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Process Sequencing Policy Dynamics: Beyond Homeostasis and Path Dependency

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ABSTRACT

Studies of policy change have advanced to the point where the basic contours and factors driving policy sequences are now reasonably well identified and understood with a great deal of empirical evidence pointing to the prevalence of punctuated equilibrium processes in many policy fields. However the reasons why such processes occur is less well understood. Most attention to date has focused upon homeostatic models in which exogenously-driven shocks undermine institutionally entrenched policy equilibria. This article addresses the difficulties this account faces and the conceptual challenges which must be overcome to provide a solid grounding for the understanding and analysis of long-term policy dynamics. It focuses on the merits and demerits of alternative explanations featuring either random junctures and 'positive-return' sequences – path dependency – or embedded junctures and 'reactive' sequences – process sequencing. Models of policy-making over time using the latter two concepts, it is argued, are more likely to account for the large majority of policy dynamic than the former.

Key words: *path dependence, equilibrium, sequencing, junctures*

Although most policy studies focus on changes which occur in government actions over time, with only a few notable exceptions (Rose 1976; Leman 1977; Hogwood and Peters 1983), the need to carefully examine the often implicit theories of historical sequencing lying behind identified patterns of policy development has only recently been recognized (Mahoney and Rueschemeyer 2003; Saldana 2003; Pierson 2004; Bardach 2006; George and Bennett 2005; Djelic 2008; Pollitt 2008; Kay 2006).

But history and time are difficult subjects for students of policy-making. Temporality pervades all human action to the extent that it is often forgotten how profound is its influence. As T. Alexander Smith discussed in his 1988 book on the subject:

> Temporality (is) an intimate, inevitable and indispensible element of human action. From this perspective individual action is always an intellectual thrust

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outward into a future stormy and unpredictable. Human choice is nothing less than an imagined point of resolution on a distant horizon (Smith 1988 p. 2).

Not only individual decisions and actions, of course, but also collective ones such as public policy-making, exist and are embedded in this temporal universe. But, despite this fact, in most social sciences, including policy science, a general conception of the ahistorical temporality of social processes was often the de facto ontological and epistemological norm, in the sense that for many years most social scientists and policy scholars have searched for a set of deterministic factors (independent variables/causes) which lead to specific policy outcomes (dependent variables/effects). Until recently this orthodoxy was challenged only by those scholars who held to the tenets of a more narrative reading of policy histories; typically viewing them as the unfolding of a largely accidental, but inevitable, series of events (Howlett and Rayner 2006; Pollitt 2008).

Both the largely unconscious ahistoricist presuppositions underlying positivistic methodology and the purely historicist ones underlying post-positivistic narrative approaches and 'thick descriptions' of policy events have been challenged by investigators who have argued that both in society and in policy activity, history, or 'sequence' matters and is, although only in a general sense, predictable. That is, that policy outcomes are neither purely deterministic nor random but rather are 'contingent' upon a variety of factors, not least being the order in which a sequence of events occurs and the nature of the initial 'conjunctures' or 'critical events' which begin a sequence (Pierson 2000b and 2000c; Abbott 1990; Mahoney et al. 2008).

Sociologists and others at the onset of the 1990s turned to this historical question and generated an excellent corpus of conceptual and methodological work on the subject (Somers 1996; Abbott 2001; Aminzade 1992; Calhoun 1998; Griffin 1992) and these insights are now slowly penetrating into the concepts and methods used in the policy sciences.[2] An emphasis on structured sequencing, for example, has been a significant aspect of many recent neo-institutional, and especially 'historical institutionalist', approaches to the study of politics and public policy-making (Steinmo et al. 1992; Kato 1996).

Historical institutionalism, as is well known, is focused on the manner in which human behaviour is structured by existing norms, rules and organizations in order to promote predictable patterns of stability in the face of otherwise highly variable behavioural possibilities (Hall and Taylor 1996). However, while extensive, this literature implicates a wide range of many different possible factors underlying observed stability and change processes such as the 'layering', 'conversion', 'drift' and 're/displacement' processes identified by Thelen and others (Hacker 2004; Streeck and Thelen 2005; Bode 2006; Gildiner

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2007). These include large-scale ideological change (Butler 2009); the vagaries of capitalism (Sewell 2008); political modernization (Arts et al. 2006), institutionalization and bureaucratization (Robinson et al. 2007; Djelic and Quack 2007; Deeg 2005a); discursive change resulting from internal (Schmidt and Radaelli 2004; Schmidt 2008) or external (Bleich 2006) sources; moral panics and temporary bouts of public concern (Fitzgerald 2004); subsystem convergence (Shin 2006; Djelic and Quack 2007) or destruction (Wood 2006; Deeg 2005b); the behavioural characteristics of citizens (Kuran 1989) or interest groups (Jacobs 2008; van Buuren and Gerrits 2008; Hall and Thelen 2009) in the face of crises and oppression; and/or the changing nature of the problems policy-makers face (Sousa and Klyza 2008).

Some of the problem with the identification of such a wide range of factors underlying policy dynamics originates in a mis-specification of the dependent variable ('policy') in which different authors focus on different elements or components of policy (instruments, goals, objectives, programme-level specifications, tool calibrations and the like) and hence are often comparing apples and oranges in their work on factors and dynamics (Cashore and Howlett 2007; Howlett and Cashore 2009; Kuhner 2007). This results in both a proliferation of causal drivers of policy dynamics and difficulties in comparing results from one case to another. Most synthetic studies, however, suggest that the various highlighted policy elements are situated in a 'nested' relationship ranging from the macro (institutions) to the meso (sectoral policy regimes) and the micro (policy actor behaviour) (Hall 1993; Howlett 2009), so that at least some of the apparently contradictory emphases on the causative nature of different factors driving policy sequences can be discounted if the various drivers are ordered properly by level or unit of analysis (Howlett and Cashore 2009).

When the dependent variable is clarified most studies of policy dynamics can be seen to be examining the 'meso-level' of policy regime logics situated between overall structural issues and more micro-level behavioural ones. There are still several outstanding issues to be resolved, such as the dilemma of defining and operationalizing the scope and timing of change – for example, in some models of 'paradigmatic' change clarifying when any given change can be considered fundamental or marginal and the length of time it takes to observe such changes; which generally defers to a multi-year perspective in order to discern actual as opposed to temporary or transitionary policy alterations (Capano and Howlett 2009). However, once the conceptual confusion has been cleared up, it can be seen that many policy scholars now share an understanding of, and agreement upon, a general basic pattern of policy dynamics.

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This basic pattern of policy change is that of non-linear 'punctuated equilibrium' dynamics in which longstanding incremental policy sequences infrequently become 'punctuated' and shift toward a new sequence, trajectory or 'equilibrium' (True, Jones and Baumgartner 1999; Jones, Baumgartner and True 1998; Jones, Sulkin and Larsen 2003). This 'punctuated equilibrium' model is based in part on analogies with work in evolutionary biology which suggested paleo-biological evolutionary processes proceeded in just such a stepped fashion (Gersick 1991; Eldredge and Gould 1972; Gould and Eldredge 1977), but fits observations policy scholars have made for years with respect to the generally incremental or marginal nature of much policy making, while allowing for the periodic possibility of more rarely observed substantial policy alterations (Dahl and Lindblom 1953; Robinson 2007).

As Baumgartner and Jones, who helped originate and popularize the concept in the public policy field, have gone to great lengths to point out, however, 'punctuated equilibrium' is a description of a policy change process, and is not in itself a theory or model of policy dynamics. In order to attain that status it requires a set of hypotheses and assumptions about how various policy variables interact to produce both punctuations and equilibria which conform to the overall 'stepped' or non-linear punctuated-equilibrium sequence pattern. That is, it requires some explanation of the mechanisms which keep equilibria stable and of those forces or processes which undermine that stability.

In its most popular current form, the causal mechanisms attributed to such dynamics are usually suggested to be 'homeostatic' ones; that is, processes which are analagous to human temperature regulation or other similar organic processes through which complex systems interact with their environment while retaining their own fundamental characteristics (von Bertalanffy 1969). The underlying logic is one of system-delimited homeostasis, in which various forms of 'negative feedback' processes such as institutional rule adaptation and actor behaviour allow policy systems to continually (re)adjust to changing circumstances while retaining their same essential shape, until such time as this internal equilibrium is upset by changes in the external environment which exceed system adjustment limits, promoting its phase-transition to a new sustainable equilibrium (Hitchins 2008).

This 'homeostatic' version of policy dynamics provides some of the missing elements required to transform the punctuated-equilibrium description of policy development into a more fully-fledged theoretical model. Four important methodological, epistemological and causal arguments form the core of what can be termed this current 'orthodox

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model of policy dynamics' (Howlett and Cashore 2009; Howlett and Rayner (2006): first, there is widespread acceptance that any analysis of policy development must be historical in nature and cover periods of years or even decades or more. Second, scholars engaging in different methodological and epistemological perspectives have hypothesized that in many cases enduring policy change comes about through the effects of 'external perturbations' that cause widespread disruptions in existing policy practices (Sabatier 1988). Thirdly, it has generally been agreed that political institutions and their embedded policy subsystems act as the primary mechanisms of policy stability and reproduction (Clemens and Cook 1999; Botcheva and Martin 2001; Sabatier and Jenkin-Smith 1993). And fourthly, 'paradigmatic' change, a process in which deep values in policy subsystems are altered, leading to a fundamental realignment of other aspects of policy development, is understood to be correlated very closely with events which transform policy outcomes. Change still occurs as the result of external shocks, however, and in their absence policy dynamics are hypothesized to be marginal and to follow 'incremental' patterns governed by existing subsystem norms, values and ideas (Hall 1993; Genschel 1997; Deeg 2001).

While the existence of a punctuated equilibrium pattern of policy change is supported by a considerable body of case study results (Baumgartner et al. 2009), many elements of the current homeostatic orthodoxy are only thinly supported by empirical evidence (Cashore and Howlett 2007). The idea that change occurs largely through exogenous shocks, for example, flies in the face of much evidence about the effects of policy learning or other endogenous sources of fundamental change including the development and recognition of paradigmatic 'anomolies' (Sabatier 1988; Bennett and Howlett 1992; Zarkin 2008). Similarly many studies of the effects of institutions on policy outcomes have argued not just that institutions promote stability but that they can also promote particular types of policy change (Cashore and Howlett 2007; Clemens and Cook 1999). And recent events in the international economy suggest major changes can occur much faster than over a decade or more. The new orthodoxy, therefore, has very uncertain evidentiary roots and requires more investigation and elaboration before it can be accepted as an accurate model of typical policy dynamics.

As shall be set out below, close examination of several recent studies suggests two rival models of policy change are currently competing in the literature to supplant the orthodox homeostatic or exogenously-driven, institutionally-maintained, punctuated equilibrium model of policy dynamics. These are the models of path dependency and process

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sequencing. Both are compatible with the empirical findings of patterns of punctuated equilibrium policy dynamics but contain very different assumptions about the nature, origins and effects of both policy punctuations and the stability of policy equilibria. The contours of each model have not been well clarified, however, and the purpose of this article is to set out each model and assess its strengths and weaknesses as a potential replacement for the current homeostatic orthodoxy.

Two Competing Models of Punctuated Equilibrium Policy Dynamics: Path Dependency and Process-Sequencing

All policy-making, as Smith (1988) pointed out, occurs within a temporal horizon or 'timescape'. As Goetz and Meyer-Sahling (2009) note, however, this seemingly innocuous statement has two dimensions and implications. In the first, the subject of their own work, political and social institutions have their own built-in temporal dimensions which affect actor behaviour – such as legislative session dates and lengths, annual budget cycles, periodic elections at set intervals, media cycles, term limits on office holders, mandatory retirement ages and a host of other lesser and more significant factors. In this sense, time is an 'independent variable' which affects policy outcomes in the same way as do other such variables, e.g. economic conditions or demographic changes (Meyer-Sahling and Goetz 2009; Jacobs 2008).

While this aspect of temporality, too, is a neglected one in the policy literature, time also exists as a 'dependent variable', that is, as a sequence of events affected by policy contexts and choices. As Orren and Skowronek have argued in the case of political life and events:

> It is precisely in its combination and juxtaposition of patterns that politics may be understood as *shaped* by time. That is to say, politics is historically constructed not only by the human beings who from time to time negotiate changes in one aspect of the polity or another but also by the new configuration of patterns, old and new, that ensues. Put yet another way, the contours of the polity are determined in the first instance by those who seek to change it and by the changes they make and in the second instance by all the arrangements that carried from the past and are newly situated in an altered setting (Orren and Skowronek 2004, p. 12).

While the idea of time as an independent variable is significant in addressing questions such as the potential for the 'de-synchronization' of policy-making from its social, cultural, economic and technological contexts as policy-making becomes more complex in democratic societies with limited time budgets (Meyer-Sahling and Goertz 2009), the focus in the two models – path dependency and process sequencing

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– set out below is on time as a 'dependent variable', that is, in understanding how and why sequences or trajectories of policy events occur and develop as they do.

Each model contains a different explanation for the typical presence of policy stability and of the events and occurrences which lead to policy punctuations. Both models differ from the homeostatic model in that they acknowledge both exogenous and endogenous sources of change and allow for a more flexible role for institutions and actors in promoting or constraining change. The two models differ most importantly from each other, however, in their views of the nature of 'punctuations' – whether these are unpredictable, exogenous events or whether they are embedded in past sequences and endogenous (Deeg 2005b; Hogan 2006; Hogan and Doyle 2007 and 2009) – and, especially, of the 'forces' which keep events following an established sequence – that is whether they are 'positive return' sequences or 'reactive' ones (Mahoney 2000; Bardach 2006; Daugbjerg 2009).

The Contingent Trajectory Model: Path Dependency

One of most often cited modes of historical analysis to challenge the homeostatic orthodoxy in the policy sciences in recent years is the 'path dependency' model (Greener 2002a; 2002b; 2005). The contours of the emergence of the path dependence model in the social sciences are well known, especially the influence of debates in the economics literature on whether or not it is possible for market transactions to result in sub-optimal outcomes as inferior technologies come to be 'locked-in' to specific economic 'trajectories' (Arthur 1988; 1989; David 1985; 1986; Liebowitz and Margolis 1995; 1990).[3] In the social and political realm, the use of the concept of path dependency is less specific than is found in economics and applies to the description of historical processes which observers have found to be highly contingent and inertial in nature (Wilsford 1994). It is commonly associated with neo-institutional – sociological, historical and economic – forms of social and political analysis (Liebermann 2001; Hall and Taylor 1996) although there is no *a priori* reason why this should be the case.

Policy scholars very often endorse a specific perspective on policy dynamics, however, without being aware of the consequences of this adoption for research design, operationalization of variables, choice of methodology (Abbott 1988, 1990) and, unfortunately, research results (Capano and Howlett 2009). This is true of many policy studies claiming to apply path dependency models which are relatively unsystematic and, ultimately, may be using the term only to assert that 'history matters' in the development and implementation of policies

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(Cox 2004; Dobrowolsky and Saint-Martin 2005). However, there are examples of the more systematic application of the general model of path dependency to policy-making which approach model status. Probably the most well known examples of this kind of analysis are the discussions of welfare state development in the United States conducted by Pierson and Hacker, discussed below (Pierson 2000b; Hacker 2002).

In a key work, Mahoney outlined the three principal elements of a path dependent model of historical evolution as variations on the general precepts followed by historians in narrative historical inquiries. That is: (1) only early events in sequence matter; (2) these early events are contingent; and (3) later events are inertial (Mahoney 2000). These elements highlight the crucial aspects of path dependent models of historical development that separate this model from the process sequencing model discussed below: that initial conditions are chance-like, and have a significant influence over the irreversible course of events followed later in the sequence.

Identifying 'turning points' or 'conjunctures' is a critical element in path dependency analyses (Wilsford 1985; Abbott 1997), along with the specification of the exact mechanism which leads trajectories to retain their course once they start along a path (Pierson 2004; Abbott 1997; Greer 2008; Pollitt 2008). At its simplest, path dependency implies that, although the sequence of events is not a strictly necessary one, predictable from the conditions of the starting point according to general laws, there is nonetheless an explicable pattern which relates one point to another, especially in the later part of the sequence. While a random sequence implies that any event has an equal probability of following from any other, in a contingent path dependent sequence the turning point renders the occurrence of the each subsequent point more likely until, finally, 'lock in' occurs. Lock-in in this model is due to the key role played by positive feedback to policy actors in which there are increasing returns available to those who follow an emerging trajectory – such as, in economics, to early adopters of emergent technologies.

Pierson's (2000b) version of path dependency is a good example of one which uses the concept of increasing returns to explain why a particular path is taken and ultimately locked in.[4] Pierson's key hypothesis is that, since political life is one involving (1) collective action; (2) institutions; (3) political authority; and (4) complexity, it will commonly generate increasing returns to key players, leading to path dependency. Hacker makes a similar argument, stating that path dependence processes are common in politics and policy-making since:

> (f)irst, policy creates or encourages the creation of large scale organizations with substantial set-up costs; second, a policy directly or indirectly benefits sizable

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organized groups or constituencies; third, a policy embodies long-lived commitments upon which beneficiaries and those around them premise crucial life and organizational decisions; fourth, the institutions and expectations a policy creates are of necessity densely interwoven with the broader features of the economy and society, creating interlocking networks of complementary institutions; and fifth, features of the environment within which a policy is formulated and implemented make it harder to recognize or respond to policy outcomes that are unanticipated or undesired (Hacker 2002, p. 55).

There are several problems with their formulation, however, which raise questions about the ability of path dependency to serve as a superior general model of historical explanation to the homeostatic orthodoxy in the policy realm, rather than a model which might apply in only a few very specific cases. These have mainly to do with the explanations provided for why policy sequences feature increasing returns. First, there is the discussion of the collective nature of politics. Here, Pierson uses the analysis of public goods and pluralist arguments to make the case that larger groups are more powerful than smaller ones (Olson 1965; Skocpol et al. 2000), but ignores the actual reasons for group formation and membership growth (Nownes and Neeley 1996; Nownes 1995; 2000; Nownes and Cigler 1995) and the impact of discursive pre-eminence rather than the size of groups on policy influence (Burt 1990). Second, Pierson follows Bachrach and Baratz (1970) in arguing that actors may use power to reinforce their other advantages – so that power asymmetries are an important source of increasing returns. However, as Deeg (2005a) has noted, this does not necessarily lead to lock in if powerful actors wish change to occur. Third, Pierson argues that learning also leads to paradigmatic lock-in. However, as Buthe (2002) and others have noted, learning can also involve exogenous lesson-drawing, i.e. bringing new ideas into existing subsystems, undermining existing paradigms and promoting policy change (Dobrowolsky and Saint-Martin 2005, Kay 2005). Finally, Pierson's argument that institutional densities are a key factor leading to increasing returns since 'the cost of exit from institutions is very high' is simply asserted with no proof offered.[5]

Similarly, the emphasis on contingency in creating a trajectory is assumed but not systematically developed in most works purporting to apply path dependency models to policy events (Greener, 2002; Thelen 2003). Studies of policy windows, for example, have found that these only rarely open and close at random but are typically linked to institutionalized events such as periodic elections or legislative timetables (Kingdon 1995; Howlett 1998; Keeler 1993). Other studies of critical junctures also link them closely to the development of new policy ideas and to the existence of 'generational cleavages' which have

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discredited existing ideas and institutional arrangements (Hogan 2006; Hogan and Doyle 2007). Hogan (2006), for example, has argued that, as a result, several types of 'junctures' exist with only one subset – those accompanied by such cleavages – likely to result in significant policy change. As Hogan further argues, however, even that linkage does not necessarily imply subsequent developments will proceed in a (positive returns) path-dependent way since 'a critical juncture could witness the subsequent creation of a durable set of institutions whose persistence is not due to path dependence but to other sources of stability' (Hogan 2006, p. 664).

Both problems imply that the path dependency model, while alluring in its apparent analogous relationship to well-known work in economics may, in fact, like the homeostatic model, be only relevant in very limited and specific policy circumstances (Pollitt 2008). As Deeg (2005a) suggests, there is increasing evidence that the positive feedback and reinforcing sequences are not automatic but require mobilization of political actors and the exercize of power and influence in order to support arrangements that will lead, over time, to other actors acting 'automatically' to reinforce the status quo or the current trajectory.[6] There is also an increasing weight of evidence from case studies of trajectories changing while being embedded in previous policy legacies so that their new form is not random or contingent, but thoroughly influenced by and anchored in the old.[7]

Embedded Sequence Models: Process Sequencing

A second alternative model of historical change in social processes and actions to the homeostatic orthodoxy is compatible with these latter observations in its conception of policy-making as involving 'the connections between events in different time periods as reiterated problem solving' (Haydu 1998). In this 'process sequencing' model, event chains are demarcated on the basis of 'contrasting solutions for recurring problems' (p. 354). That is, 'continuities across temporal cases can be traced in part to enduring problems, while more or less contingent solutions to those problems are seen as reflecting and regenerating the historical individuality of each period' (p. 354).

At first blush, this second model looks somewhat like path dependency in its emphasis on turning points and trajectories. The process sequencing model, unlike the path dependency model, however, does not rely upon random or purely contingent initial conditions to set trajectories in motion and is not concerned with irreversible sequences or 'lock-in'. Instead it focuses on conjunctures or punctuations which are 'contingent' not in the sense that they are random,

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accidental or chancelike, but rather in the sense that they are conditional on circumstances arising from either within or without the existing equilibrium which can upset the status quo (Schedler 2007; Jones, Sulkin and Larsen 2003; Hogan 2006). Proponents of this second model argue that it 'provides a plausible way to represent and account for historical trajectories; it builds social actors and multiple causal timelines into explanatory accounts; and it offers a richer sense of how earlier outcomes shape later ones' (Haydu p. 341) than do the ideas of lock-in or random starting points associated with path dependency models.

In the policy realm, process sequencing describes a situation whereby normal policy-making involves fairly common, routine, non-innovative changes at the margin of existing policies utilizing existing policy processes, institutions, and regimes. Atypical, paradigmatic or non-incremental change then involves new policies which represent a sharp break from how policies were developed, conceived, and implemented in the past but are still rooted in the same general concerns and problems (Berry 1990; Cox, 1992; Kay 2007). Frequently cited examples of such changes include shifts in fiscal and monetary policy in most western countries from a balanced-budget orthodoxy to Keynesian demand-management principles and practices in the 1930s and 1940s and a subsequent shift away from Keynesianism to forms of neoliberalism in the 1970s and 1980s (Hall 1989 and 1993), each motivated by the same desire to reduce unemployment and inflation and spur economic growth.

A good example of the use of this type of model in the policy sciences has been put forward by Michiel de Vries in his work on 'policy generations' in the Netherlands (de Vries 1999; 2000; 2005a). De Vries argues, uncontroversially, that government cannot solve all societal problems simultaneously and therefore has to prioritise its attention and responses. His theory of policy generations states that in successive periods, separate policy generations can be distinguished, characterised by the dominance of certain values and the neglect of others in the approach taken by governments to problem-definition and problem-solving.

De Vries (2000) argues, like more recent work by Baumgartner and Jones,[8] that this pattern of policy shifts is caused by shifts in government attention in which, in one period, it focuses on one aspect of a problem, neglecting the others, after which in the subsequent period the government devotes much attention to the aspect most neglected in the preceding period (p. 64). However unlike Baumgartner and Jones (2002b), who left the actual subject of attention shifts open, de Vries has argued that four key values rotate cyclically in government

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priorities, discourse and action: the need for consensus; the desire for long-term planning; the renewal of cultural patterns regarding the integration and coordination of society as a whole; and concern for prosperity. In their 'first generation', governments emphasize short-term goal attainment to the neglect of longer-term issues and thus soon find themselves in a second phase of long-term planning to correct errors made in ad hoc and short-term processes and decisions. Such planning is highly technocratic and elitist, neglecting social interests and democratic processes, leading to a third phase of attention to social integration through enhanced deliberation and collaborative efforts. The stress on democracy, however, leads to the neglect or loss of efficiency, returning a government to a focus on short-term goal attainment and a reiteration of the cycle (de Vries 2000).[9] Democratic processes such as competitive party systems and periodic elections exacerbate these cycles by allowing opposition parties to 'corner the discourse' on neglected values, meaning elections tend to usher in a new generation, speeding up what might otherwise be a much longer term process requiring, for example, retirement and replacement of existing party and government leaders (de Vries 2005b).[10]

De Vries' work is thus a good example of a process sequencing model which focuses on the temporal dimension of policy-making but lacks path dependency's emphasis on randomness in the starting points of trajectories and is also not wedded to the idea of irreversible trajectories. That is, process sequencing models like de Vries' stress not how outcomes at historical switch points are unpredictable, almost random, accidents, but how they are firmly based or rooted in previous events and thinking as related structural processes of both negative and positive feedback affect actor behaviour (Baumgartner and Jones 2002a; 2002b; Hall 1993; Sydow et al. 2005; Ebbinghaus 2005). Changes in trajectories in this model are not random or chaotic, and incommensurable, but rather are firmly rooted in, and outgrowths of, earlier trajectories (Kay 2007).

Hence, although process sequencing shares some of the characteristics and vocabulary of the path dependency model, it is not the same. The idea of change occurring as a result of an embedded 'crisis' in the process sequencing model, is not the same as that focusing on random critical junctures found in a typical path dependency explanation (Kuran 1989 and 1991; Hall 1993; McConnell 2008).

Moreover, this model does not require a uni-directional trajectory following an initial conjuncture, but allows for reversals in trajectories as the development of ideas and discourses proceeds apace within new or established institutional orders. A key difference here is that the mechanism for sequencing in trajectories is not just positive policy

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feedback and self-reinforcement, but rather 'negative' feedback (Bardach 2006) or what Mahoney has called 'reactive sequences'.

> Whereas self-reinforcing sequences are characterized by processes of reproduction that *reinforce* early events, reactive sequences are marked by backlash processes that *transform* and perhaps *reverse* early events. In a reactive sequence, early events trigger subsequent development not by reproducing a given pattern, but by setting in motion a chain of tightly linked reactions and counterreactions (Mahoney 2000 p. 526).

This model of mobilization and counter-mobilization has its roots in earlier work in a pluralist vein, as Baumgartner and Jones (1993) noted,[11] and has become increasingly popular as an alternative to both homeostatic and path dependency models, providing a better explanation of phenomena such as the creation and development of national and sectoral political institutions as well as political ideas, discourses and paradigms (Lieberman 2002; Lindner 2003; Lindner and Rittberger 2003) than do models based on either random starting points or exogenous shocks. It also appears to be more consistent with the actual empirical record of changes found in many countries and sectors than is the path dependency model (Baumgartner et al. 2009; Hogan 2006; Dobrowolsky and Saint-Martin 2005; Morgan and Kubo 2005; Rico and Costa-Font 2005; Daugbjerg 2009). Overall, as Daugbjerg (2009) noted in his study of the European reform of the Common Agricultural Policy (CAP):

> The reactive sequence approach has potential to provide new insights for explanations of how and why policies develop in particular ways. In comparison with the approach emphasizing self-reinforcing sequencing as the foundation of path dependency, reactive sequencing leaves more room for policy evolution within the path since policy evolution is seen as a chain of events linked through reactions and counter-reactions. This means that unlike self-reinforcing sequences, which are characterized by processes of reproduction that reinforce early events, reactive sequences do not necessarily induce further movements in the same direction (p. 407).

Conclusion: Taking Temporality Seriously

At the present time the policy literature has taken a definite historical turn, with the stochastic models favored by many analysts searching for causal determinants in the early years of the policy sciences largely falling by the wayside as contemporary analysts grapple with the dynamics and the phenomena of policy change and stability (Howlett and Rayner 2006). While some analysts prefer the inevitable/random ontology of historical narratives and thick descriptions, others have attempted to discern and explain the actual pattern of historical

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development found in different policy areas. This has led to the development of a 'punctuated equilibrium' description of policy dynamics and the development of the current orthodox 'homeostatic model' of negative feedback, institutional stability and exogenous shocks used by many authors to explain equilibria/trajectories and punctuations/conjunctures.

However, further empirical research has emphasized both the manner in which institutions can also promote change and the existence of endogenous conjunctures, undermining the homeostatic model and leading to a search for new explanations for why punctuated equilibrium processes exist in most policy areas. Most attention, hitherto, has been paid to the potential for 'path dependency' to become a powerful model of historical processes.

However, 'path dependence' remains a much used, and abused, model of historical sequencing. Although it has been applied to such diverse cases of policy-making and political re-structuring as European, Danish, post-Soviet regime transitions (Holzinger and Knill 2002; Nee and Cao 1999; Rona-Tas 1998; Torfing 2001) and environmental, industrial and health policy-making (Kline 2001; Rahnema and Howlett 2002; Bevan and Robinson 2005; Courchene 1993; Wilsford 1994), most of the works which employ it in the policy sphere have tended to apply it unsystematically, or to somewhat uncritically accept the analogies from the economics literature where it developed. As has been shown above, even the work of its most prominent exponents in the policy sciences, while distinguishable from the accounts provided in the economics literature, rests on many unsubstantiated theoretical assertions and incorrect empirics.

As a result, is becoming clearer that both the homeostatic model and the path dependency model apply at best to a very limited range of policy processes, those in which institutions only prevent change and in which external perturbations undermine their hegemony, or in which sequences begin almost by accident and in which equilibria continue exclusively due to positive feedback or increasing returns processes. Examples of such processes, however, do not appear to be the norm in policy-making where, instead, reactive sequences and embedded conjunctures appear to be much more common, suggesting an approach such as that of process sequencing more often will more accurately describe the actual nature of policy dynamics present in the field examined.

ENDNOTES

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2. Much of this work appeared in the American Journal of Sociology. For a selection of reprinted articles by a major figure in this discussion see Abbott 2001.
3. Path dependency in this sense represents a kind of failure to achieve a technically efficient solution that is attributed to any one of a number of factors: to 'network effects' or the ability of inferior technologies to spread and block the adoption of more efficient ones; to 'increasing returns' or the historical accident of the timing of the entry of new technologies into the market place; or to (premature) 'standardization' which can also block the spread of superior technologies. Debates in economics tend to turn on issues of what Liebowitz has called the 'degree' of path dependency, that is, how hard it is to 'turnaround' a sub-optimal process once it is underway (Liebowitz and Margolis 1995). For some authors turnaround is almost impossible, for others, it is somewhat less difficult to accomplish.
4. Hacker (2002) also defines the explanatory mechanism of path dependency as increasing returns, although he argues that whether increasing returns actually occur or not cannot be predicted in advance. While both authors suggest that two versions – broad (non-inevitable lock-in) path dependency and narrow (inevitable lock-in) path dependency – are possible, they ultimately opt for the narrow version in their studies and argue that without the concept of sub-optimal lock-in, path dependent analysis simply reverts to the weak causation characteristic of historical narratology.
5. Although, some studies have found evidence that structures constrain change (Rayner et al. 2001), other studies have found that institutions can also promote and facilitate change, so that the one-way dynamics suggested by Pierson are not present (Gains et al. 2005).
6. This is very similar to Djelic and Quack's (2007) idea of 'path generation' or 'path creation' whereby actors help to turn 'critical junctures' into new paths.
   Our results suggest that the concept of path generation allows for a better specification of the conditions for change in existing paths and for the emergence of new paths in the case of open systems than the concept of path dependency. Path generation does not result from single critical junctures, but rather from a historical sequence of multiple junctures that cannot be fully anticipated. Such crooked paths show the interplay between pressures for continuity and stimuli for change – reinforcing mechanisms challenged by external and internal triggers for change (p. 182).
7. Much of this evidence has been put forward by Baumgartner and Jones in their many works on US public policy-making (Jones et al. 1998; 2003; Jones and Baumgartner 2005; True 2000; True et al. 1999; Baumgartner and Jones 2002a) although other authors have also found evidence of such processes at work in other countries as well (John and Margetts 2003; Mortensen 2005). Baumgartner and Jones discovery of leptokurtotic distributions in U.S. federal government annual budgetary allocations provides strong empirical evidence of the expected pattern of embedded policy punctuations occurring in this area along with the kinds of trajectory reversals the model anticipates (Jones et al. 1998; 2003).
8. While they originally argued, like Sabatier and others, that the behaviour of policy actors in constructing dominant images or issue frames and cementing their own influence in the form of policy subsystem 'monopolies' could explain policy stability and the destruction of those images and monopolies explained periods of change, in their later work they have turned to a theory of 'disproportionate information processing' in order to explain PE processes (Baumgartner and Jones 2005; Workman et al. 2009). That is, they suggest that decision-makers 'hone-in' on several heuristics which lead them to endorse particular policy options. These heuristics leave out a great deal of information about external events which lead to errors in judgment which are cumulative over time, eventually leading to disjoint and episodic re-adjustments in heuristics – i.e. policy punctuations (Baumgartner and Jones 2005 p. 334).
   'Because of the cognitive and emotional constitutions of decision makers, decision making is cybernetic, continually underadjusting and then overcorrecting in an erratic path. Suddenly decision makers recognize that previously ignored facets of the environment are relevant and scramble to incorporate them. Choice is attention driven because unmonitored aspects of reality must be brought into the choice calculus as it becomes impossible to ignore them. Decisions are always 'catching up' to reality (p. 334).
9. De Vries (2005b) suggests a fifth phase follows efficiency which is a debate over 'the mission of the public sector compared to the private sector (p. 5)' and links the causes for the shifts between value priorities to generational replacement of leaders. However he continues to argue that the 'period-effect' that is the links to the 'politics of neglect' is more significant than the 'politics of age'.

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10. Similar finding of a long term nature in the US were revealed by Namenwirth (1973). De Vries theory predicts convergence of policy efforts across sectors within periods and great differences between such periods, as new policy generations emerge to emphasise those values and problems that were most neglected in the previous period. He expects coherent and converging changes around new core-values to be visible in each generation regarding policy goals, the use of specific policy instruments and the role of societal groups and state actors in the policy process (de Vries 2000). Hence one would expect to find a lagged pattern in which roughly the same changes become almost simultaneously visible in all policy areas within a country. This results in the idea of the existence of 'policy generations'. Such policy generations adhere to one central value which is increasingly visible in the new policies in all policy areas. At the end of such a policy generation the basic value dominates all policy-areas.
11. That is, pluralist theory involved the idea of policy-making as involving the mobilization and counter-mobilization of policy actors in a process of reaction and counter-reaction. Early writings in the U.S. in the pluralist vein (Schattschnieder 1960) argued for such a 'balancing' system, while later writings in a neo-pluralist vein argued that the superior resources of business would lead not to a balanced or oscillating response (Bardach 2006) but rather to one in which reforms would occur in cycles largely in reaction to the current excesses of businesses in the economy and society (McFarland 1991). Sabatier's notion of 'advocacy coalitions' also contained just such an idea lying behind the observation that most policy domains tended to develop only a small number of conflicting sets of policy actors (Sabatier 1988).

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