Reconciling Streams and Cycles:
Avoiding Mixed Metaphors in the Characterization of Policy Processes

Michael Howlett
Political Science
Simon Fraser University
Burnaby BC Canada
Howlett@sfu.ca

Allan McConnell
Government and International Relations
University of Sydney
Sydney, NSW
Australia
allan.mcconnell@sydney.edu.au

Anthony Perl
Urban Studies and Political Science
Simon Fraser University
Burnaby BC Canada
aperl@sfu.ca

Abstract:

The streams metaphor developed by Kingdon from March and Olson's earlier work has been expanded upon by Barzelay, Zahariadis and others in an effort to move beyond limitations the conventional 'cycle' model of public policy-making. However there are challenges arising from the nature of the metaphors that Kingdon developed which cloud the results from directly connecting his policy streams to the workings of the policy cycle. Some of these problems arise from a metaphorical 'stretching, because Kingdon originally created his model to explain agenda-setting, and did not design it to serve as a model that would apply to the entire policy process. This paper re-examines the early literature on policy streams and policy cycles and notes their use and problems. We go on to suggest that a more precise understanding of what exactly constitutes a 'stream' and how streams 'flow together' to produce policy outcomes is required if 'flow' and 'cycle' metaphors are to be usefully integrated. In particular, we consider a number of models which illustrate how major sets of independent variables which flow over time ("streams") can affect moments of policy making ("stages" in the policy 'cycle'). We argue that three-stream models such as Kingdon's may be well suited to understanding one specific stage of policy-making but require augmentation in order to effectively interpret the full set of variables affecting processes and outcomes occurring through multiple stages of policy making. The paper proposes a five stream "confluence"model which highlights the interactions between and among streams as a more effective model retaining the essence of the Kingdon 'stream' metaphor while incorporating elements of the 'cycle' or 'stages' one. The confluence model, it is argued, retains the basic thrust and vocabulary developed by Kingdon while offering a more comprehensive and accurate alternative metaphor for capturing the actual dynamics of public policy-making.

Introduction

Edelman, Stone, Bardach and others have raised the importance of metaphor and stories about policy development in terms of how policy is made, how it is thought to be made and how it is studied and taught (Bardach 2000; Edelman 1988; Stone 1988 and 1989; Schlesinger and Lau 2000; Black 1962). Policy analysis as an academic field of study uses metaphors to simplify complexity and highlight the influential forces of policy dynamics (Pump 2011) but often in an awkward 'mixed' fashion which causes difficulties in moving from 'metaphor,' *i.e.*, analysis by analogy to 'model,' *i.e.*, analysis by testable propositions about the activities and effects of metaphorical elements. (Dowding 1995)

The notion of a policy process composed of a cyclical series of 'stages' is probably the most enduring metaphor in the policy sciences, first put forward to early students of the subject such as Harold Lasswell (1956 and 1971). Although the stages model has had many detractors (*e.g.*, Sabatier 1991; Colebatch 2006), it remains a dominant metaphor in contemporary policy science (deLeon 1999; Burton 2006; Weible 2012). It had its origins in the earliest works on public policy analysis, but has received somewhat varying treatment in the hands of different authors eventually evolving into the now ubiquitous 'cycle' construct.

The stages model employs a metaphor invoking a central dynamic or temporal element, breaking the public policy making process into an iterative series of discrete stages, and at times sub-stages, (Simmons 1974; Althaus et al 2012) which customarily occur in a specific order from expansive agenda-setting and formulation deliberations to decision-making, implementation, and evaluation activities with an increasingly precise focus. The idea of simplifying the complexity of public policy-making by breaking down the policy-making process down into a number of discrete stages was first broached in the early work of Harold Lasswell (1956 and 1971). In Lasswell's view the policy process began with intelligence gathering, that is, the collection, processing, and dissemination of information

for those who participate in the decision process. It then moved to the promotion of particular options by those involved in making the decision. In the third stage, the decision-makers actually prescribed a course of action. In the fourth stage, the prescribed course of action involved a set of sanctions, developed to penalize those who failed to comply with the prescriptions of the decision-makers. The policy was then applied by the courts and the bureaucracy and ran its course until it was terminated or extended. Finally, the results of the policy were appraised or evaluated against the aims and goals of the original decision-makers.

This analogy to assembly line-type decision-making processes is not without criticism, of course, particularly in terms of its overly mechanistic overtones (Sabatier 1991). Difficulties with the image of 'stages' proceeding in a linear and pre-determined fashion from the 'start' of a process ('problem recognition') to its end ('policy termination') have troubled analysts and students of policy-making, along with associated difficulties of metaphorically capturing the role of political power in influencing each stage of decision making, the existence of multiple decision makers and stakeholders, and the non-linear nature of much decision making (e.g. Sabatier 1991; Colebatch 2006). This resulted in some modifications to the metaphor, mainly by adding in the idea of policy-making occuring over a number of 'rounds' as feedback processes from one policy outcome influenced another, so that the stages became part of a larger 'cycle' of policy-making (Simmons et al 1974; Jann and Wegrich 2007).

The 'stages' model was highly influential in the development of a policy science. Lasswell's formulation formed the basis for many other models (Lyden et al 1968; Simmons et al 1974). Typical of these was a simpler model developed by Gary Brewer in the early 1970s. According to Brewer (1974), the policy process was composed of only five or six stages: 1) invention/initiation, 2) estimation, 3) selection, 4) implementation, 5) evaluation, and 6) termination. In Brewer's view, invention or initiation refers to the earliest stage in the sequence when a problem is initially identified. This stage, he argued, is characterized by ill-conceived definition of the problem and suggested

solutions to it. The second stage of estimation concerns calculation of the risks, costs, and benefits associated with each of the various solutions raised in the earlier stage. This involves both technical evaluation and normative choices. The object of this stage is to narrow the range of plausible choices by excluding the unfeasible ones, and to somehow rank the remaining options in terms of desirability. The third stage consists of adopting one, or none, or some combination of the solutions remaining at the end of the estimation stage. The remaining three stages comprise implementing the selected option, evaluating the results of the entire process, and terminating the policy according to the conclusions reached though evaluation (Brewer and DeLeon 1983).

Brewer's version of the policy process improved on Lasswell's pioneering work by, for example, expanding the notion of the policy process beyond the confines of government in discussing the process of problem-recognition and clarified the terminology used to describe the various stages of the process. Moreover, it introduced a new metaphor by presenting the notion of the policy process as an ongoing cycle. That is it recognized that most policies did not experience a finite and linear life cycle – moving from birth to death – but rather seemed to recur, in slightly different guises, as one policy succeeded another with only minor or major modification. Brewer's insights inspired several other versions of the policy cycle to be developed in the 1970s and 1980s, the most well-known of which were set out in popular textbooks by Charles O. Jones (1984) and James Anderson (1975). Each of these contained slightly different interpretations of the names, number, and order of stages in the cycle but retained the same metaphorical construction.

This new cycle construct overcame several problems associated with older stagist metaphors but also subtly shifted the underlying processual analogy from the mechanical to the 'organic' as processes came to be viewed as more complex adaptive environments rather than functional linear ones. This allowed work on policy processes to create synergies with conceptual advances in paleo-biology ("punctuated equilibrium") and systems thinking ("path dependency") and to focus on factors such as

the nature of feedback processes and their positive and negative influences (Pierson 1992, 1993, 2000; Baumgartner and Jones 1993). However, while such concepts helped to better inform the study of aspects of policy-making such as the nature of the actors engaged in each stage of the process and the ideas they hold, the significance of the networks and subsystems in which these actors are organized, and the institutions which they work within (Howlett, Ramesh and Perl 2009), they left open questions about what exactly was driving the policy processes once the functional logic of earlier stagist models had been left behind.

One alternative metaphorical construction of policy-making, however, excelled at conceptualizing precisely this aspect of what was animating policy behaviour. This is the metaphor of policy 'streams' or the conjoining of multiple tributaries of events and actors to generate a flow of policy activity, deployed by Kingdon in his 1984 work on US agenda-setting (1984, 2011).[1] Kingdon's is probably the most enticing alternative understanding to the cycle metaphor for interpreting political dynamics. As is well known, Kingdon generally prefers fluid metaphors when talking about policy-making, such as "the primeval policy soup" and, most significantly for later work, the idea of three 'streams" related to, respectively, policy solutions, policy problems and political considerations.[2] In his work, these streams were threefold in nature:

- The *problem stream* refers to the perceptions of problems as public problems requiring government action and past government efforts to resolve them. In Kingdon's view, problems typically come to the attention of policy-makers either because of sudden focusing events such as crises or through feedback from the operation of existing programs (p. 20). The extent of a problem stream will thus vary temporally, since the longer that a program has been in existence, the more evidence will accumulate that could influence policy feedback. People come to see a condition as a `problem' with reference to their conception of some desired state of affairs which may be derived from an ideal that predates policy implementation or might evolve based on either political or socio-economic influences created by policy feedback.

- The *policy stream* on the other hand consists of experts and analysts examining problems and proposing solutions to them. In this stream, the various policy options are explored and narrowed down. This narrowing of options can be driven by shared values in a policy community that predate a policy problem and might have little to do with it. The international invasion of Iraq following the September 11, 2001 terrorist attacks on the United States vividly illustrates how the policy stream can generate solutions that are not directly focused on the problems that precipitated policy development.

- Finally, the *political stream* `is composed of such factors as swings of national mood, administrative or legislative turnover, and….[an]…interest group pressure campaign' (p. 21). In Kingdon's view, these three streams operate on different paths and pursue courses more or less independent of one another until at specific points in time, their paths intersect.

Kingdon's use of metaphor has been particularly powerful, certainly in descriptive terms and arguably also in explanatory terms, with his terminology and vocabulary copied and adapted by numerous scholars. His ideas about policy streams, for example, touched a chord in the policy sciences and has been used to describe and assess case studies which include the nature of U.S. foreign policy-making (Woods and Peake 1998); the politics of privatization in Britain, France and Germany (Zahariadis 1995a and 1995b); the nature of U.S. domestic anti-drug policy (Sharp 1994); the collaborative behaviour of business and environmental groups in certain anti-pollution initiatives in the U.S. and Europe (Lober 1997); and the overall nature of the reform process in Eastern Europe (Keeler 1993).

Combining the two metaphors – 'streams' and 'cycles' – thus has the potential to create a powerful conceptual apparatus for advancing the understanding of policy-making. But doing so is not a simple task. This is both because simply 'mixing' metaphors is not helpful and also because Kingdon's original focus on the agenda-setting phase means his work left its potential for application to other

stages of the policy process relatively unexplored. And, more to the point, Kingdon's own work contains a somewhat confusing mix of metaphors: from "windows" of opportunity, to "primeval soups" "focusing" events and 'garbage cans', each term rich in its own implications but taken together not particularly cohesive or ready to reveal an overall logic that can be used to illuminate policy dynamics. Also, many of the same critiques of 'stages' models can be made of the 'stream' models, since little room exists in these models for meta-political events and dynamics such as power or political ideology to shape the nature of the events which contribute to policy deliberations and decision-making beyond the vague admonition that sometimes an idea 'whose times has come' appears or that factors such as 'national mood' or sentiment might induce new developments.

In this context, the aim of this paper is to reconsider both of these understandings about how policy processes unfold and to assess the utility of combining their metaphors in such a way as to improve our understanding and intuitive grasp of the policy-making process. The time is ripe to do so, and we argue that a newly enriched policy streams metaphor can directly engage the stages heuristic of the policy cycle, to more effectively reveal what happens, and why, in policy-making.

The paper proceeds as follows. First, it considers the development of the streams and cycle metaphors, discussing in detail both their appeal and limitations. Second, it identifies previous attempts to mix these metaphors, noting the difficulties experienced to date in doing so successfully. Third, it explores the potential for, and limitations of existing stream models, developing these from a range of diverse writings on differing aspects of policy processes. Fourth and finally, it develops what we consider to be the most promising of all – variations of a five stream model which are able to accommodate the complexities and dynamics of modern, multi-layered policy process, while retaining the metaphorical simplicity and analytical purchase of the 'streams' idea.

Reconciling Stream and Cycle Metaphors: Revisiting the Streams Idea

The main elements of the cycle model and its origins have been discussed above. The most important advantage of the staged conception of the policy cycle model as an analytical tool is that it facilitates the understanding of public policy-making by reducing the complexity of the process into a number of stages and sub-stages, each of which can be investigated alone, or in terms of its relationship to any or all the other stages of the cycle. This elegant simplicity helps theory-building by allowing the results of numerous case studies and comparative studies of different stages to be synthesized. Second, the approach can be used at all socio-legal or spatial levels of policy-making, from that of local governments to those operating in the international sphere (Fowler and Siegel 2002; Bogason and Hermann 1998). Also, as discussed above, this model permits examination of the role of all actors and institutions involved in policy creation, not just those governmental agencies formally charged with the task as was the case with earlier versions.

The principal disadvantage of this metaphor is that it can be interpreted as suggesting that policy-makers go about solving public problems in a very systematic and primarily linear fashion (Jenkins-Smith and Sabatier 1993). This, obviously, is not the case in reality, because the identification of problems and the development and implementation of solutions is often a very *ad hoc* and idiosyncratic process, with decision-makers simply reacting to circumstances, and doing so in terms of their interests and pre-set ideological dispositions (Stone 1988; Tribe 1972). Similarly, while the logic of the policy cycle may be fine in the abstract, in practice the stages are often compressed or skipped, or followed in an order unlike that specified by the logic of applied problem-solving. The cycle may not be a single iterative loop, for example, but rather a series of smaller loops in which, to cite just one case, the results of past implementation decisions may have a major impact on future policy formulation, regardless of the specifics of the agenda-setting process in the case concerned. Or, as Kingdon (1984) argued, policy formulation can precede agenda-setting as "solutions seek problems" to

which they could be applied. In short, often there is often no linear progression of a policy as implied by the model.

In its modern guise, the policy streams approach, of course, was popularized by Kingdon's *Agendas, Alternatives and Public Policy* (1984, 2011). Kingdon's is among the more metaphor-rich accounts of policy making, a fact which accounts for some of its popularity but also some of its ambiguity. Kingdon's approach to agenda-setting is based upon his and others' detailed study of agenda processes in the U.S. federal legislative system (Kingdon 1984 and see for example Walker 1977). His model focussed on the role played by specific actors in policy subsystems - *policy entrepreneurs* - both inside and outside of government taking advantage of agenda-setting opportunities - *policy windows* - to move items onto formal government agendas. It suggested that the characteristics of issues as well as the development of policy solutions combined with the characteristics of political institutions and circumstances – often in the form of '*focussing events*' which concentrate attention upon an issue - , led to the opening and closing of windows of opportunity for agenda entrance. Such opportunities can be seized upon or not, as the case may be, by policy entrepreneurs who are able to recognize and act upon them.

As Kingdon acknowledged in his 1984 work, the idea of 'policy streams' originated in earlier work by Cohen, March and Olson (Cohen, March and Olson 1972; March and Olson 1979) into administrative decision-making processes in complex and changing environments – themselves invoking another metaphor, that of 'garbage can' decision-making, or the more or less arbitrary matching of policy problems, solutions and choice opportunities. As Cohen, March and Olson argued in their work:

- Problems are the concern of people inside and outside the organization. They might arise over issues of lifestyle; family; frustrations of work; careers; group relations within the organization; distribution of status, jobs, and money; ideology; or current crises of

mankind as interpreted by the mass media or the next door neighbour. All of these call for attention.

- A <u>solution</u> is somebody's product. A computer is not just a solution to a problem in payroll management, discovered when needed. It is an answer actively looking for a question. The creation of need is not just a function of advertising and promotion in consumer markets; it is a cognitive prerequisite to making choices. People make choices when they see a need to do so, and a new product or service can stimulate the recognition of new needs. Despite the dictum that you cannot find the answer until you have formulated the question well, you often do not know what the question is in organizational problem solving until you have an answer in mind.

- <u>Participants</u> come and go. Since every entrance is an exit somewhere else, the distribution of "entrances" depends on the attributes of the previous choice being left behind as much as it does on the attributes of the new choice being embraced. Substantial variation in participation stems more from other demands on the participants' time than it does from features of the decision under study.

- <u>Choice opportunities</u> are built into most institutions that structure policy making. These are occasions when an organization is enabled, and thus expected, to produce behaviour that can be called a decision. Opportunities arise regularly and any organization has ways of declaring an occasion for choice. Contracts must be signed; people hired, promoted, or fired; money spent; and responsibilities allocated (Cohen March and Olson 1972 p. 2)

Further, they noted that these four sets of dynamic variables were 'relatively independent" (p. 3) that is, "although not completely independent of each other, each of the streams can be viewed as independent and exogenous to the system".

Kingdon's own study, as pointed out above, identified only three sets of more or less 'independent' variables or streams' of problem, policy, and political activities were seen to interact in the creation of policy, but not in an automatic way. As Kingdon argued: `The separate streams of problems, policies, and politics come together at certain critical times. Solutions become joined to problems, and both of them are joined to favourable political forces.' (p. 21). It is at that point that an item enters the official (or institutional) agenda and the public policy process begins.

Importantly, however, Kingdon also suggested that while window openings were sometimes governed by certain fortuitous happenings - including seemingly unrelated external "*focusing events*", such as crises, or accidents; or the presence or absence of "policy entrepreneurs" both within and outside of governments - at other times they were affected by institutionalized events such as periodic elections or budgetary cycles (Birkland 1997 and 1998). As he argued:

> windows are opened either by the appearance of compelling problems or by happenings in the political stream. . . . Policy entrepreneurs, people who are willing to invest their resources in pushing their pet proposals or problems, are responsible not only for prompting important people to pay attention, but also for coupling solutions to problems and for coupling both problems and solutions to politics (p. 21).

Thus the key characteristic of a 'stream' is of a more or less independent trajectory of events, developed by specific actors, which can occasionally 'intersect' to affect each other and initiate new events, but without losing their fundamental independent nature.

It is important to note, however, that linking the three policy streams together is a necessary, but not sufficient, condition for issue entrance to the policy agenda and it is in explaining this movement that additional metaphors are appended to the streams one, complicating and confusing the image of the policy process That is, in the right circumstances, policy windows can be seized upon by key players in the political process in order to gain entrance for particular issues. Policy entrepreneurs thus play a key role in this process by linking or "coupling" policy solutions and policy problems together with political opportunities. The notion of entrepreneurial activity suggests that 'streams' are

largely contextual, exogenous, events and forces which establish the necessary but not sufficient conditions for new policies to emerge. The 'sufficient' conditions are endogenous, suggesting that a fourth 'process' stream exists, something Kingdon did not elaborate upon. It is also the case that the 'independence' of the problem and policy streams is not certain, since ample evidence suggests that deliberations in these areas changes once an issue has attained agenda entrance (see for example Snider 2004; Schwartz and McConnell 2009 on how lesson drawing about the Walkerton water disaster expanded consideration of necessary reforms in a 'water' policy subsystem to what limits would be appropriate for neo-liberal governance). Similarly even the political stream shifts as events and activities endogenous to the policy process – such as legislative and budgetary cycles – begin to affect policy-making, not just the electoral and partisan aspects Kingdon specified (an example par excellence can be found in Goetz and Meyer-Sahling 2008 and their examination of the interconnectedness of EU and national governmental and legislative agendas).

"Streams" models therefore begin to mix, and thus blur, the lines between themselves and stage-cycle metaphors once discussion shifts from largely exogenous to endogenous process-driven dynamics of change. This suggests, contrary to some analyses of Kingdon's work, that the stage of development of a policy is as much a key factor in understanding policy dynamics as the convergence of exogenous streams in launching that process. There is an ongoing issue therefore with respect to whether, or how, 'streams' analysis fits with earlier notions of policy-making based upon a policy cycle or 'stages heuristic' (Jann and Wegrich 2007).

Mixing or Combining Metaphors?

Contemporary policy analysis and policy studies need metaphors that can reveal recurring dynamics and drivers of change. But the two most prominent ones are found wanting when we seek a simple and parsimonious conceptual framework which helps us grasp the *realpolitik* of public policy-making. Also, *mixing* metaphors is another issue in contemporary policy studies where some authors

(for example Barzelay 2006; Zahariadis and Allen 1995) have tried to combine the streams and cycle metaphors in order to generate an improved understanding of the fundamental nature of policy processes but may simply have clouded matters even further by layering one analogy on top of another, leading to confusing or contradictory inferences being drawn by observers and practitioners about the nature of policy dynamics. Although metaphors are not models (Dowding 1995; Pappi and Henning 1998) and consistency and rigour are less serious issues with the former than the latter, unnecessarily complex or clouded metaphors seriously undermine their utility and purchase.

It is clear that 'streams' models require additional concepts in order to explain endogenous influences on policy-making, while 'cycle' models need additional concepts to explain what drives policy-making dynamics through a 'staged' processual cycle. Under such circumstances, prima facie, a synthesis of the two models has intuitive appeal and some researchers indeed have argued for a direct merger of existing 'streams' and 'cycle' models, with the expectation that the application of the stream metaphor to policy process models will help provide the causal structure required to move from metaphor or description to analytical model. As Barzelay (2006) put it in a symposium on the subject in 2006:

> Kingdon's book exemplifies the quest for a process understanding of public policymaking (in addition to providing analytic generalizations about statutory change in substantive policy domains within the institutional setup of the U.S. federal government). (p. 253)

Arguing that "Kingdon's analytical approach examines the policymaking process systemically, while disaggregating the whole into component processes, drawing on the concept of a policy cycle" (p. 253), Barzelay advocated a relatively simple merger of the two models, stating that:

> In the overall process, agenda-setting events influence alternative-specification events through two causal channels. First, problem definition trajectories influence the construction and winnowing of alternatives, through the influence of issue framing and the assignment of issues to distinct venues for alternative specification. Second, the prospect of policy change, inferred from an agenda- setting event's past and anticipated trajectory, spurs the efforts of participants in alternative-specification events, whether they are policy entrepreneurs, protectors of the status quo, or just doing their job. The

trajectories of decision-making events are, in turn, influenced by agenda-setting and alternative-specification events. This aspect of the overall policymaking process arises because the rendering of alternatives, in combination with pressures responsible for an elevated issue status, may open the gates to decisional venues and their corresponding decisional agendas (p. 253-254).

However this is not a direct reading of Kingdon's streams work, but rather an interpretation of it which abandons some of its presuppositions and postulates from 'garbage can' thinking about decision-making (March and Olson 1979, Mucciaroni 1992) in attempting to reconcile it with the 'policy cycle' or the staged process model of policy-making (Jann and Wegrich 2007; deLeon 1999; Howlett et al 2009). The capacity to add a problem to the policy agenda is presumed to lead directly to decision making about particular policy options, an assumption which Kingdon never put forward.

There are further problems with this mix of stream and cycle metaphors. Kingdon has been oversold at times as offering a perspective on policymaking as a whole when in actual fact his work was only intended to be about agenda setting (Zahariadis 1995; Zahariadis and Allen 1995; Zahariadis 2007). Also, Kingdon is at his weakest when dealing with the decisional influence of garbage cans (Mucciaroni 1992). He seems to be arguing that agenda setting can be entwined with policy making because 'an idea whose time has come' may be little more than a problem, dragged out of the garbage can to legitimate a solution that has already been preferred/chosen. While the arbitrary association between problems and solutions is not uncommon, there can be much more formal analysis and development behind the policy options that make it onto the policy agenda. Kingdon's framework touches on 'policy making' but in a very limited way that doesn't come to grips with what accounts for different dynamics during and after the policy window opens (or to continue to mix the metaphors with the course of the streams that flow into policy making processes or cycles).

In what other ways can these two approaches, models or metaphors in the policy sciences be reconciled? Somewhat surprisingly, few efforts have subjected Kingdon's model to detailed conceptual analysis although doing so can help point the way forward to a more coherent and consistent set of metaphors which can lead to more useful conceptual and empirical research. Examining what exactly

is a 'policy stream' for example, and what happens to them after an issue has made its way onto the formal agenda is a useful step in the endeavour. Does the streams idea retain explanatory power once we have moved beyond agenda entrance? To continue Kingdon's hydro-dynamical metaphor, what happens next to these 'streams'? Do some of them suddenly dry up? Or do they continue, with multiple streams joining in a new confluence? Or do the waters pool as 'lakes' that feed new streams? Can all or only some of these possibilities occur under different circumstances, and if only some then what would those circumstances be? There is a strong case for seeing how far we can take Kingdon's metaphor and apply it across the stages of policy making while still avoiding an unwieldy, unaesthetic, and misleading, mix of metaphors characterizing the policy process.

The Need to Better Understand What a Stream Is

Prima facie, many questions remain about the character of 'streams' which must be clarified if the relationship between streams and cycles is to be resolved. A stream comprises a set of factors or variables which exist and interact over time. This temporal dimension is what differentiates Kingdon's work from earlier agenda-setting studies (see for example, Cobb, Ross and Ross 1976 or Cobb and Elder 1972) and is one of the contributions that later analysts and students of policy-making found to be intriguing and useful in his work (John 2003). As Peter John put it:

> Kingdon uses evolutionary ideas to highlight the dynamic and contingent aspects of his account. It is a useful component of his account of policy change, without being an evolutionary model. There are, however, some useful clues as to how one could emerge. Kingdon argues that possibilities and limits of combinations create unique outcomes because "[e]verything cannot interact with everything else" (1995, p. 207).

In other words, there are certain combinations of ideas and proposals that have the potential to evolve, but not others. But how many streams are there and how do they interact?

As we have already seen, while Kingdon uses three streams, Cohen March and Olson had included a fourth – 'choice opportunities' – which Kingdon chose to illustrate with a static metaphor ("policy window") rather than a process metaphor, as does the stages or cycle model. And how do

these streams intersect? Does one have more weight, or 'flow' than another in affecting the course of policy development? In his work, Kingdon suggested this was the case but without specifying why. He argued ultimately that two principle types of window exist: the "problem" and "political" windows:

> Basically a window opens because of change in the political stream (e.g. a change of administration, a shift in the partisan or ideological distribution of seats (...) or a shift in national mood); or it opens because a new problem captures the attention of governmental officials and those close to them. (p. 176)

Is any intersection of the streams more likely than any other? Here Kingdon added the idea that windows could vary in terms of their predictability. While arguing that random events are occasionally significant, he stressed the manner in which institutionalized windows dominate the U.S. agenda-setting process.[3] As he put it "there remains some degree of unpredictability. Yet it would be a grave mistake to conclude that the processes (...) are essentially random. Some degree of pattern is evident (p. 216)." In fact, he argued that many windows open on a more or less predictable, cyclical, pattern:

> Windows sometimes open with great predictability. Regular cycles of various kinds open and close windows on a schedule. That schedule varies in its precision and hence its predictability, but the cyclical nature of many windows is nonetheless evident (p. 193)

> [And]

> Sometimes, windows open quite predictably. Legislation comes up for renewal on schedule, for instance, creating opportunities to change, expand or abolish certain programs. At other times, windows open quite unpredictably, as when an airliner crashes or a fluky election produces unexpected turnover in key decision-makers. Predictable or unpredictable, open windows are small and scarce. Opportunities come, but they also pass. Windows do not stay open long. If a chance is missed, another must be awaited. (p. 213)

While such views may or may not be accurate, they do not follow on directly from the idea or metaphor of a set of independent policy streams. While Kingdon sees problems and politics as being the prime openers of windows, we should recognise that 'policies' can do so as well. This is a longstanding observation dating from Theodore Lowi's (1972) contention that policy creates politics and more recently elaborated in Pierson's work on policy path dependence (Pierson, 2000). An

example of this is the growth of the internet and the web. Available technologies have helped fuel IT reform in public sectors, more than 'problems' or 'politics'. While some of these issues have been addressed in other works (e.g. Howlett 1998 on types and predictability of policy windows), one key question related to the 'streams metaphor' which is addressed here is the 'how many' and 'what type' question; a fundamental one in this approach to understanding policy processes.

How Many Streams Are There?

Kingdon, of course, as we have seen, proposed a three stream or '3P' model: politics, problem and policy. Other authors, however, have suggested alternate tripartite models, such as McConnell's (2010a and 2010b) use of "processes, policies and politics" (see also Marsh and McConnell 2010 and Howlett 2012). This raises the issue familiar with the streams literature since Cohen, March and Olsen's work on choice opportunities: that is, can a policy process be considered a 'stream' like the others?

In his work McConnell (2010a) noted that his idea of a policy process was a large one, encompassing problem definition. That is, a policy process was thought of in more or less traditional 'cycle' terms as encompassing 'stages' in which issues emerge, problems are defined, options examined and decisions taken, implemented and evaluated (Lyden et al 1968). Policy processes involve ongoing inclusion and exclusion on all these fronts, including what Kingdon would refer to as the 'problem' stream. Be this as it may, this suggests that there are not 'three streams' of events involved in policy-making, but rather four: politics, problem, policy and process, with "process" in this sense being closer to Cohen March and Olson's "choice opportunity' stream than simply a specific event like a 'window' opening.

Kingdon, of course, did not have to deal with this final "P" since his work was over once he had explained agenda-entrance. Although a large part of his book dealt with policy formulation, this was in the context of garbage can (March and Olson 1979) thinking about policy making in which the

difference between agenda-setting and formulation generally disappears. But adding this additional variable or stream is problematic for many aspects of Kingdon's original metaphor and its application to the stages of policy-making beyond agenda-setting. This is due, at least in part, to the fact that the manner in which these four streams 'intersect' is not immediately apparent and several alternative conceptions can be mooted.

Cohen, March and Olson, however, had proposed a four stream model by arguing that choice opportunities exist as a more or less independent stream. This conclusion was compatible with their notion of 'garbage can' decision-making since, for them, choice opportunities were much less structured than for Kingdon who focused on the highly institutionalised realm of legislative decision-making in the U.S. Congress with all its esoteric rules of procedure and behaviour. Kingdon rejected making 'choice opportunity' an independent temporal variable like the others, conceiving it instead as being produced at the intersection of the other three 'independent streams'.

Alternative Policy-Making Models That Extend the Streams Metaphor

Can this tension between three and four streams be reconciled? Several options can be developed from literature on the subject which hold some promise: one is a metaphor in which one stream is transformed by 'narrowing' or "channeling" it into another once the policy process begins to unfold. A second metaphor is one in which all the original three streams become tributaries to a larger policy 'confluence' once they merge at the agenda-setting stage. A third is one in which streams 'funnel' through a narrow opening (like a penstock in a hydro dam) which 'concentrates their force and power' while a fourth sees policy-making as a process of 'pooling' in which the various streams merge but at different points in the policy process. The merits and demerits of each of these alternative metaphorical constructions are addressed in turn below.

Option 1 – Three Streams Model: A Narrowing or Channeling of the Problem Stream Into a New Process Stream Once the Policy Process Begins

One way to reconcile cycle and streams models is for the 'problem' stream to narrow down and be channeled into a new process stream, once agenda setting is complete and the policy process is underway. The assumption here is that the nature of the problem is concentrated enough that it no longer has a life or its own but is blended into a new policy processes stream within which these assumptions of the nature of the problem remain. So the three streams would be

- Politics (e.g. Neo-liberal market governance norms)

- Processes (e.g. a problem of road congestion being built into a positivist policy analysis to examine options for this congestion)

- Policies (e.g. toll roads, congestion charges among main possible solutions)

This may appear at first glance to be an excellent way to square the streams-cycle circle, with the advantage of re-focusing attention on Kingdon's three stream model as a theory specific to agenda setting (and some aspects of policy formulation) as was originally intended, rather than as a model/framework for the entire policy process and replacement for the policy cycle model, as it has sometimes been used in recent years (Zahariadis 2007). It also moderates the garbage can assumptions within streams models (policy solutions seeking 'problems' to legitimate a course of action in a largely unpredictable way), bringing them more into line with general new institutional trends in the field where there is a recognition that institutional contexts structure decision-making processes in more or less routine and predictable ways (Araral *et. al.* 2012).

This raises some interesting possibilities, of course, because different types of nesting may be possible here. For example, there could be variations of the issue depending on degree of politicization and the source of the problem with the 'size' of the streams being a key factor to examine. Some processes could be more highly politicized with others being heavily problem-oriented. There is a

difficulty, however, with the assumption that a problem stream simply 'stops, in the sense the basic problem remains unchanged once a policy process gets underway. Although Kingdon does not have to deal with variations in problem definition pre and post agenda entrance because he is focused on a particular point in time, his assumptions cannot be extended beyond the agenda stage, since, as discursive policy theorists note, competing constructs of the problem co-exist throughout a policy process, and these different constructs are often quite significant in influencing the content and contours of 'process sequencing" (Fischer and Forrester 1993; Hajer 2005; Sabatier et al 2007; Howlett 2009).

Leaving aside normative issues (should policy processes actually address the issues that triggered them or is it satisfactory only that some attempted solution emerge?) policy processes often deviate from original problems (leaving aside the fact that the nature of the problem may be highly contestable from the start, *e.g.,* climate change). Issue attention cycle type policy development dynamics (or at least variations on them) are good examples where there is a surge in attention and interest to deal with a problem, but then efforts fade away, often with a token initiative (Downs 1972; Hogwood 1992; Howlett 1997). Many public sector employers for example, attempt initially to address major gender equity issues such as a lack of women senior management positions and women being disadvantaged because they are not part of male social networks, only to produce initiatives (such as gender-affirmative job advertisements) that are much smaller in scope because they dare not tackle deeper structural issues. Such 'placebo' policies have high symbolic content, because the problem becomes one of how to diffuse political/social/civil discontent – often with the actual 'problem' getting lost (McConnell 2010a, 2010b).

This is especially apparent, for example, when crises/disasters/fiascoes/scandals are the catalyst for the convergence of streams (Bovens and 't Hart 1995). So, for example, the 'problem' of the recent London riots has been bitterly fought over, with claims that they were caused by everything from a rogue class of lawless individuals with no community values, to post financial crisis cutbacks which

have squeezed vulnerable communities and given young people even fewer life chances (Baumann 2011). Problem and Process thus cannot be sequenced neatly into discrete stages of policy-making initiative and the former does not effectively disappear, once a process to seek solutions is underway.

Option 2 – The Single Confluence Model: Emergence of a Wide Policy Process Stream after Agenda-Setting

Another way this reconciliation of 3P and 4P streams models might be tackled is to argue that once Kingdon's three streams converge, they transform into a new larger stream or confluence: a policy process stream (in effect a policy making stream) which then begins to work in its own way to an outcome (Teisman 2000). This new 'river' is made up of the 'waters' of the old streams but in a new mix (the varying ways of looking at the problem, the various possible alternatives and the political drivers) as authoritative decision-making processes and the use of governing resources to implement policies unfolds.

The new stream is not fixed in width, length, or direction in which it should flow and operates much as has been noted in texts on the subject (see for example the discussion of policy processes in Howlett et al 2009) whereby governments develop particular styles of dealing with specific stages of activity based on varying capacity and experience in the development of a policy output. Such styles are characteristic channels or routes through which policy-making unfolds as policy, politics and problems interact and evolve in complex ways once the three streams have merged.

Governments create such channels and attempt through them to influence (a) the destination (*e.g.,* very specific outcome or just general course of action?) (b) who should be asked for advice (*e.g.,*trusted policy network participants or the public at large?) (c) what they are being asked advice about (*e.g.,* the final destination or the means of getting there?) (d) the speed at which policy should arrive (*e.g.,* by superfast boat, creating political waves but bouncing over them and getting to a

destination ultra quick? Or by slow boat, barely making any ripples but taking a long time to advance objectives?). Many destinations may eventually be reached and there are many ways of getting there, but the one consistent factor is that government wants to 'succeed' in getting there.[4] The government in this sense is what Jensen (2011) has termed a 'policy dictator' or, to continue, the streams metaphor, either a ship's captain steering a vessel downstream or, better, acts as a hydraulic engineer, determining the channel in which the stream will flow. In the former role, government steers the ship of state through the existing institutional structures. As a hydraulic engineer, government exercises its prerogative to change institutions and rewrite certain rules of the game, setting a new channel for policy making to flow through.

This process might result in multiple 'rounds' (Teisman 2000; Howlett 2007) as the process stream unfolds and works its way downstream to a final destination, much as a ship might pass through a series of storms, or canals, or locks on its way to its destination, but these are different from the initial confluence which occurs at the agenda-setting stage.

In option 2 the 'problem' is not static and is able to change as the streams proceed down their new channel, thus improving on the metaphorical construction found in Option 1. The elimination or apparent elimination of 'politics' as a separate stream, however, remains an issue (Hood 2010; Howlett 2012) Often a 'policy problem' starts as a set of external facts (*e.g.,* an accident or error) but then somewhere in the cycle the problem for policy makers becomes endogenized or politicized and blame-avoidance behaviour ensues. Policy-making can then become much less about problem-solving than a political one of agenda management and control, diffusing the original issue by marginalizing or even eliminating it from discussion (Hood 2010). To varying degrees, public policy is driven not just by the need to solve problems, but the political need to be *seen* to address problems – even at the expense of solving the very problem itself (McConnell 2010a, 2010b). The political imperatives of dramatic focusing events, morals panics and scandals, can place immense pressures on policy makers to demonstrate swift and decisive action e.g. sudden surge in knife crime, dog attacks (Lodge and Hood

2002). Such contexts resonate with literature on policy success and political risk. Policy makers have multiple goals – often traded off against each other in calculated or even instinctive risk assessment of the political repercussions of pursuing policy-oriented goals (Althaus 2008, McConnell 2010). Attempting to actually and definitively solve the policy problem may only be one among many policy making goals**,** and may be further down the pecking order than political imperatives. A streams metaphor which does not maintain the distinctiveness of politics, is in our view, one which is lacking in intuitive appeal.

Option 3 – Five Stream Funnelled Model

Neither option 1 nor option 2 is able to retain a '3P' or three stream framework while meeting the most basic test of empirical mimesis. This suggests that whatever streams exist must number more than three and probably more than four. For example, one possibility is that once Kingdon's three original streams converge, they are joined by two new streams, adding both 'process' and 'programme'. The five streams are thus:

- A Process stream which channels the interaction of actors in a subsystem through the policy process. The configuration of this stream parallels the dimensions of an hourglass as depicted by Howlett, et. al. (2009), in which the range of actors influencing policy making become increasingly narrower from agenda setting through formulation to decision-making, in which only elected officials, or those acting under their delegated authority, approve a course of action. Participation in the process stream then begins to broaden out again through the implementation and evaluation stages.

- A Problem stream which contains bundles of problem definitions relevant to the issue as Kingdon proposed

- A Policy Stream which is filled with potential solutions to problems, again as Kingdon proposed

- A Programme Stream which carries bundles of potential policy instruments and instruments that are in active use for related policies and

- A Politics Stream a repository of political moods, stakeholder power, and institutional authority, again largely as Kingdon proposed.

Whatever the scale of change, in this construction the politics and policy streams do not disappear or merge permanently to form a new river. Rather they continue to exhibit their own dynamics and effects on the process and programme streams as they flow alongside. Thus for example, the process stream can dry up if it does not continue to take on board the waters from the problem, programme and politics streams. Process streams cannot exist without problems to address, potential solutions to consider, and political contexts help legitimize and build support for policy options in the process of policy-making, from agenda-setting through to policy evaluation.

In this model, all 5 Ps are present at all times and narrow down over time to an end point – an authoritative decision to proceed with a particular course of action (or inaction). This is a similar view of policy-making to that first articulated by Hofferbert (1974) in the early 1970s whereby the idea is that there is a kind of funnel or penstock in which decision-making behaviour takes place within an institutional structure, the institutional structure operates within an ideological perspective, that in turn within a power-resource one, and the power resource one within a broad political economic or socio-economic one.

Importantly, this configuration of streams is more compatible with a stage or cycle logic than options 1 or 2 because the funnel or penstock metaphor recognizes that the distances between streams will vary as the policy process unfolds. It is hard, however, to tell exactly how these factors come together to

'determine' a policy process outcome. This is a criticism raised about earlier 'funnel-of-causality' models (Simeon 1976) and suggests that a more nuanced interpretation of the effects of policy stages on policy streams will be required for a fully functional integration of streams and cycles.

Option 4: A Five Stream Confluence Model

As we have seen, simply merging three streams into a process channel is not a helpful metaphorical construction for reconciling different streams models. And neither is substituting one stream for another once a process gets underway. But while retaining a five stream model is superior to both these earlier options, none of options 1-3 consistently connects the dynamic relationship of these streams to each stage in the cycle model of policy-making. Another version which incorporates five streams and which we consider more promising, involves three main and critical 'confluence and distribution' points (although more are possible). It begins with the basic Kingdon assumption of problem, policy and political streams. Critical point 1 occurs when the three streams coalesce in typical 'policy window' fashion. Critical point 2 occurs when the policy formulation process gets under way and these three streams are joined by a process stream (designed to examine options, produce authoritative decisions etc) and a programme stream (designed to calibrate a range and mix of programme instruments). Critical point 3 occurs where an authoritative decision is taken, paving the way for implementation and subsequent evaluation. Each stage brings something new (new actors, new tactics, new resources and so on) and can be analyzed as such (Timmermans 2001; Klijn and Teisman 1991).

Concentrating for the moment on policy formulation process (critical point 2 leading to critical point 3), a crucial issue is that the five streams can co-exist and be affected by each other in multiple ways. Particularly important is the fact that contingent on particular policy drivers such as public opinion, motivations of policy makers, stakeholder power, governance norms and economic pressures, some

streams are nested within others (aqueduct pipes carrying water) or to use more policy-oriented language, the agenda (the volume, speed and direction of flow) is shaped by the larger streams or combinations in which they reside. They typology below is not exhaustive of all policy types. It is intended simply for purposes of illustration, as well as helping capture the realities that policy making can be driven by and sensitive to some factors over others.

Problem sensitive policy making: In its pure form this would be a comprehensively rational search for a solution to a problem, unencumbered by factors such as economic pressures and political ideology which might otherwise compromise this process. Here, the problem stream would be large and wide, with the other streams confined to aqueducts, all geared to address the demands of the problem stream.

'Deal' sensitive policy making: Here, in examples such as coalition government policy making or peace processes, there is a premium placed on reaching agreement among the various participants. In such circumstances, the political stream is the key agenda setter, with all the other streams contained within it as, players attempt to promote (or stall) a deal where the various definitions of the problem, the precise programme to be put in place, are all flowing towards a 'political' solution.

Agenda management sensitive policy making: A key driver here is creating a high 'feelgood' factor, helping keep a difficult issue down or off a crowded and politiciced policy agenda, even at the expense of tackling the problem itself. 'Placebo' policies exemplify, such as in social welfare issues where there are no clear solutions to complex, 'wicked' problems (McConnell 2010a, 2010b). Here again the political stream constitutes the broader environment, within which all the other streams flow.

Solution sensitive policy making: Garbage can policy making typifies, where a preferred policy intervention marshals the entire policy process towards this end. Here, the policy stream would be the

larger context, with all the others streams designed to achieve this end e.g. official definitions of the problem, consultation processes,

Conclusion

Kingdon's work cannot simply be applied holus bolus to stages of policy-making beyond agenda-setting without resulting in a poor mix of metaphors in which either the streams model or the cycle one becomes impoverished. In order to accomplish a reconciliation of these two dominant metaphors of the policy process, a way is needed to square the existing streams model with notions of policy stages. Standing in the way of this merger, among other things, is the idea that only three streams exist. Kingdon was too focused on agenda setting, and those who sought to carry his work forward have been too parsimonious in identifying variables or streams that could interpret the full range of the policy making process. Simply applying his three stream model to inform the content and sequencing of stages of the policy process, as Barzelay or Zahariadis have done, falls short in explaining several significant aspects of policy-making. Moving to a five stream model works much better both in creating a descriptive or conceptual metaphor and in constructing a testable model for empirical research, although it too requires careful elaboration and consistent metaphorical imagery. Considering the endogenous dynamics that are generated by politicians confronted with the need for success in solving a publicly recognized problem, and the administrative capacity and orientation of public servants who have to translate government decisions into policy outputs can extend Kingdon's legacy to develop a research agenda for future work on policy processes, while also helping to clarify the existing literature on the subject. For example the 5P models developed here beg questions about when and where policy actors are influential and what kinds of feedback loops/channels exist between streams. Some working hypotheses could be:

- Each stream has its own policy community but these are subsets of either the problem or politics stream.

- Processes can stall at each of two moments i.e. without basic problem/politics convergence nothing happens, and then if that occurs, without convergence between the process and policy streams, a process is likely get bogged down in implementation through for example goal displacement.

- There exists a general pattern of 'rounds' when either (a) an issue falls off agenda completely – e.g. US healthcare or (b) when an anticipated programme does not emerge. There are many examples of this, for example, with Canadian endangered species legislation (Howlett 2007).

There is also potential to continue and extend the streams metaphor to considerations of policy outcomes. Thus, for example, streams can become 'contaminated' (e.g. when a government minister taking planning decisions is found to be under the influence of a property developer), they can dry up (for example, the pre-poll tax policy process in the UK where the policy stream used to dry up continually because periodic reviews found that there was no viable alternative to the 400 year old property-based tax), they can overflow and need to be contained (such as the politics stream in Guantanamo Bay which spilled its banks and overwhelmed or flooded the other streams). Thinking about policy outcomes in terms of successes and failures, such models help us understand how policy makers can aspire and attain success in each of the five streams (McConnell 2010a, 2010b). Thus for example, we may have:

- A Political success e.g. maintaining and legitimating the leadership's preferred governance values

- A Problem success e.g. eradicating/minimising the problem as defined at its incorporation on the policy agenda

- A Process Success e.g. producing policy in a legitimate manner that broadly maintains all goals and the means of attaining them

- A Policy Success e.g. an authoritative decision or decisions to proceed with new instruments or organizations, and

- A Programme Success an authoritative decision or decisions to proceed with applying instruments and organizations to a new goal.)

Thinking about the 'success' aspirations of policy makers allows is to conceive of key drivers of policy processes. Governments typically attempt to steer streams and they way they are configured and distributed to a greater or lesser degree, depending on the extent to which they are clear on their 'destinations'. However, they may not be necessarily be effective in doing so. Other groups and interests can see to chart a different course, through tactics which ensure that their own preferred configuration of the streams prevails. For example, the installing of drugs czars or supremos as a means of tackling societal drug problems has a high symbolic component because it is intended to produce decisive, high quality and innovative policy making. The 'political' stream in this example is agenda setter for the other streams. Yet those seeking to contest a process leading to this outcome might argue for a different agenda setter such as process (for example a national citizens forum) which sets the direction for our understand of the problem, what policy interventions are appropriate and so on.

The way in which streams and the waters therein are and should be configured and distributed are at empirical, theoretical and normative issues – typical of debates within policy studies and political science more generally. Our intervention in this paper is a means to facilitate this process of debate and discovery, rather than being an end point in itself.

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Endnotes

[1] We will cite the original 1984 edition in this paper, unless there is reason to identify new material contained in the 2011 edition.

[2] Of course, he also uses other less dynamic metaphors, such as "windows of opportunity" and "policy entrepreneurs".

[3] Other authors, of course, argue that agenda-setting is a somewhat less constrained process, See for example Baumgartner and Jones 1993.

[4] Policy settlements at the end of the process stream are all different, with infinite possibilities in terms of a settlement that finds some kind of balance between policy/programme and political priorities/demands/pragmatics. Despite there being many possible policy settlements (destinations), let us assume that they have two main characteristics I.e. a policy settlement is a bundle of policy instruments (programmes) and bundles of politics (electoral/reputational factors, agenda management imperatives, governance trajectories). Sometimes governments succeed in getting to the precise destination (policy settlement) they want and at other times they have to compromise and get near to what they want (e.g. concessions in legislative passage). Sometimes they take high political risks in order to get the bundle of policy instruments they want (e.g. Austerity measures). At other times the settlement is driven largely (although not explicitly) by political considerations, with bundles of policy instruments being aligned accordingly e.g. token/symbolic responses to complex wicked problems, pre-election spending booms.