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# Punctuated Equilibrium

Scott E. Robinson

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# Punctuated Equilibrium

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## INTRODUCTION

Punctuated equilibrium theory has become a prominent tool for explaining policy change processes. At the most basic level, punctuated equilibrium theory is an account of policy change that predicts long-term policy equilibria that are infrequently, but dramatically, interrupted by periods of large change. The origins of punctuated equilibrium theory in the disputes between incremental and nonincremental theories of budgetary change are reviewed in this entry. Contemporary punctuated equilibrium theory and some of the recent trends in the research into this policy phenomenon are also discussed in this entry.

Recent research on public policy has shifted its attention from studies of cross-sectional variation in policy adoption to temporal variation. Instead of studying, say, why some states have adopted high-stakes tests while other states have not, temporal policy change researchers have asked why states have adopted policies at some times rather than others. Interest in the temporal dynamics of policy adoption in fact go decades back, but the recent resurgence of interest in the temporal dimensions of policy changes are, in part, because of the emergence of the punctuated equilibrium theory of policy change in the 1990s.

In this entry, I will trace the historical roots of the punctuated equilibrium model of policy change, lay out the basic theoretical propositions of the punctuated equilibrium model, and consider the recent directions in research on punctuated equilibrium models of policy change.

## HISTORICAL ROOTS OF PUNCTUATED EQUILIBRIUM

### Incrementalism

The scholar most responsible for bringing attention to questions of policy change was Charles Lindblum.<sup>[1]</sup> In his famous article “The Science of Muddling Through,” he analyzed the tendencies for slow change in administrative and policymaking groups. He argued that the slow change was a product of three pressures on policymakers. First, the policymakers had to seek consensus on any policy change—particularly in the

American government, the focus of Lindblum’s article. Second, the policymakers had very little information about potential large changes. The larger the change, in fact, the less reliable the information policymakers likely have to consider for the implications of the change. Third, policy change tends to involve very high stakes. If a large mistake is made, it may be difficult to reverse the decision. AQ1

Lindblum’s conclusion was that incrementalism dominates the policymaking process. Slow, considered, and politically noncontroversial policy changes are much more likely, Lindblum argued, than large, abrupt, and politically controversial policy changes. This approach was applied most prominently to the study of federal budgeting.<sup>[2]</sup> In the adaptation of incrementalism to federal budgeting, Wildavsky emphasized the need for consensus as a source of budgetary instrumentalism. To avoid opening up old political struggles, Wildavsky argued that politicians would use previous budgets as a baseline and only modify budgets slowly year-to-year. The result was a political consensus on an incrementally changing budgetary process, Wildavsky contended.

### Nonincrementalism

While the incrementalist school of policy change was popular from the time of Lindblum’s seminal article, many policy adoption scholars disagree that incrementalism could fully capture the dynamism inherent in policy change. Notably, Schulman<sup>[3]</sup> published a famous critique of incrementalism that attacked Lindblum’s theory using counterexample. Convincingly, Schulman argued that an incremental theory could not account for many important policy areas where one could not incrementally build up a program. While one may be able to incrementally start a social welfare program (say by having pilot programs with steadily increasing scope), one could not, Schulman pointed out, build a space program incrementally. The space program was one where there had to be an initially large, nonincremental investment for the program to ever start. Schulman argued that policies that are essentially indivisible (one cannot, for example, have 12% of the space program—you pretty much have one or do not have one) will be characterized by nonincremental policymaking.

1 The Schulman critique of incrementalism was  
 2 characteristic of the dispute between supporters of  
 3 the incrementalist and nonincrementalist perspectives.  
 4 The supporters of incrementalism would contend that  
 5 they identified a tendency in the political process.  
 6 The detractors would point to counterexamples to  
 7 illustrate the nonuniversality of the theory. Along with  
 8 conceptual ambiguities in what constituted “incremental”  
 9 change, the debate became bogged down and  
 10 researchers lost interest in the question.<sup>[4]</sup>

## 13 THE EMERGENCE OF THE PUNCTUATED 14 EQUILIBRIUM THEORY

15 The basic conflict between incrementalist and non-  
 16 incrementalist theories was easy to identify. Incremental-  
 17 ists were right in that the predominant mode of policy  
 18 change was slow and deliberate. However, noninremen-  
 19 talists were correct in that many (most even) important  
 20 policy changes were nonincremental. This left incremental  
 21 theory incapable of explaining many important policies.  
 22 What was needed was a theory that accounted for the  
 23 common experiences with incrementalism while still  
 24 allowing for occasional nonincremental policy change.

25 The solution to the problem came in the form of a  
 26 book, written by Baumgartner and Jones, *Agendas  
 27 and Instability in American Politics*.<sup>[5]</sup> In their study  
 28 of agenda setting in American politics, Baumgartner  
 29 and Jones had seen a common pattern emerge. Atten-  
 30 tion to policy issues seemed to change slowly most of  
 31 the time. Occasionally, however, there would be  
 32 dramatic episodes of large change.

33 The best example of this was the attention to issues  
 34 surrounding nuclear power. Attention to nuclear power  
 35 issues changed slowly over time through most of the 20th  
 36 century. One notable exception to this pattern of incre-  
 37 mental evolution of attention was the Three Mile Island  
 38 incident. Immediately following the incident, attention  
 39 to nuclear power issues shot up. This was clearly an  
 40 episode of nonincremental change in attention.  
 41 Baumgartner and Jones identified similar noninremen-  
 42 tal shifts in attention in such issues as pesticide controls.

43 To explain the mixed pattern they observed, Baum-  
 44 gartner and Jones borrowed a popular model of evolu-  
 45 tionary change proposed by Eldredge and Stephen.<sup>[6]</sup>  
 46 In punctuated equilibrium models of evolution, one  
 47 does not expect to see gradual change over time in  
 48 the fossil record. Instead, punctuated equilibria sug-  
 49 gested that one should find long periods of stability  
 50 (especially in the phenotypic characteristics of species)  
 51 rarely interrupted by periods of abrupt change. These  
 52 periods of abrupt change were called “punctuations,”  
 53 while the periods of stability were seen as “equilibria.”

54 Baumgartner and Jones adapted this approach for  
 55 studying change processes. They argued that agenda  
 56

setting processes produced mechanisms of negative  
 and positive feedback. When the mechanisms of nega-  
 tive feedback are dominant, as is the case in most situa-  
 tions, institutions militate against large changes in  
 attention and policy. In these periods, policymaking  
 proceeds through the traditional policy subsystems  
 rather than broad public participation. The denial of  
 tools to expand the conflict makes it difficult for actors  
 to substantially change the status quo.

However, events can create mechanisms of positive  
 rather than negative feedback. The example of Three  
 Mile Island was again instructive. The public nature  
 of the event expanded the conflict to include almost  
 everyone in the country. The policy subsystem was  
 broken wide open by the broad attention generated by  
 the Three Mile Island event. This set in motion a series  
 of positive feedback loops. The more people were paying  
 attention to the issue, the more media and political  
 attention was brought to the policy area. The more  
 media and political attention, the more stable the public  
 attention. The broad attention fed itself. More and more  
 people were aware of nuclear power issues. Soon it  
 became one of the leading issues of the day, not long  
 removed from its previous state of agenda obscurity.

The combination of positive and negative feedback  
 mechanisms in the policymaking system, Baumgartner  
 and Jones argued, created the characteristic pattern of  
 punctuated equilibrium theory—long periods of stasis  
 punctuated with short periods of abrupt, large change.  
 This was the pattern that had caused so many disputes  
 between the incrementalists and the nonincremental-  
 ists. The incrementalists could point to the long  
 periods of stasis as evidence of their approach. The  
 nonincrementalists could point to the episodes of  
 punctuation as evidence of the limitations of the incre-  
 mental approach. Punctuated equilibrium promised  
 the possibility of integrating the incrementalist theories  
 (to explain negative feedback processes) and the nonin-  
 cremental theories (to explain the positive feedback  
 processes) in one encompassing theory.

## ADVANCES IN PUNCTUATED EQUILIBRIUM THEORY

The first step in proving the importance of punctuated  
 equilibrium theory was to demonstrate the pervasiv-  
 ousness and importance of punctuated equilibrium  
 processes. While the original Baumgartner and Jones  
 text<sup>[5]</sup> had identified some examples of punctuated  
 equilibria, it had not demonstrated how common these  
 processes were. The disputes between incrementalists  
 and nonincrementalists had suggested that the pattern  
 may be common—even universal—but a general  
 demonstration was needed. Given the centrality of  
 budgeting to the dispute between incrementalists and

1 nonincrementalists, it was only natural to start by  
2 looking at the distribution of budgetary change.

3 True, Jones, and Baumgartner<sup>[7]</sup> provided a demon-  
4 stration that punctuated equilibrium described the  
5 actual distribution of U.S. federal budgetary changes  
6 better than did traditional incremental or rational  
7 choice explanations. What they found when they  
8 looked at the distribution of federal budget appropri-  
9 ations was a characteristically leptokurtic distribution—  
10 i.e., a distribution characterized by a large number of  
11 observations at its peak (in this case, around a slow  
12 growth value), a large number of observations of large  
13 change (in both the positive and negative direction),  
14 and a smaller than expected number of moderate  
15 changes. The distribution of federal budget appropri-  
16 ations indicated that small and large changes were easier  
17 to make than would have been expected, while moder-  
18 ate change was harder than expected. This is exactly  
19 the descriptive prediction of the punctuated equili-  
20 brium theory. Long periods of stasis would produce  
21 a large number of observations of small change. The  
22 rare, but dramatic, punctuations would show up as  
23 an unexpectedly large number of large changes. These  
24 unexpected observations (unexpectedly common small  
25 and large changes) would come at the cost of reducing  
26 the frequency of moderate changes. The analysis of  
27 U.S. federal appropriations budget convincingly  
28 demonstrated the existence of punctuated equilibrium.

29 Recent work in the punctuated equilibrium tradi-  
30 tion has moved from the demonstration of the exist-  
31 ence of punctuated equilibria to testing of the causes  
32 of punctuated equilibria. Jones, Sulkin, and Larsen<sup>[8]</sup>  
33 showed that punctuated equilibrium theory could pro-  
34 vide the basis for predictive, hypothesis testing. They  
35 found that the stages of the policymaking process grew  
36 increasingly “punctuated” from agenda setting to pol-  
37 icy budgeting. The degree of punctuation seemed to  
38 increase as one moved from settings like popular media  
39 and popular elections to highly institutionalized setting  
40 like legislative budgeting. The authors contended that  
41 this pattern indicated an increase in institutional fric-  
42 tion as one moved through the policy process. Other  
43 authors found that factors such as the nature of the  
44 policy activity<sup>[9]</sup> or bureaucratization of the policy-  
45 making institutions also affected the degree of punc-  
46 tuation.<sup>[10]</sup> This research reassured scholars that  
47 punctuated equilibrium was a theory with predictive  
48 power and a subject worthy of continued investigation.

## 52 THE FUTURE OF PUNCTUATED EQUILIBRIUM 53 RESEARCH

54 The future looks bright for research into punctuated  
55 equilibrium models of policy change. The recent attention  
56

to hypothesis testing has opened up new avenues of  
research and theory development.

The most obvious recent development is the  
broadening of the scope of punctuated equilibrium  
research. While previous research had been largely  
limited to U.S. federal data<sup>[7,8]</sup> (with some forays into  
local budgets,<sup>[9,10]</sup> recent research increasingly deals  
with policymaking institutions in other areas. Punctu-  
ated equilibrium patterns at other levels of policymak-  
ing—including international comparisons<sup>[11]</sup> and  
comparisons between states in the U.S. system—have  
been investigated in a recent work.<sup>[12]</sup> Expanding the  
research into new institutional contexts has allowed  
for the investigation of institutional contributions to  
punctuated equilibrium in ways that the federal  
budgeting studies have not been able. International  
studies have been able to investigate the impact of  
parliamentary systems of punctuated equilibrium,<sup>[11]</sup>  
while the studies in U.S. states have allowed investi-  
gators to consider the role of federal specialization  
on punctuated policymaking.<sup>[12]</sup>

## CONCLUSIONS

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More work remains to be done to better understand  
punctuated equilibrium theory. First, work remains  
to uncover the causes of punctuated equilibrium. A  
great amount of work is still to be done to help us  
understand why some policy processes seem more  
prone to punctuated equilibria than other processes.  
Suggestions like “institutional friction”<sup>[8]</sup> help us pin  
down the exact causes—though this is only a begin-  
ning. There are also methodological challenges ahead.  
Most of the studies have heretofore compared samples  
of policy outputs rather than individual policy outputs.  
This limits research substantially because the compar-  
isons tend, then, to be discrete and univariate. Recent  
work has sought to provide a system to study punctu-  
ated policy processes at the individual input unit of  
analysis, but these are only the first steps at multivariate  
analyses.<sup>[13]</sup>

Punctuated equilibrium theory has proven to be a  
useful way to resolve the disputes between incremental  
and nonincremental theory. While it is still a new the-  
ory, the existing work leads to the suggestion that it is a  
promising tool in understanding policy change process.

## ARTICLES OF FURTHER INTEREST

*Decision-Making, Incrementalism, and Transforma-  
tional Change*, p. 000.

*Decision-Making, Open Systems, and Non-equilibrium*,  
p. 000.

*Incrementalism*, p. 000.

1 *Models of the Policy Process*, p. 000.  
 2 *Policy Change*, p. 000.  
 3 *Public Budgeting*, p. 000.

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