty might be successfully eliminated, however more information can actually deepen ambiguity (Zahariadis 2003, 2–3; see also Kuhlmann 2016). This is because ambiguity occurs when people can interpret situations in divergent ways. Furthermore, the key to understanding decision making in the MSF lies in how policy entrepreneurs take advantage of conditions of ambiguity to strategically manipulate ideas (Zahariadis 2003, 18–22), for example through framing activities that direct attention to certain aspects of a problem, policy, or political situation while downplaying others. In this context, "manipulation" is used in a functional sense to include not only deceitful behavior motivated by self-interest, but also more neutral actions such as framing, brokering, or advocating which may be prompted by public service motivations (Zahariadis 2003, 20). Manipulation of information in this light becomes a way to create meaning for policymakers and others who face uncertain preferences. This manipulable nature implies that information represents a broader range of knowledge distinctions than logos-centric concepts like 'facts' or 'evidence' or 'truth.'

Nevertheless, the influence of logic, evidence, rationality—or *logos*—is easily discernible in the MSF's problem and policy streams. For example, indicators such as highway deaths, immunization rates, or program costs that offer rational evidence of a problem are a primary way of attracting policy-makers' attention to conditions in the problem stream (Kingdon 1995, 90–94). Similarly, dramatic focusing events such as natural disasters can logically demonstrate that an

[5] The notion of ambiguity in MSF draws on Cohen, March, and Olsen's (1972) garbage-can model of choice and dominates at the system- or macro-level of MSF, even though bounded rationality plays a limited role at the individual- or micro-level of actors in the system (Kulmann 2016).

intolerable situation exists, often presenting such clear evidence of harm that it displace all other issues on policymaker's agendas (Kingdon 1995, 94–100; see also Birkland 1997, 2016). The *logos*-centric criteria of technical feasibility in the policy stream offers a third example. Technical feasibility refers to the notion that not all ideas survive and evolve into policy proposals; those that do have had various technical aspects worked out in enough detail that the proposed solution, if enacted, is likely to contribute to resolving the intended problem (Kingdon 1995, 131–32). These three examples highlight the importance of objective evidence and rationality in the MSF, however *logos* alone is insufficient for understanding policymaking, as the next paragraph shows.

Various forms of values, ethics, and trust—or *ethos*—are also intrinsic to the MSF. While the logos-centric concepts of indicators and focusing events discussed above are important in raising attention to conditions that warrant government intervention, values come into play in distinguishing between an actual problem that requires policy intervention, and a condition that can be coped with as is or through private actions (Kingdon 1995, 110–11). This distinction is made by comparing existing conditions against some ideal state that is informed by an individuals' and groups' values, and in particular their ideological perspectives on the appropriate role of government in addressing a given issue. Values influence the policy stream as one of several criteria for survival of policy ideas. In addition to the notion of technical feasibility discussed above, ideas must meet a second criteria: value acceptability. This refers to whether or not a proposal fits with the dominant values of policy specialists, including ideology as well as efficiency and equity (Kingdon 1995, 132–37). A third criteria for survival is whether a policy idea appears robust in anticipation of future constraints such as budget acceptability (Kingdon 1995, 132–37). While at first glance budget acceptability considerations may appear logos-centric, even common sense values like fiscal responsibility can be interpreted differently depending on

the values of the pertinent actor. For example, a particularly high-cost program may concern budget specialists, while a politician whose constituency benefits from that program may see a higher price tag as desirable. Alternatively, if we interpret ethos as credibility or trust in the speaker, the policy entrepreneur springs to mind because several of their key resources are ethos-centric. For example, successful policy entrepreneurs have a "claim to a hearing" by virtue of their positional authority, ability to speak on behalf of others, or expertise (Kingdon, 1995, 180). These examples showcase the role of ethos-centric values in the MSF, but their actual influence on the policy process depends in large part on whether these values are weakly or strongly held.

Emotions, feelings, passion—or *pathos*—are fundamental to MSF. Not only are these ideas embedded in many of its concepts, one could say that the overall aim of the framework is to explain the forces that shake policymakers out of complacent acceptance of, or incremental changes to, the status quo governing arrangements. *Pathos*, in fact, pervades the problem stream's indicators and focusing events discussed above. For example, the most concrete and objective indicators can "become prominent items for heated debate" due to their powerful ability to reframe conditions as public problems (Kingdon 1995, 94). Similarly, focusing events can incite policy-relevant pathos that has the ability motivate policymakers' behavior. Some focusing events precipitate a sense of crisis among the general population, which is a sense or feeling—a form of *pathos*—that conditions have degraded to a point that even inaction on the part of policymakers can be interpreted as a decision. In these cases, policymakers are strongly motivated to take actions that allow them to avoid blame or claim credit for addressing a problem (Weaver, 1986; Arnold 1992). Other emotionally-laden focusing events, for example, symbols that catch on in the public sphere or policymakers' personal experiences, act as reinforcement for existing concerns rather than having strong independent influences on the policy process (Kingdon 1995, 97). A third example

can be seen in the policy stream's criteria for survival of policy ideas. In shaping their proposals, specialists in the policy community must anticipate the likelihood that both mass and activist publics would acquiesce to the policy, if enacted (Kingdon 1995, 138). These three examples illustrate some of the ways that pathos can influence the policy process, both in terms emotional arousal and the its absence. In other words, working in conjunction with logos and ethos, pathos can not only facilitate policy change, it can also thwart it.

This analysis reaffirms Aristotle's[Gottweis'? Flyvberg's? Tenbensel's?] observation that *logos*, *ethos*, *pathos* are inseparable. In the MSF, one type of logic or another may dominate a particular analytic concept, however this section highlighted several aspects of MSF that are not *logos*-centric. MSF, it appears, offers a reasonably balanced level of attention to all three varieties of Aristotelian logic.

The concepts reviewed above reveal the MSF's nuanced understanding of concepts that incorporate a variety of perspectives on knowledge and non-knowledge. This makes answering our guiding questions challenging indeed, especially at the stage in our analysis when our own concepts are still only weakly defined. However, we offer a few initial observations. MSF conceptualizes knowledge in different ways for different streams, and for the coupling process itself. The policy stream most closely follows the traditional interpretation of knowledge as scientific evidence (episteme), where policy communities develop and evaluate potential policy solutions based on a rational set of selection criteria that persuades through logic and reason (logos). Policy actors in the political stream, however, often ignore this limited type of knowledge—or at least prioritize other types of knowledge above it, such as conservation of political capital (which relates to their professional reputations and thus to ethos). Policy actors are assumed to be flawed decision makers susceptible to cognitive biases (Zahariadis, 2003).

Policy entrepreneurs may be the most adept at manipulating knowledge to promote their preferred policy solutions. A similar description may also apply to problem brokers, who advocate for their preferred problem definitions (Knaggård, 2015). This is often accomplished through framing issues to create persuasive policy arguments that employ logos, ethos, and pathos.

4.2 Punctuated Equilibrium Theory

PET is a theoretical framework on agenda setting, which postulates that long periods of no or only incremental policy change will be interrupted by punctuations with larger changes. Since Baumgartner and Jones (1993) introduced the framework, it has steadily increased in popularity (see Kuhlmann & van der Heijden 2018; Baumgartner et al 2017). Baumgartner and Jones (1993) used the framework for comparative studies of sectors over long periods, and because of this focused on quantitative measures. Many studies using PET follow this path, with more than half of the applications being quantitative (Kuhlmann & van der Heijden 2018). This tendency has been emphasized by the Policy Agendas Project, which builds on PET and has established joint rules for coding (Dowding et al 2016). For the purpose of this paper, the focus on quantitative measures is important, as this leads to less detail in the studies and more difficulty to capture the sources of knowledge as well as how they are used. However, nothing in the framework itself inhibits a more detailed analysis of this. Jones and Baumgartner (2012) in fact argued that qualitative methods would be very useful in developing the PET, but that few such studies existed. In their later review, Kuhlmann & van der Heijden (2018) show that almost half of the applications of PET either use qualitative or mixed method. This would open ample space for more detailed accounts. However, searches for articles containing “punctuated equilibrium theory” combined with “knowledge” or

"policy image" gave meager results. Even if there is a possibility of conducting more nuanced work on these aspects, it does not seem to have attracted much scholarly attention.[6]

So what aspects in PET are able to capture the sources and use of knowledge and non-knowledge in the policy process? PET is based on bounded rationality and nuances the perspective of incrementalism by showing how agenda-setting and policy-making are incremental during long periods, but sometimes changes dramatically. Baumgartner and Jones (1993) call this a punctuation. During incremental periods new information and events temporarily destabilizes the status quo, but does not lead to a shift in equilibrium. Punctuations followed by a new equilibrium is only possible when policy entrepreneurs manage to introduce a new framing of an issue (a policy image) to a new policy-making venue (Baumgartner & Jones 1993). In this process, information is crucial. In the original work, the role of knowledge and non-knowledge is not well developed. They are clearly import, but how is not explicitly elaborated. However, in their later work, especially in *Politics of Attention* (Jones & Baumgartner 2005), Jones and Baumgartner develop these aspects more fully. In fact, they are crucial building blocks of their theory, together with rhetorical elements.

Baumgartner and Jones do not define information in their book from 1993, but in their later work (Jones & Baumgartner 2005, 7), they equates it to "signals from the environment". They go on to say that a "signal is simply some detectable change in what is happening 'out there'". Information, therefore, is a broad category ranging from scientific knowledge to events of different kinds, including episteme, techne, and phronesis. Further, it can be understood to capture both knowledge and non-knowledge about what is happening. For example, in terms of non-knowledge, an important signal could be that there is a development that is not understood.

[6] This review was done in an ad-hoc fashion and have to be remade with more rigor.

Jones and Baumgartner (2005) develop a theory of information processing, in which they devote attention to how policy-makers prioritize among different signals in an "information rich" environment – in other words, what knowledge policy-makers use. They emphasize the role of emotions in this process:

> The raising of emotions in politics is essential to the prioritization of problems, because emotions governs the allocation of attention. As a consequence, the strategic manipulation of emotions in politics is an essential part of the process of detecting and weighting the importance of signals. (Jones & Baumgartner 2005, 12)

In this account, pathos is clearly at the heart of information processing, and thus at the heart of PET. In their writing, they highlight that a policy image needs to draw on pathos in combination with, what they call, factual information (Baumgartner & Jones 1993). The factual information element of policy images can be built on episteme, but also on techne, for example in the form of recognition of a situation as similar to an earlier one (what Kahnemann (2011) refers to as thinking fast), or on phronesis, for example gut-feelings. However, the framework does not systematically investigate the differences between these three sources of knowledge. It is also less clear what role ethos plays in the framework.

Even if PET (including the later works of Baumgartner and Jones) offers one of the more developed theories of how logos and pathos interact in affecting agenda setting and policy-making, these aspects have not been studied in any detail. The reason, as indicated above, is that Baumgartner and Jones (1993; 2005) used quantitative measures to capture logos and pathos. For example, they (1993) studied pathos in policy images through the tone of the image in binary terms, as either positive or negative. They argue that this loss of detail is necessary for enabling quantitative studies..

In their later work Jones and Baumgartner (2005) engaged with the role of both knowledge and non-knowledge. They argue that information needs to be understood as ambiguous, open to different interpretations, and uncertain, possibly correct or possibly false. Misinterpretations are therefore common. Policy people that interpret signals are often biased, consciously or unconsciously (ibid.). Some, they argue, might misinterpret signals for strategic reasons. This is made possible as information contains several dimensions and that we only focus on some of them (through the framings we choose). Specialists are aware of dimensions not in focus (ibid.). We argue this could be interpreted in two different ways. Either the specialists try to nuance the debate by highlighting these forgotten dimensions, or they choose to keep them in the dark. The last can be understood as strategic non-knowledge. Such attempts to hide certain aspects of a problem, Jones and Baumgartner (2005) argue, are to be expected by officials as their interest should be in the best of their constituents. Non-knowledge is further important as we do not learn consistently from new knowledge (or signals), but only when evidence accumulates. Jones and Baumgartner refers to this as disproportionate information processing. This implies a high degree of non-knowledge throughout periods of stability.

To respond to our four questions posed initially, both knowledge and non-knowledge are important within PET, especially in the more recent developments of the framework. Knowledge is mainly conceptualized as 'information', with sources in episteme, techne and phronesis. To achieve a punctuation and a new equilibrium, policy actors need to combine different forms of knowledge in a policy image, which rhetorically draw on both logos and pathos. At the same time, it is common that knowledge is disregarded for long periods. It is only when enough knowledge accumulates that policy-makers act on it. PET considers non-knowledge in its foundational elements; that signals can always be (and are) interpreted in different ways, opens up for the use

of non-knowledge as an important resource, but also for the importance of unconscious non-knowledge (in the form of biases). Finally, PET on its foundational level incorporates the role of both knowledge and non-knowledge in policy processes. This offers large possibilities for developing how different sources and uses of knowledge and non-knowledge influence the policy process. However, this potential is not realized to any high extent in applications of the framework. A more detailed analysis of these aspects are possible and would contribute with rigor to PET as well as provide insights into bounded rationality for the wider field of policy process theory.

4.3 Advocacy Coalition Framework

The ACF originates from the 1980's with Sabatier & Jenkins-Smith (1993) being a key development, and has since been developed continually (e.g. Sabatier & Jenkins-Smith 1999; Sabatier & Weible 2007; Nohrstedt & Weible 2010; Jenkin-Smith et al. 2014). The ACF tries to explain change of policy within policy subsystems through the struggle between competing advocacy coalitions. As long as the dominant advocacy coalition in a subsystem is not challenged, it is unlikely that policy will undergo major change (Nohrstedt 2011). The reason for this is the assumption that policies in place reflect the beliefs of the dominant advocacy coalition and that these beliefs are not easily changed (Jenkins-Smith et al. 2018). For policy to change, either the dominant coalition needs to be challenged—resulting in either replacement by a minority coalition or in a negotiated agreement—or the beliefs of the dominant coalition need to change. An assumption is that policy core beliefs of coalitions, which could include both normative ideas about values connected to the policy subsystem and empirical ideas about problems and solutions, are more stable than secondary beliefs, which are instrumental in character and pertains to how the core beliefs can be reached (Jenkins-Smith et al. 2018). Thus, it is usually easier for coalitions to

change their beliefs about policy instruments, their scope and level, than about who is responsible for dealing with a problem.

The ACF considers knowledge through its focus on beliefs and learning. The framework does not consider non-knowledge at all. Although not explicitly discussed within the framework, beliefs are evidently connected both to the logical reasoning of logos and to the value-based reasoning of ethos. Logos is manifested through how problems are understood and framed, as well as ideas about how they can be solved. Ethos is manifested through what advocacy coalitions understand and argue for as important in a particular subsystem. ACF also introduce a deeper level of beliefs, called deep core beliefs that are more general than the subsystem and pertains to fundamental values about society and humans (Jenkins-Smith et al 2018). Even though it is not explicit, these deep core beliefs and the policy core beliefs build on a mix of episteme, techne and phronesis. In most cases, scientific knowledge of some kind will be important, in combination with experienced based knowledge of the coalition members and knowledge based on emotions. The particular mix can vary between subsystems and advocacy coalitions. Arguably, the combination of knowledge sources makes deep core and core beliefs difficult to change. In secondary beliefs, knowledge about policy instruments and "what works" are intimately connected to the rhetoric of logos. The sources of this knowledge can be either episteme or techne. The foundational aspects of the framework, focusing on the beliefs of advocacy coalitions, gives ample room for studying different sources and uses of knowledge. However, it is not well developed what effects different mixes of knowledge sources have on the strengths of beliefs or the rhetorical possibilities of coalitions to use these sources to influence policy-making.

According to the ACF, beliefs change through learning. Such policy-oriented learning is defined as "enduring alternations of thought or behavioral intentions that result from experience

and which are concerned with the attainment or revision of the precepts of the belief system of individuals or of collectives" (Sabatier & Jenkins-Smith, 1993, 42). Even if learning is one of the core elements of the ACF, it is the least developed part of the framework (Jenkins-Smith et al 2018), although there are now several studies trying to do this (e.g. Heikkila & Gerlak 2013; Moyson 2017). In the quote above, it seems that techne is crucial for learning. However, it is not clarified to what extent this is the case, or if techne needs to be connected with episteme and phronesis. Could learning come from episteme alone? Given that environmental case studies are usual among ACF applications, it could be reasonable to assume a potential role for episteme.

ACF introduce four types of factors that determine learning. Only one is directly connected to knowledge—'the attributes of the stimuli'. These attributes consist of information that coalitions hold and experiences they made (Jenkins-Smith et al 2018). In the last edition of *Theories of the Policy Process*, Jenkins-Smith and colleagues seem to argue that the more information and experience present, the higher the possibility of learning. Several of their hypotheses state that the scientific knowledge and evidence, especially quantitatively based, increase the chances of learning. However, this aspect have not been devoted the same attention in ACF research as the three other factors (as indicated by the meagre discussion in the chapter).

One other of the factors determining learning can be loosely connected to knowledge—the attitudes of actors. How easy it is to change beliefs are partially based on how strong beliefs actors hold from the start. Extreme beliefs make change more difficult (Jenkins-Smith et al 2018). It is not discussed explicitly, but the strength of the belief can probably be connected to the extent that it is based on techne and phronesis, and not just on episteme. Logical reasoning can successfully challenge episteme, whereas neither techne nor phronesis are as easily challenged by logos-based arguments.

To respond to the four questions we post initially, ACF considers knowledge, foremost through the concepts of beliefs and learning. It does not conceptualize knowledge specifically, beyond scientific knowledge and evidence (or episteme). However, it is evident that other forms of knowledge are also important in the framework, although these are not developed. For learning, experience (or techne) is crucial. It seems to be outside the framework to study how knowledge or non-knowledge is used, the latter is not considered at all. Overall, the foundational elements of beliefs and learning open up to investigations of the role of different sources of knowledge, for the construction of beliefs and the chances of learning. However, so far, this has not lead to studies of this.

4.4 Narrative Policy Framework

Narratives stories have been defined to be – often highly-simplified – stories about how (good or bad) things happen, and as 'the principal means for defining and contesting policy problems' (Stone, 2012, p. 158). Picking up on the seminal works by Stone, the rather recently developed Narrative Policy Framework (NPF) 'serves as a bridge between postpositivists, who assert that public policymaking is contextualized through narratives and social constructions, and positivists, who contend that legitimacy is grounded in falsifiable claims' (Shanahan et al., 2013, p. 453). The NPF takes up some of the narrative elements described by Stone (2012) and develops them into a generalized structure to be analyzed across policy contexts. Those identified elements of narrative stories are: the *setting* of a policy problem (e.g. economic conditions); *characters* (victims, villains, and heroes); *plot* (the arc of action, in which characters are situated within the policy setting and events unfold over time); and *moral*, the latter essentially leading to the promotion of a certain policy solution. Not all narrative elements need to be present, but a policy narrative is believed to

at least always contain a character and a public policy preference (McBeth et al., 2014, p. 229). The NPF assumes a rationality bounded, for instance, by belief systems, and norms.

There are numerous ways we can imagine in which different types of knowledge and non-knowledge are used within the different narrative elements, e.g. describing the setting of a policy problem in a particular way by using scientific evidence or also 'alternative facts'. One type of knowledge that has received particular attention within NPF research is scientific evidence. Shanahan et al. (2013, p. 468) highlight that science 'has the power to legitimize a proposed policy solution and can also contradict competing policy solutions'. However, the idea of post-factual policy-making holds that this legitimizing power of science has significantly weakened (Nichols, 2017). With the NPF, it has been discussed how pointing to scientific uncertainty can also be used within a narrative strategy to discredit evidence, or ultimately a certain policy solution (Gupta et al., 2014; see Schlaufer, 2018).

Schlaufer (2018) recently investigated systematically how evidence is used in narratives, and found that it can be linked to all narrative elements. As she highlights, it is not only important whether or which evidence is used, but *how* it is used in the policy process, and that this perspective can help to show differences in evidence use between coalitions (which have previously not been found to exist). Schlaufer is interested not 'in whether narratives are more persuasive than facts, but rather how facts are best presented in narratives to be most effective on public opinion' (2018, p. 108), and whether the integration of evidence makes a story more convincing or less. This perspective highlights how evidence (episteme) can be put to different uses in policy processes, and e.g. be combined with phronesis in a pathos-based argumentation.

One of the NPF's central claims' is 'that narratives have a greater influence on the opinions of policymakers and citizens than does scientific information' (Schlaufer, 2018, p. 90; see also e.g.

Jones and McBeth, 2010, p. 343). As Schlaufer highlights (2018, p. 90), when 'scientific evidence is used in policy controversies, it is always embedded in narrative stories'. Similarly, as Weible and Schlager (2014, p. 243-44) put it, 'people do not interpret scientific and technical information just as numbers and data but incorporate them into the a priori stories already existing in their minds'. From the NPF perspective, and in Aristotle's words, *episteme* is never alone in the policy process – at least not in the sense of 'just the facts' (Schlaufer, 2018, p. 91). Rather, narrative stories aim to persuade by addressing *logos* alongside *pathos* (affect, emotions). The NPF follows other theories in the assumption that emotions and values are crucial for 'highlighting what is important and setting priorities' (Jones, 2001, p. 73-74) or that, even, 'affect or emotions precede reason' (McBeth et al., 2014, p. 232). *Ethos,* a narrator's authority and credibility, is important too, as when it increases individuals are more likely to be persuaded by a narrative (McBeth et al., 2014, p. 234).

To conclude in terms of our guiding questions, the NPF conceptualizes knowledge as information, and posits it as socially constructed (through narratives). Scientific knowledge (episteme) has been studied particularly often in NPF applications, and often related to problem definition and drawn on to identify the belief systems of coalitions (Schlaufer, 2018, p. 93). Seen through NPF, actors embed knowledge in narrative stories, which are means to persuade, and therefore prone to be studied through the perspective of logos, ethos, and pathos. On the micro level, a confirmation and disconfirmation bias is assumed in knowledge use, i.e. knowledge congruent with prior knowledge or values is treated as stronger, while incongruent knowledge is counter-argued (McBeth et al., 2014, p. 232). Non-knowledge particularly appears in the form of phronesis (values, emotions) and pathos-centric ways of addressing those through narratives. Regarding the NPF elements, non-knowledge can e.g. relate to the villain (e.g. uncertainty

preventing us from making good decisions), or the plot (uncertainty or strategic ignorance as an important element in how the plot unfolds(. In a way, the NPF also shows how scientific evidence (episteme, as one form of knowledge) can be narratively used within the policy process to turn it into a form of non-knowledge (by means of a narrative story). Moreover, the NPF allows to investigate the extent to which scientific evidence is present in narrative elements, or to which indeed there are increasingly 'post-truth narratives', where 'knowledge statements, particularly causal and predictive ones, are rejected or traded for alternative facts, values, and emotions' (Brans and Blum, 2018).

5. Discussion and Conclusion

The four frameworks reviewed here consider the role of knowledge and non-knowledge to different degrees and in different ways. Our review shows that – on both foundational and conceptual level – they include aspects of knowledge, but this has not to the same extent been mirrored in the applications. Non-knowledge is possible to consider in all of the frameworks, but this is insufficiently acknowledged yet on the conceptual level (with some exceptions, especially in PET), and few applications. This lies in line with the criticism directed at policy process theories by Paul and Haddad (2019) and Perl and colleagues (2018) for not considering ignorance.

In terms of sources of knowledge, all theories consider a mix of sources, including episteme, techne and phronesis. Even if this is the case, most place a large importance on the role of episteme—scientifically generated evidence—especially in applications of the frameworks. This is consistent with earlier findings that policy process theories are 'logocentric' (Paul and Haddad 2019, 309). We argue that this focus on episteme as the most important source of knowledge, is what makes it difficult for these theories to capture the development away from 'speaking truth to power' and towards 'science under siege', as it disregards this source of

knowledge. Techne is highlighted especially in ACF through the concept of learning. Phronesis, finally, is emphasized particularly in NPF. The frameworks use different concepts to capture sources of knowledge, including information (ACF) and signals from the environment (PET).

That different sources and uses of knowledge are mixed, becomes even clearer when considering the rhetorical mode of its use. MSF and NPF are the frameworks that most clearly integrate logos, ethos and pathos for the use of knowledge in policy processes. To some extent, MSF divides the different modes of persuasion over the three streams, but as the joining of the streams are crucial for agenda setting, so is the connections between different modes of rhetoric. The narratives in NPF contains all three modes of rhetoric in the effort to persuade. In ACF, focus is on how logos and ethos interact in how different beliefs become predominant and changed. Finally, PET considers foremost how logos and pathos are intertwined, as important rhetorical elements of a policy image.

As apparent in the review, the sources of knowledge and their uses in the policy process are not systematically considered, and often only implicitly in the frameworks. It is quite clear that the frameworks will have difficulty in analyzing issues like the importance of different knowledge sources for how knowledge is used, or for how successful different mixes of sources and rhetorical modes are for achieving attention and changes in policies. As such, further advancements seem necessary for using the theories to understand the role of alternative facts and individualized experience alongside (or above) scientific evidence.

Put simply, in forms of evidence-informed policy-making we would find a prevalence of *logos combined with instrumental use*. This would be the easiest source and use of knowledge for the reviewed frameworks. Post-factual policy-making, on the other hand, should be characterized by a non-use or even refusal of *logos* (facts, evidence, rationality), in favor of addressing *pathos*

(affect, emotions), and *ethos* (values, authority), possibly combined with a symbolic or instrumental process. Policy-making forms in between these two extremes are usually categorized by mixed forms, including logos, pathos and ethos as well as different forms of knowledge use.

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