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# Issue-Attention and Punctuated Equilibria Models Reconsidered: An Empirical Examination of the Dynamics of Agenda-Setting in Canada\*

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## Introduction: Heuristic versus Empirical Conceptions of Policy Cycles

The question of whether or not systematic and regular patterns of public policy making exist has intrigued students of the policy process for close to two decades. While interpretations of the "policy cycle" have tended to be developed in the abstract, as heuristic models of the logic of public policy making for policy analysis purposes,<sup>1</sup> there has been a simultaneous, and often unnoticed, movement attempting to establish such cycles not as conceptual devices but as concrete empirical realities.<sup>2</sup> It is this second set of studies of the

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1 See Harold D. Lasswell, *The Decision Process: Seven Categories of Functional Analysis* (College Park: University of Maryland, 1956); Garry D. Brewer, "The Policy Sciences Emerge: To Nurture and Structure a Discipline," *Policy Sciences* 5 (1974), 239-44; and Charles O. Jones, *An Introduction to the Study of Public Policy* (Monterey: Brooks/Cole, 1984). For a critique of this heuristic see Paul A. Sabatier, "Toward Better Theories of the Policy Process," *PS: Political Science and Politics* 24 (1991), 144-56.

2 See Richard Rose, "Models of Change," in Richard Rose, ed., *The Dynamics of Public Policy: A Comparative Analysis* (London: Sage, 1976), 7-33; and Andrew S. McFarland, "Interest Groups and Political Time: Cycles in America," *British Journal of Political Science* 21 (1991), 257-84. See also David A. Rochefort, "Policymaking Cycles in Mental Health," *Journal of Health Politics, Policy and Law* 13 (1988), 129-52; and Paul Sabatier, "Policy Change Over a Decade or More," in P. A. Sabatier and H. C. Jenkins-Smith, eds., *Policy*

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dynamics of public policy making which is addressed in this article.

Most of the work on policy dynamics focuses on the agenda-setting stage of the policy process and argues that policy issues wax and wane in public attention, generating a coherent pattern of governmental activity in particular policy sectors. Central to this focus has been the notion of a periodic pattern of policy appearance and disappearance on governmental and public policy agendas, first discussed by Anthony Downs in his work on "issue-attention" cycles.<sup>3</sup> Other models, such as that recently put forward by Frank Baumgartner and Bryan Jones, focus on policy subsystems and the manner in which subsystems construct or attempt to construct hegemonic interpretations of policy problems and solutions, resulting in the creation and destruction of "policy monopolies."<sup>4</sup> This results, again, in the expectation of an observable characteristic pattern of policy change although, unlike Downs, what is anticipated is not a predictable periodic cycle but rather an unpredictable, "stepped" or "punctuated equilibrium" policy dynamic.<sup>5</sup>

This article will elaborate the elements of the models developed by Downs and Baumgartner and Jones and subject both to empirical testing using the analysis of time-series data gathered on the frequency of mentions of nuclear energy and acid rain issues on government and public agendas in Canada over the period 1977-1992. As the analysis will demonstrate, little empirical evidence exists supporting either model. The evidence gathered in the Canadian case, in particular, suggests that several key assumptions behind the models must be altered to account for these anomalies.

## Modelling Agenda-Setting

Agenda-setting is a subject which has been little investigated in Canada despite its obvious importance to understanding public policy making. As Cobb and Elder put it in their early studies of the subject in the United States:

*Change and Learning: An Advocacy Coalition Approach* (Boulder: Westview, 1993), 13-40.

- 3 Anthony Downs, "Up and Down with Ecology—The 'Issue-Attention Cycle,'" *The Public Interest* 28 (1972), 38-50.
- 4 Frank R. Baumgartner and Bryan D. Jones, *Agendas and Instability in American Politics* (Chicago: University of Chicago Press, 1993).
- 5 On the "punctuated equilibrium" model of change, see Connie J. G. Gersick, "Revolutionary Change Theories: A Multilevel Exploration of the Punctuated Equilibrium Paradigm," *Academy of Management Review* 16 (1991), 10-36; and Gudmund Hernes, "Structural Change in Social Processes," *American Journal of Sociology* 82 (1976), 513-47.

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**Abstract.** Most of the work on policy dynamics focuses on the agenda-setting stage of the policy cycle and argues that policy issues wax and wane in public attention, generating either a cyclical or evolutionary pattern of governmental activity in particular policy sectors. Anthony Downs's notion of a periodic "issue-attention cycle" and Frank Baumgartner and Bryan Jones's notion of a stepped or "punctuated equilibrium" pattern of policy change are prominent in the literature, but have received little empirical and virtually no cross-national verification. Utilizing the analysis of time-series data gathered on nuclear energy and acid rain issues appearing on government and public agendas in Canada over the period 1977-1992, this article elaborates the elements of the two models and subjects both to empirical testing. The article finds little support for either model in the Canadian case and argues the assumptions behind the models must be altered to account for this anomalous case.

**Résumé.** La plupart des travaux portant sur la dynamique des décisions gouvernementales met l'accent sur l'étape des échéances du cycle de changement d'orientations et démontre que les controverses sur les décisions croissent et décroissent avec le temps dans l'attention du public. Ce phénomène entraîne une tendance qui peut être soit un patron cyclique, soit évolutif au sein de certains secteurs de l'activité gouvernementale. Le concept de cycle périodique, nommé «cycle susceptible de soulever la controverse» par Anthony Downs et le concept d'un modèle «d'équilibre intermittent», ou modèle de changement d'orientation par étapes progressives, développé par Frank Baumgartner et Bryan Jones, abondent dans la littérature. Toutefois, ils ont été peu vérifiés à la fois empiriquement et à l'échelle pan-étatique. En se fondant sur les données des séries chronologiques sur l'énergie nucléaire ainsi que sur les controverses soulevées par le débat public portant sur les pluies acides entre 1977 et 1992, cette étude approfondit les éléments des deux modèles considérés et les soumet à des tests empiriques. Cet article montre que ces deux modèles sont inadéquats lorsqu'appliqués au cas canadien et soutient que les hypothèses sur lesquelles elles reposent doivent être révisées pour prendre en considération ce qui apparaît comme une anomalie.

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pre-political, or at least pre-decisional processes often play the most critical role in determining what issues and alternatives are to be considered by the polity and the probable choices that will be made. What happens in the decision-making councils of the formal institutions of government may do little more than recognize, document and legalize, if not legitimize, the momentary results of a continuing struggle of forces in the larger social matrix. . . . From this perspective, the critical question becomes, how does an issue or a demand become or fail to become the focus of concern and interest within a polity?<sup>6</sup>

The question of how a problem comes to be interpreted as a *public* problem requiring government action raises deeper questions about the nature of human knowledge and the social construction of that knowledge, and the policy sciences took many years to evolve a position or theory on the nature of social problems.<sup>7</sup>

6 Roger W. Cobb and Charles D. Elder, *Participation in American Politics: The Dynamics of Agenda-Building* (Boston: Allyn and Bacon, 1972), 12.

7 Most early works on the subject began from the assumption that socio-economic conditions led to particular sets of problems to which governments eventually responded. See Ira Sharkansky, "Constraints on Innovation in Policy Making: Economic Development and Political Routines," in Frank Marini, ed., *Toward a New Public Administration: The Minnowbrook Perspective* (Scranton: Chandler, 1971), 261-79; H. J. Aaron, "Social Security: International Comparison," in

It is now generally agreed that a variety of political,<sup>8</sup> epistemological<sup>9</sup> and ideological<sup>10</sup> factors in addition to the unfolding of basic socio-economic processes can affect which social problems gain access to the formal policy agenda of government. This conceptual agreement on the basic outline of significant policy determinants, however, far from representing the culmination of analysis in this area of public policy making, merely sets out the general types of variables which analysts should take into account when investigating the subject. It leaves open the key questions of which policy actors are involved in

O. Eckstein, ed., *Studies in the Economics of Income Maintenance* (Washington, D.C.: Brookings Institution, 1967), 13-49; F. L. Pryor, *Public Expenditures in Communist and Capitalist Nations* (Homewood, Ill.: R. D. Irwin, 1968); and H. L. Wilensky, *The Welfare State and Equality: Structural and Ideological Roots of Public Expenditures* (Berkeley: University of California Press, 1975). This "response theory" soon proved unsatisfactory for a variety of reasons, not the least of which related to its tendency to overstate the influence of either governments or their public in driving the agenda-setting process, to the neglect of a subtler understanding of how these actors related to each other and the manner in which interpretations of policy problems were constructed. See Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York: Doubleday, 1966); and Malcolm Spector and John I. Kitsuse, *Constructing Social Problems* (New York: Aldine de Gruyter, 1987).

- 8 Frank Castles and Robert D. McKinlay, "Does Politics Matter?: An Analysis of the Public Welfare Commitment in Advanced Democratic States," *European Journal of Political Research* 7 (1979), 169-86; Francis G. Castles, "The Impact of Parties on Public Expenditure," in Francis G. Castles, ed., *The Impact of Parties: Politics and Policies in Democratic Capitalist States* (London: Sage, 1982), 21-96; Douglas A. Hibbs, Jr., "Political Parties and Macroeconomic Policy," *American Political Science Review* 71 (1977), 1467-87; Anthony King, "What Do Elections Decide?" in David Butler, Howard R. Penniman and Austin Ranney, eds., *Democracy at the Polls: A Comparative Study of Competitive National Elections* (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1981), 96-124; and Klaus von Beyme, "Do Parties Matter? The Impact of Parties on the Key Decisions in the Political System," *Government and Opposition* 19 (1984), 5-29.
- 9 See Stephen Hilgartner and Charles L. Bosk, "The Rise and Fall of Social Problems: A Public Arenas Model," *American Journal of Sociology* 94 (1981), 53-78; Burkhart Holzner and John H. Marx, *Knowledge Application: The Knowledge System in Society* (Boston: Allyn and Bacon, 1979); and David A. Rochefort and Roger W. Cobb, "Problem Definition, Agenda Access, and Policy Change," *Policy Studies Journal* 21 (1993), 56-71.
- 10 See Murray J. Edelman, *Constructing the Political Spectacle* (Chicago: University of Chicago Press, 1988), 12-13; Andrew Stark, "'Political-Discourse' Analysis and the Debate over Canada's Lobbying Legislation," this JOURNAL 25 (1992), 513-34; Frank Fischer and John Forester, eds. *The Argumentative Turn in Policy Analysis and Planning* (Durham: Duke University Press, 1993); Deborah A. Stone, *Policy Paradox and Political Reason* (Glenview: Scott, Foresman, 1988); and Deborah A. Stone, "Causal Stories and the Formation of Policy Agendas," *Political Science Quarterly* 104 (1989), 281-300.

agenda-setting, and the manner in which the highlighted variables combine to affect the actions of these actors.<sup>11</sup>

A more precise model of agenda-setting is required if the loose “frameworks” approach to agenda-setting is to be improved upon. Such models should specify (1) the nature of the relevant policy actors in the agenda-setting process and their relationship to each other, (2) the expectations and rationale for anticipated actor behaviour and (3) clear linkages between (1) and (2) that account for anticipated policy outcomes and overall patterns of policy change.

The models put forward over a 20-year period by Downs and Baumgartner and Jones purport to set out these elements of a theory of agenda-setting (see Figure 1). Both have been subject to some empirical testing of questionable validity using examples from the United States, and neither has been tested in the Canadian context. In what follows, the key assumptions and hypotheses of each model will be set out. In the third section of the article the results of the empirical tests conducted to date in the US will be assessed and an application and test against Canadian experience made.

#### *The Downsian Issue-Attention Model*

Downs’s model was set out in largely anecdotal fashion in his 1972 article on environmental policy making. In Downs’s view, public policy making in many areas of social life tended to revolve around specific issues which momentarily captured public attention; resulting in demands for government action. These problems would soon fade from view as the complexity or intractability of the problem became apparent to members of the public. As he put it:

American public attention rarely remains sharply focused upon any one domestic issue for very long—even if it involves a continuing problem of crucial importance to society. Instead, a systematic “issue-attention cycle” seems strongly to influence public attitudes and behaviour concerning most key domestic problems. Each of these problems suddenly leaps into prominence, remains there for a short time, and then—though still largely unresolved—gradually fades from the center of public attention.<sup>12</sup>

In a democracy in which politicians ignore public demands at their peril, Downs argued, waxing and waning public attention would

- 11 This is the case, for example, with the popular notion of a “funnel of causality” put forward by Richard Hofferbert in the US and Richard Simeon in Canada in the early 1970s, in the effort to model policy determinants. See Richard I. Hofferbert, *The Study of Public Policy* (Indianapolis: Bobbs-Merrill, 1974); and Richard Simeon, “Studying Public Policy,” this JOURNAL 9 (1976), 548-80.
- 12 Downs, “Up and Down with Ecology,” 38.

FIGURE 1

## ELEMENTS OF DOWNS'S ISSUE ATTENTION AND BAUMGARTNER AND JONES'S PUNCTUATED EQUILIBRIUM MODELS

	Relevant policy actors and relationships	Anticipated actor behaviour	Anticipated policy outcomes
Downs's Issue Attention Model	Governments (politicians) Public (individuals)	Governments (politicians) weigh electoral advantage and disadvantages of policy action. Public (individuals) weigh personal advantage and disadvantage of allocation of time and money to particular issue.	Regular, periodic, cyclical pattern of public policy making in democratic societies emerges as public alternatively devotes attention to difficult-to-resolve problems and ignores their existence.
Baumgartner and Jones's Punctuated Equilibrium Model	Policy subsystems (individuals, experts, groups, government officials and politicians, media)	Subsystem construction of hegemonic policy images. Struggle between subsystem members and non-members to alter images, change venues and affect institutional structures and subsystem composition.	Pattern of construction and destruction of policy images and subsystems results in a stepped, or "punctuated" equilibrium pattern of policy change featuring lengthy period of little or incremental change and infrequent periods of rapid or major change.

result in a characteristic cyclical pattern of agenda-setting and public policy making; the “issue-attention cycle.”

This idea of a systematic issue-attention cycle in public policy making has gained a great deal of attention in subsequent years and Downs’s work is one of the most often cited in the agenda-setting literature. Nevertheless, Downs’s original hypothesis was rather vague. It was not clear, for example, whether this cycle was expected to apply to “most key domestic problems,” as the above quotation suggests, or only to a subset of “all major social problems,” as is suggested later in the article.

The problems most likely to be affected by the issue-attention syndrome, Downs argued, were those that shared three basic characteristics. First, they were problems that adversely affected a minority of the population. Second, they were problems that were generated as the side-effects of arrangements which benefited the majority of the population. Third, they were problems that were capable of generating “dramatic” moments, but not sustained periods, of attention in the mass media. Together these three characteristics would ensure that “most people will not be continually reminded of the problem by their own suffering from it; . . . solving the problem requires sustained attention and effort, plus fundamental changes in social institutions and behaviour; . . . [and] the media’s sustained focus on this problem soon bores a majority of the public.”<sup>13</sup>

This discussion, of course, leaves open the possibility of other types of agenda-setting which would be expected to occur whenever a problem fails to meet any of these three conditions. That is, presumably a large set of non-issue-attention problems would exist which had, at minimum, one of the following characteristics: (1) the problem directly affects the majority of the population; and/or (2) the problem is simple to understand and resolve; and/or (3) the problem could generate continuing, sustained, “dramatic” media coverage. Downs did not elaborate upon these types of issues, however, or upon the likely typical pattern of policy development and change (if any) that might characterize them.

Within the set of those issues sharing the three issue-attention characteristics, however, most of the other key elements of Downs’s model were clear. The two key actors were governments and the “public,” and the relationship set out between them was one in which the government responded to public concern. Both sets of actors were assumed to be driven largely by self-interest: the government by its political wing and politicians’ interest in re-election in a democratic polity, and the public by rational calculations of what individuals felt could be accomplished as a result of their devotion of scarce political resources to particular problems.

13 Ibid., 42.



Given these behavioural assumptions and issue characteristics, the expectation for resulting policy outcomes, as mentioned above, was a periodic, cyclical pattern of issue-attention, in which public interest in a particular issue would peak and be followed by governmental attention. Public interest would then tend to fall off, as would government activity, until the next wave of interest again sparked government action. This pattern would repeat itself with no end to the cycle anticipated.

### *The Baumgartner and Jones Punctuated Equilibrium Model*

Beginning from the observation that the process of agenda-setting involves discussion, debate and persuasion among policy actors, who present a variety of evidence and argument in support of their position,<sup>14</sup> Frank Baumgartner and Bryan Jones have developed another model of agenda-setting which focuses on the significance of policy subsystem change for understanding policy dynamics.<sup>15</sup>

The key element in the process of agenda-setting, Baumgartner and Jones argue, involves the creation of "policy monopolies" in which specific subsystems gain the ability to control the interpretation of a problem and thus the manner in which it is conceived and discussed. Both governmental actors and members of the public are located in policy subsystems, and the key relationship upon which Baumgartner and Jones focus their analysis of US agenda-setting is that between individuals and groups represented in existing subsystems and those who would like to be.<sup>16</sup>

For Baumgartner and Jones, the "image" of a policy problem is significant because of the way that it influences subsystem membership. Hence they argue: "When they are portrayed as technical problems rather than as social questions, experts can dominate the decision-making process. When the ethical, social or political implications of such policies assume center stage, a much broader range of participants can suddenly become involved."<sup>17</sup>

14 Giandomenico Majone, *Evidence, Argument, and Persuasion in the Policy Process* (New Haven: Yale University Press, 1989).

15 Frank R. Baumgartner and Bryan D. Jones, "Agenda Dynamics and Policy Subsystems," *Journal of Politics* 53 (1991), 1044-74; Baumgartner and Jones, *Agendas and Instability in American Politics*; and Frank R. Baumgartner and Bryan D. Jones, "Attention, Boundary Effects, and Large-Scale Policy Change in Air Transportation Policy," in D. A. Rochefort and R. W. Cobb, eds., *The Politics of Problem Definition: Shaping the Policy Agenda* (Lawrence: University Press of Kansas, 1994), 50-66.

16 On subsystems and their role in the policy process see Michael Howlett and M. Ramesh, *Studying Public Policy: Policy Cycles and Policy Subsystems* (Toronto: Oxford University Press, 1995).

17 Baumgartner and Jones, "Agenda Dynamics and Policy Subsystems," 1047.

In their model, subsystem members seek to alter policy images through a number of tactics related to altering the venue of policy debate, or other aspects of the prevailing policy discourse, and thereby undermine the complacency or stability of an existing policy subsystem. The strategies adopted by groups, Baumgartner and Jones argue, generally fall into two types. In the “Downsian” strategy, groups can publicize a problem in order to alter its venue by encouraging the public to call upon governments to resolve the problem or take advantage of some new technology.<sup>18</sup> In a second typical approach, which Baumgartner and Jones term a “Schattschneider” mobilization, groups involved in the policy subsystem who do not like the policies being developed or discussed by governments seek to alter the institutional arrangements within which the subsystem operates in order to expand or contract its membership.<sup>19</sup>

This behaviour tends towards another pattern of policy outputs, but one which is an irregular, stepped, function, rather than a periodic cycle. That is, it involves a “punctuated equilibrium” process in which relatively long periods of policy stability are interspersed with infrequent periods of rapid change as issue images and venues, and often institutions and subsystem composition, are altered. As Baumgartner and Jones put it:

When shocks or changes are introduced in this system, they may lead not just to a momentary deviation from normal, with a more or less rapid return to the status quo, but rather to new points of stability, as the system settles down at a point radically different from the original. If policy and politics can be said to follow such a dynamic, then we expect stability during certain periods, but with the possibility of rapid, dramatic and non incremental change.<sup>20</sup>

### **Tests of the Two Models of Policy Cycles**

Despite the widespread acceptance of elements of these models in the policy literature, there is little convincing empirical evidence of the existence of either issue attention or punctuated equilibrium policy dynamics. This is true both of studies of either model in the context of US politics where they originated, and also in a cross-national, comparative context.<sup>21</sup> In what follows, two tests will be developed using

18 Baumgartner and Jones, *Agendas and Instability in American Politics*, 88.

19 Ibid., 89.

20 Ibid., 18.

21 See the related discussion of the need for comparative empirical verification of theories of electoral realignment in Edward G. Carmines and James A. Stimson, “On the Evolution of Political Issues,” in William H. Riker, ed., *Agenda Formation* (Ann Arbor: University of Michigan Press, 1993), 151-69.

Canadian data which will both help to evaluate these models in an overall, conceptual sense, as well as provide some evidence regarding the ability of these constructs to carry across nations.

*A Test of the Downsian Issue-Attention Cycle:*

Despite its frequent citation in the policy literature over the past two decades, the idea of Downsian-type issue-attention cycles has rarely been subject to empirical evaluation. In 1985, Peters and Hogwood did make an effort to operationalize their own version of Downs's cycle, attempting to assess the relationship existing between "waves" of public interest as measured in Gallup polls, and periodic "waves" of organizational change or institution building in the US federal government.<sup>22</sup>

Although they found evidence of major periods of administrative consolidation and change in recent history, the difficulty in their study came in linking these periods to fluctuations in public interest. A second, related problem stemmed from some difficulties they encountered defining and categorizing organizational change. That is, government organizational activity involves specific actions taken with existing structures, including re-organizations, consolidations, mergers and transfers of branches and sections, as well as the initiation or creation of new organizations. While initiations are a good measure of policy change, re-organizations may result from a variety of sources, such as internal efficiency drives, which are not as clearly related to shifts in overall policy orientations. To guard against an overreliance on a weak measure, Peters and Hogwood examined instances of re-organization and initiation separately.

The two authors noted that only 7 of 12 policy areas examined for instances of re-organizational activity met the expectations of the Downsian model. That is, they exhibited such changes during the same decade as the peak of public interest as measured by Gallup Poll surveys. In another four, however, re-organizational activity occurred in the decade following peak public interest, while in one area—social welfare policy—re-organization occurred before peak public interest. These weak results using a weak measure were borne out by the author's examination of organizational initiations. Here they found only four initiations coincided with the same decade as peak public interest, while four occurred in the following decade and three—economic policy, housing and social welfare—occurred before peak public interest.<sup>23</sup>

22 B. Guy Peters and Brian W. Hogwood, "In Search of the Issue-Attention Cycle," *Journal of Politics* 47 (1985), 238-53.

23 *Ibid.*, 250.

On the basis of these findings, Peters and Hogwood offered only partial support for Downs's hypothesis. As they argued: "Our evidence supports Downs's contention that problems which have been through the issue-attention cycle will receive a higher level of attention after rather than before the peak."<sup>24</sup> However, they were also careful to note that there appeared to be at least two additional patterns or cycles at work in the issue-attention process to that Downs first identified. In the first type, cycles were initiated by external or exogenous events such as war or an energy crisis, and then mediated by public attention. In this type of "crisis" cycle, the problem would not "fade away" as Downs hypothesized. In the second type of "political" cycle, issue initiation originated in the political leadership and then, too, was mediated by public attention.<sup>25</sup>

This finding is not completely inconsistent with Downs's own work, since he did not hypothesize that all policy areas would be equally affected by the issue-attention syndrome. Unfortunately, however, it is also inconclusive with respect to those issue areas which fall into Downs's issue-attention category because of problems related to the dependent variable. That is, as was pointed out above, the question of what actually constitutes "organizational change" is unclear and, second, the length of time examined for evidence of organizational changes—a decade—could easily mask other movements or factors underlying any imputed correlation with public opinion.

A better test of the Downsian model can be constructed by focusing on the critical relationship postulated to exist between the two key policy actors; governments and their public. According to this distinction, if several policy issues which shared Downs's three central problem characteristics were studied across time, one would expect to find that the mentions of the issue on the government agenda would be led by mentions by the public. Thus a test can be developed through a content analysis of issue mentions in government and in the public sphere, looking for the hypothesized pattern in the frequency and lag of mentions of a policy issue on the government agenda with those found on the public agenda.

In this context, it should be noted, the record of media attention to a particular issue can act as a surrogate for public opinion data. This is because Downs argued that a critical element affecting agenda-setting in American politics was the manner in which the media interacted with the complex nature of policy problems and the limited interest in issues displayed by the majority of the American public. As he put it:

24 Ibid., 251.

25 Ibid., 252.

Public perception of most "crises" in American domestic life does not reflect changes in real condition as much as it reflects the operation of a systematic cycle of heightening public interest and then increasing boredom with major issues. This "issue-attention cycle" is rooted both in the nature of certain domestic problems and in the way major communications media interact with the public.<sup>26</sup>

Since media attention is expected to translate or prompt public attention, it can be used as a reasonable measure of public interest and thus help the analysis by somewhat lengthening the lag expected to be found between "public" outcry and government response.<sup>27</sup>

In order to develop this test, time series data were compiled on the daily mention of two Canadian issues—nuclear energy and acid rain—which both dealt with aspects of environmental policy making that Downs specifically discussed as the exemplar of a policy area prone to issue-attention cycles. These daily data were collected over a 15-year period from 1977 to 1992 in order to allow for the possibility of relatively long-term issue-attention cycles.

Series were collected on two data sources for each agenda and topic in order to ensure relevant dynamics were not missed due to series selection or sampling procedures. These series were constructed so as to provide two sources of "official" agenda items and two representative of the public or "unofficial" agenda. Issue mentions relating to the official agenda were gathered through a content analysis of debates and committee reports of the Canadian House of Commons. Issue mentions relating to the public agenda were gathered from a similar analysis of contents of Canadian daily newspapers and periodicals. Each of these sources was searched for the appearance of keywords related to nuclear issues, including references to topics such as "atomic energy" or "nuclear industries" and acid rain issues, including topics such as "acid rain pollution" or "acid precipitation."

For this purpose, various indices to these sources were used. These included the index to the *Debates* (Hansard) of the House of

26 Downs, "Up and Down with Ecology," 39.

27 Christopher J. Bosso, "Setting the Agenda: Mass Media and the Discovery of Famine in Ethiopia," in M. Margolis and G. A. Mauser, eds., *Manipulating Public Opinion: Essays on Public Opinion as a Dependent Variable* (Pacific Grove: Brooks/Cole, 1989), 153-74. This does not presuppose that Downs's characterization of the role of the media in the policy process is correct. On this, see F. L. Cook et al., "Media and Agenda Setting: Effects on the Public, Interest Group Leaders, Policy Makers, and Policy," *Public Opinion Quarterly* 47 (1983), 16-35; Lutz Erbring and Edie N. Goldenberg, "Front Page News and Real World Cues: A New Look at Agenda-Setting by the Media," *American Journal of Political Science* 24 (1980), 16-49; and Maxwell E. McCombs, "The Agenda-Setting Approach," in D. D. Nimmo and K. R. Sanders, eds., *Handbook of Political Communication* (Beverly Hills: Sage, 1981), 121-40.

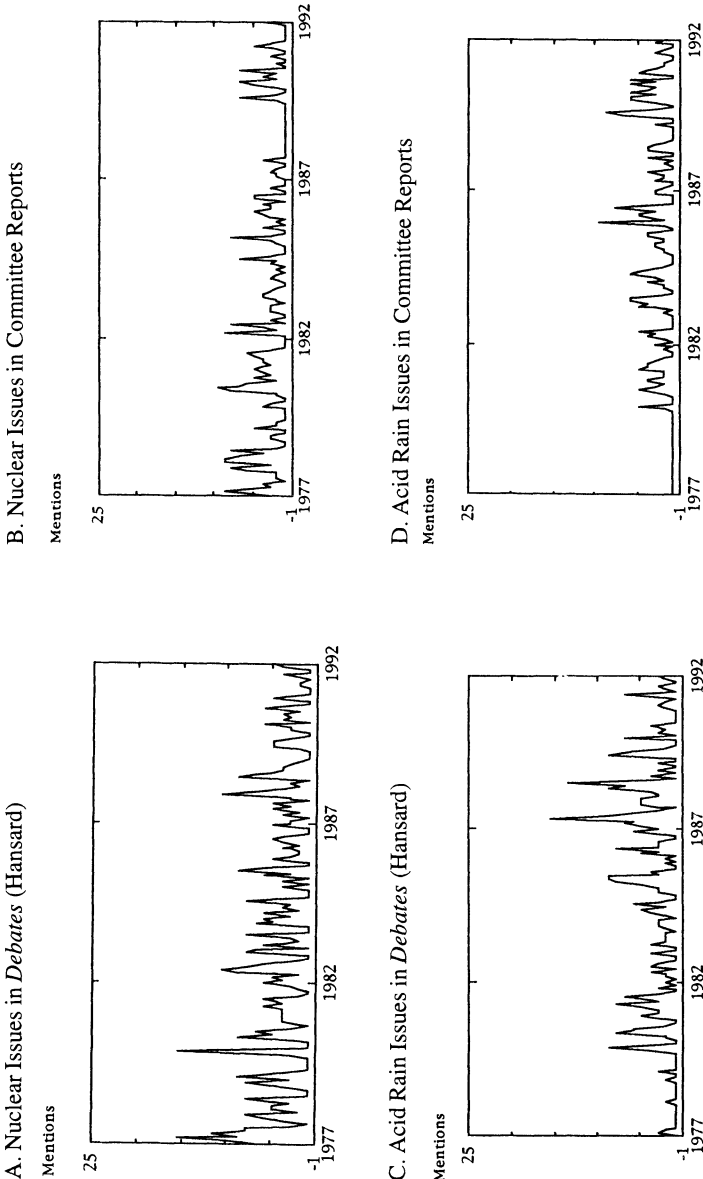
Commons (1977-1992) provided directly by the index and reference service of the House of Commons in Ottawa, the *Index to Journals of the House of Commons of Canada* (1977-1992), the *Canadian Newspaper Index* (1977-1987) covering the *Montreal Star*, *The Globe and Mail* (Toronto), *The Toronto Star*, *Sun* (Vancouver) and the *Winnipeg Free Press*, the *Canadian Business and Current Affairs* (CBCA) computerized index (1987-1992)<sup>28</sup> and the *Canadian Periodical Index*. Each keyword appearance was recorded for each source and topic on a daily basis. These daily totals were summed for each 30-day period for the entire 15-year period to provide a record of 183 "monthly" cases for each of the four sources for each issue. The eight time-series generated from these cases were analyzed using a variety of procedures in SYSTAT.

The caseplots generated by the analysis for the mentions of the two issues in Canadian parliamentary institutions are contained in Figure 2.

These caseplot data were subject to evaluation using Box-Jenkins or ARIMA procedures, since the significant autocorrelation existing in the series violates crucial assumptions in ordinary least squares (OLS) analysis.<sup>29</sup> The extent of this autocorrelation is revealed in Table 1 below. Since the Durbin Watson diagnostic statistics are low and first-order correlations high for all series except Acid Rain periodical men-

- 28 CBCA is the major electronic index for Canadian newspapers, popular and business magazines, and scholarly journals, and is equivalent to the Canadian Index, formerly the Canadian Business Index, Canadian News Index and Canadian Magazine Index. CBCA provides comprehensive coverage of Canadian topics, including the arts, business, politics, literature, history and news events, from 1982 to the present.
- 29 On time series analysis, see Lon-mu Liu, "Box-Jenkins Time Series Analysis," in W. J. Dixon, ed., *BMDP Statistical Software Manual* (Berkeley: University of California Press, 1988), Vol. 1, 429-82; Richard McCleary and Richard A. Hay, *Applied Time Series Analysis for the Social Sciences* (Beverly Hills: Sage, 1980); and Bernhard Schmitz, "Univariate and Multivariate Time Series Models: The Analysis of Intraindividual Variability and Intraindividual Relationships," in A. von Eye, ed., *Statistical Methods in Longitudinal Research*, Vol. 2: *Time Series and Categorical Longitudinal Data* (Boston: Academic Press, 1990), 351-86. For political studies employing a similar methodology see Stephanie Greco Larson and David Alan Grier, "Agenda Setting and AIDS," *Proceedings of the American Political Science Association* (1990); Edward G. Carmines and James A. Stimson, "On the Structure and Sequence of Issue Evolution," *American Political Science Review* 80 (1986), 901-20; and Jeffrey E. Cohen, "Presidential Rhetoric and the Public Agenda," *American Journal of Political Science* 39 (1995), 87-107. An early example is B. Guy Peters, "Social Change, Political Change and Public Policy: A Test of a Model," in Richard Rose, ed., *The Dynamics of Public Policy: A Comparative Analysis* (London: Sage, 1976), 113-36.

FIGURE 2  
CASEPLOTS OF MENTIONS OF NUCLEAR AND ACID RAIN ISSUES IN THE CANADIAN HOUSE OF COMMONS, 1977-1992



tions, ARIMA processes should be utilized rather than Ordinary Least Squares methods.<sup>30</sup>

TABLE 1

OLS AND ARIMA DIAGNOSTICS

	Durbin- Watson	First-order autocorrelation
<i>Nuclear issues</i>		
Hansard	1.327	0.333
Committee	1.265	0.367
Newspapers	1.003	0.494
Periodicals	1.580	0.209
<i>Acid rain issues</i>		
Hansard	0.985	0.506
Committee	1.190	0.401
Newspapers	1.046	0.472
Periodicals	1.921	0.038

The intention of this analysis is to develop accurate cross-correlations between various series in order to determine whether and to what extent series covary with each other. In the case of a test for Downsian issue-attention cycles, we are looking for a significant covariance of government and public agendas with a lag of at least one month between agendas, led by the public agenda.

In order to compute the cross-correlations between the institutional and systemic agenda required for this test, the ARIMA function for each series must be identified and estimated. After having been fitted, the residuals from each series are correlated in order to control for auto or serial correlation. Any trends identified should also be removed by differencing or some other technique in order to ensure that the series are stationary before the correlations are taken.

On the basis of an analysis of the Auto-correlation functions (ACF) and Partial autocorrelation functions (PACF) taken for each series, we conclude that the series containing data on nuclear-issue mentions in Hansard is an ARIMA (0,1,0) model, as are the series containing data on mentions of acid rain in Hansard and in newspapers,

30 Charles W. Ostrom, *Time Series Analysis: Regression Techniques* (Beverly Hills: Sage, 1990), 29; and C. Chatfield, *The Analysis of Time Series: An Introduction* (London: Chapman and Hall, 1992). See also Nathaniel Beck and Jonathan N. Katz, "What to Do (and Not to Do) with Time-Series-Cross-Section Data in Comparative Politics," *American Political Science Review* 89 (1995), 634-47.



and nuclear-issue mentions in committee. The series with data on nuclear-issue mentions in periodicals is an ARIMA (0,0,1) model as is the series with data on acid rain mentions in committee. The series containing data on nuclear mentions in newspapers is an ARIMA (1,0,0) model. Nuclear issues in committee approximates an ARIMA (2,0,0) model while acid rain mentions in periodicals is an ARIMA (0,0,2). All of the series are stationary and display no trend. Given these identifications, the ARIMA series were fitted and the residuals estimated.<sup>31</sup> Cross-correlations functions (CCFs) for these residuals generated the following results.

In Table 2-A the CCFs for within-group nuclear-issue series were estimated. We would expect to find a strong correlation between both Hansard and committee mentions and between newspaper and periodical mentions since items are routinely referred from the House of Commons to committees and newspaper stories are often the original source for subsequent periodical articles.

TABLE 2

## CROSS-CORRELATIONS OF MENTIONS OF NUCLEAR ISSUES

<i>A. Within parliamentary and mass media groups</i>					
In Hansard vs. in committee			In newspapers vs. in periodicals		
Lag	CCF	SE	Lag	CCF	SE
-7	-0.028	0.075	-7	-0.037	0.075
-6	0.022	0.075	-6	0.017	0.075
-5	-0.070	0.075	-5	0.001	0.075
-4	0.068	0.075	-4	0.041	0.075
-3	0.022	0.075	-3	0.057	0.075
-2	0.009	0.074	-2	-0.027	0.074
-1	0.138	0.074	-1	-0.053	0.074
0	0.261	0.074	0	0.220	0.074
1	-0.217	0.074	1	0.163	0.074
2	-0.184	0.074	2	0.009	0.074
3	-0.058	0.075	3	0.054	0.075
4	0.026	0.075	4	0.060	0.075
5	0.002	0.075	5	0.009	0.075
6	0.060	0.075	6	-0.017	0.075
7	0.101	0.075	7	-0.001	0.075

31 Leland Wilkinson, MaryAnn Hill and Erin Vang, *SYSTAT: Statistics, Version 5.2 Edition* (Evanston: SYSTAT, Inc., 1992).

TABLE 2—*Continued*

Lag	CCF	SE	Lag	CCF	SE
<i>B. Between Commons Debates (Hansard) and mass media groups</i>					
In Hansard vs. in newspapers			In Hansard vs. in periodicals		
-7	0.024	0.075	-7	0.078	0.075
-6	0.102	0.075	-6	0.045	0.075
-5	0.093	0.075	-5	0.070	0.075
-4	0.009	0.075	-4	0.136	0.075
-3	0.062	0.075	-3	0.092	0.075
-2	-0.048	0.074	-2	0.034	0.074
-1	0.100	0.074	-1	0.188	0.074
0	-0.037	0.074	0	0.057	0.074
1	-0.092	0.074	1	-0.087	0.074
2	0.031	0.074	2	-0.015	0.074
3	0.099	0.075	3	0.065	0.075
4	-0.009	0.075	4	0.094	0.075
5	-0.008	0.075	5	0.036	0.075
6	-0.034	0.075	6	0.135	0.075
7	-0.018	0.075	7	0.099	0.075
<i>C. Between Commons Committee Reports and mass media groups</i>					
In committee vs. in newspapers			In committee vs. in periodicals		
-7	-0.123	0.075	-7	0.042	0.075
-6	-0.026	0.075	-6	-0.015	0.075
-5	-0.020	0.075	-5	-0.099	0.075
-4	0.016	0.075	-4	0.058	0.075
-3	0.089	0.075	-3	-0.024	0.075
-2	-0.092	0.074	-2	-0.089	0.074
-1	0.014	0.074	-1	-0.061	0.074
0	0.037	0.074	0	0.008	0.074
1	0.031	0.074	1	0.080	0.074
2	-0.096	0.074	2	-0.070	0.074
3	0.028	0.075	3	-0.008	0.075
4	0.060	0.075	4	0.071	0.075
5	-0.005	0.075	5	-0.122	0.075
6	-0.046	0.075	6	0.103	0.075
7	0.066	0.075	7	-0.032	0.075

In both cases we might expect a slight lag to generate the highest correlation coefficients. The results do show sizable significant correlations, but the largest occur at no lag, indicating that whatever time relationship exists, it exists most strongly within a 30-day period. Nevertheless, these series do exhibit the expected general patterns of behaviour.

The main findings relevant to the test of the Downsian model in the case of nuclear issues are contained in Table 2-B.

Here we would expect, if Downs were correct, that a high correlation and a significant lag would exist between mentions in newspapers and periodicals and those in Hansard. However, the CCFs contained in Table 2-B show no such results. Both the correlations between Hansard mentions and newspaper mentions and Hansard mentions and periodical mentions are trivial and, with a handful of minor exceptions, statistically insignificant.

To be certain, the CCFs for nuclear issues in committees and those in newspapers and periodicals were also estimated and the results are found in Table 2-C. Again, if Downs were correct, one would expect to find a high correlation and a significant lag between issue mentions in newspapers and periodicals and those in parliamentary committee.

Once again, however, the CCFs between these series show only insignificant correlations existing between government and media attention on this particular policy issue.

Similar procedures were then applied to the four series dealing with acid rain issues. The results are presented in Table 3.

Table 3-A reveals that in the acid rain case, as with that of nuclear issues, the expected general relationship existing between Hansard and committee mentions and between those in daily print media and periodicals exists. That is, a slight lag of one 30-day period exists in the consideration of acid rain issues by committees and by periodicals, although many mentions continue to occur virtually simultaneously. However, this remains only a very weak relationship.

Table 3-B provides the results of the second set of key cross-correlations done in order to test the Downsian model in the case of acid rain. Again, we would expect to find a high, lagged correlation between the mention of acid rain issues in Hansard and mentions in either or both newspapers and periodicals if in fact the public were leading governmental deliberations.

As the results in Table 3-B show, however, as was the case with nuclear issues, the correlations generated in the acid rain case are very weak, although there does seem to be some weak evidence of newspapers leading Hansard at three-month intervals, and Hansard lagging periodical mentions at an interval of four months. These are offset, however, by negative correlations at leads of four and three months, respectively.

Once again, in order to be sure of this result, two additional correlations were carried out examining the relationships existing between committees and mentions of acid rain issues in newspapers and periodicals.

TABLE 3

CROSS-CORRELATIONS OF MENTIONS OF ACID RAIN ISSUES

<i>A. Within parliamentary and mass media groups</i>					
In Hansard vs. in committee			In newspapers vs. in periodicals		
Lag	CCF	SE	Lag	CCF	SE
-7	-0.112	0.075	-7	-0.015	0.075
-6	-0.076	0.075	-6	0.072	0.075
-5	0.184	0.075	-5	-0.071	0.075
-4	-0.065	0.075	-4	0.008	0.075
-3	0.024	0.075	-3	-0.021	0.075
-2	-0.139	0.074	-2	-0.084	0.074
-1	-0.059	0.074	-1	-0.192	0.074
0	-0.048	0.074	0	0.138	0.074
1	0.195	0.074	1	0.167	0.074
2	-0.001	0.074	2	-0.033	0.074
3	0.119	0.075	3	-0.017	0.075
4	-0.039	0.075	4	0.131	0.075
5	-0.090	0.075	5	-0.114	0.075
6	0.000	0.075	6	0.028	0.075
7	-0.051	0.075	7	0.060	0.075

<i>B. Between Commons Debates (Hansard) and mass media groups</i>					
In Hansard vs. in newspapers			In Hansard vs. in periodicals		
Lag	CCF	SE	Lag	CCF	SE
-7	0.069	0.075	-7	0.017	0.075
-6	-0.006	0.075	-6	0.067	0.075
-5	-0.060	0.075	-5	-0.109	0.075
-4	-0.143	0.075	-4	0.063	0.075
-3	0.107	0.075	-3	-0.134	0.075
-2	0.019	0.074	-2	-0.119	0.075
-1	-0.012	0.074	-1	0.007	0.074
0	0.100	0.074	0	0.051	0.074
1	0.097	0.074	1	0.113	0.074
2	-0.033	0.075	2	0.036	0.075
3	-0.048	0.075	3	-0.049	0.075
4	-0.027	0.075	4	0.142	0.075
5	-0.093	0.075	5	-0.007	0.075
6	0.062	0.075	6	0.006	0.075
7	-0.029	0.075	7	-0.055	0.075

TABLE 3—*Continued*

Lag	CCF	SE	Lag	CCF	SE
<i>C. Between Commons Committee Reports and mass media groups</i>					
In committee vs. in newspapers			In committee vs. in periodicals		
-7	0.122	0.075	-7	-0.069	0.075
-6	-0.155	0.075	-6	-0.082	0.075
-5	-0.003	0.075	-5	-0.117	0.075
-4	0.089	0.075	-4	-0.010	0.075
-3	0.052	0.075	-3	0.189	0.075
-2	-0.134	0.074	-2	-0.042	0.074
-1	0.204	0.074	-1	0.086	0.074
0	-0.051	0.074	0	0.149	0.074
1	-0.008	0.074	1	0.077	0.074
2	-0.080	0.074	2	0.030	0.074
3	0.117	0.075	3	0.022	0.075
4	-0.156	0.075	4	-0.018	0.075
5	0.066	0.075	5	0.048	0.075
6	-0.082	0.075	6	-0.039	0.075
7	-0.022	0.075	7	-0.057	0.075

As the results contained in Table 3-C show, this second set of correlations confirms the first set of findings. If anything, a weak correlation at a lead of one month between acid rain issues in committee and in newspapers suggests that committee mentions occur prior to newspaper coverage, reversing the expectations of a Downsian cycle. Even this minimal finding, however, is offset by weak negative correlations at various leads and lags.

In neither the case of nuclear issues nor of acid rain issues, then, do these results display the relationships hypothesized to prevail if Downsian issue-attention cycles exist. As we shall see, however, they do not rule out the possibility that some other type of cyclical behaviour may be present in the Canadian agenda-setting process.

#### *A Test of the Punctuated Equilibrium Model*

As was the case with Downs's model, very little independent empirical corroboration exists of the presence of Baumgartner and Jones-type punctuated equilibrium processes in public policy agenda-setting; either in the US or the comparative case. Some studies have attempted to look for qualitative evidence of such change processes,<sup>32</sup> but most

32 See, for example, Peter A. Hall, "Policy Paradigms, Social Learning and the State: The Case of Economic Policy Making in Britain," *Comparative Politics*

quantitative evidence comes from Baumgartner and Jones's own study.

Here the results of a large-scale, multi-year content analysis of US congressional committee hearings and major US newspapers are presented to support the punctuated equilibrium contention. The authors coded mentions of issues related to topics such as pesticides, smoking, alcohol and drug use, urban affairs, nuclear power, auto safety, and child abuse in 22,336 articles and 6,565 congressional hearings held on these subject over the period 1900-1990.<sup>33</sup>

While this database should have provided ample material from which to establish that a punctuated equilibrium process in fact was underway in the areas examined, the authors usually relied not upon quantitative evidence to make their case, but on qualitative interpretations of policy histories. In their statistical appendix, Baumgartner and Jones argued that this was because of their concern that fitting time series models to their data would suffer from a variety of statistical problems such as trend, heteroscedasticity and autocorrelation.<sup>34</sup>

Although most of these problems can be overcome with statistical manipulations of the data, Baumgartner and Jones argued that such efforts were unnecessary since the aim of such analysis would be forecasting and this would prove impossible given the nature of the changes expected to occur in a punctuated equilibrium model. As they put it:

The unpredictable surges and declines in agenda dynamics is the fundamental problem for time series modeling. In most cases, surges of issues on the agenda are preceded by slow softening up periods, but in others it is more sudden. Now a complex intervention model, either using regression or different ARIMA techniques could be developed, but such models would be different for each case, not a single theoretically based solution [and] . . . there is not more predictive power in that than in any other means of description.<sup>35</sup>

This concern with prediction is laudable, but somewhat misplaced. That is, the point of a time series analysis of their data should have been first to test their findings rather than attempt to predict the future on the basis of unproved suppositions. Although Baumgartner and Jones do go on to estimate some diagnostic statistics to indicate

25 (1993), 275-96. For an example of the application of this model to Canadian circumstances, see Michael Howlett, "Policy Paradigms and Policy Change: Lessons from the Old and New Canadian Policies towards Aboriginal Peoples," *Policy Studies Journal* 22 (1994), 631-52.

33 Baumgartner and Jones, *Agendas and Instability in American Politics*, Appendix A, Tables A.1 and A.2.

34 Ibid., Appendix B, 269-72.

35 Ibid., Appendix B, 270.

significant first-order autocorrelations at lags of five periods in their series, and undertake an intervention analysis comparing the effects of increased numbers of congressional hearings on government grants to combat drug abuse and urban affairs issues, this is not carried out in a systematic fashion across all of their issues and sources, and the findings are not well integrated into their analysis.

As such, although backed up by an impressive array of charts and statistics from a very extensive empirical study, the actual model derived in the book remains empirically unproven.

Once again, a better test of the punctuated equilibrium model can be constructed by examining data on issue mentions. This time, however, a different methodology must be used because what is important is not so much the relationship hypothesized to exist between the public and governmental agendas, but, rather, whether or not any regular cyclical patterns of issue mentions exist.

This is because Baumgartner and Jones are quite insistent that they do not subscribe to any kind of cyclical interpretation of agenda dynamics. As they put it in their conclusion:

The evidence presented in our book suggests support for a cyclical view of politics. In particular we observe a pattern of punctuated change. But we cannot subscribe to cycle theories of politics because we do not see links to political motivation and structures that imply cycling . . . there are certainly periods of rapid change, as we have shown again and again. However, we would make a mistake to conclude from this that politics is cyclical. A punctuated equilibrium model of the political system differs dramatically from the type of dynamic equilibrium model implicit in any discussion of cycles.<sup>36</sup>

Since Baumgartner and Jones insist that a punctuated equilibrium pattern is unpredictable and chaotic, one would expect an analysis of issue mentions in government to produce an extremely irregular pattern; approaching a “white noise” or random pattern of appearance and disappearance. If some other pattern is present, then this is *prima facie* evidence of the non-existence of a punctuated equilibrium process.

The same data are used for this test as for the test for Downsian processes. This is acceptable because not only do Baumgartner and Jones assert that all policies follow a punctuated equilibrium pattern of development and change, but both of the issues for which the series were collected represent the same types of issues tested for by Baumgartner and Jones—who included nuclear issues and pollution in their dataset. Only government mentions are examined because both the Downsian and Schattschneiderian strategies identified by Baumgartner

36 Ibid., 244-45.

and Jones ultimately result in increased mentions of an issue in the formal institutions of government.

Although the high autocorrelations cited in Table 1 provide some *prima facie* evidence that the series are not random, a more precise result can be generated through a spectral analysis of the series. In this procedure, each time series is transformed using Fourier equations which change patterns of high and low occurrences over time into fluctuations of magnitude and frequency—after having corrected for possible trend by transforming about the mean, and substituting for missing cases. A periodogram is then developed which compares the square of the magnitude to frequency. A sharp spike at an early frequency is typical of a regular sinusoidal wave. A flat line is typical of a random or “white noise” pattern.<sup>37</sup>

Smoothed periodograms, or spectral density plots, run on each of the series relating to government mentions reveal the following shapes for the spectral analysis of nuclear issues (see Figures 3-A and 3-B).<sup>38</sup> Both of these figures display the sharp low-frequency spike characteristic of modified sinusoidal cycles and not the flat line one would expect if issue mentions were random.

These same techniques were then applied to the acid rain series, and the results are presented in Figures 3-C and 3-D. Again, these plots reveal the same sharp spikes at low frequencies, characteristic of regular sinusoidal variations found in the case of the nuclear issue mentions.

Some evidence of cyclical activity is revealed by the spectral analysis. This does not accord with the expectation of a “white noise” pattern suggested by the punctuated equilibrium model.

### Conclusion: Modelling Canadian Agenda-Setting

Neither of the tests conducted above bears out the existence of either Downsian issue-attention cycles or Baumgartner and Jones-type punctuated equilibrium policy dynamics in Canada during 1977-1992 for the two policy issues examined.

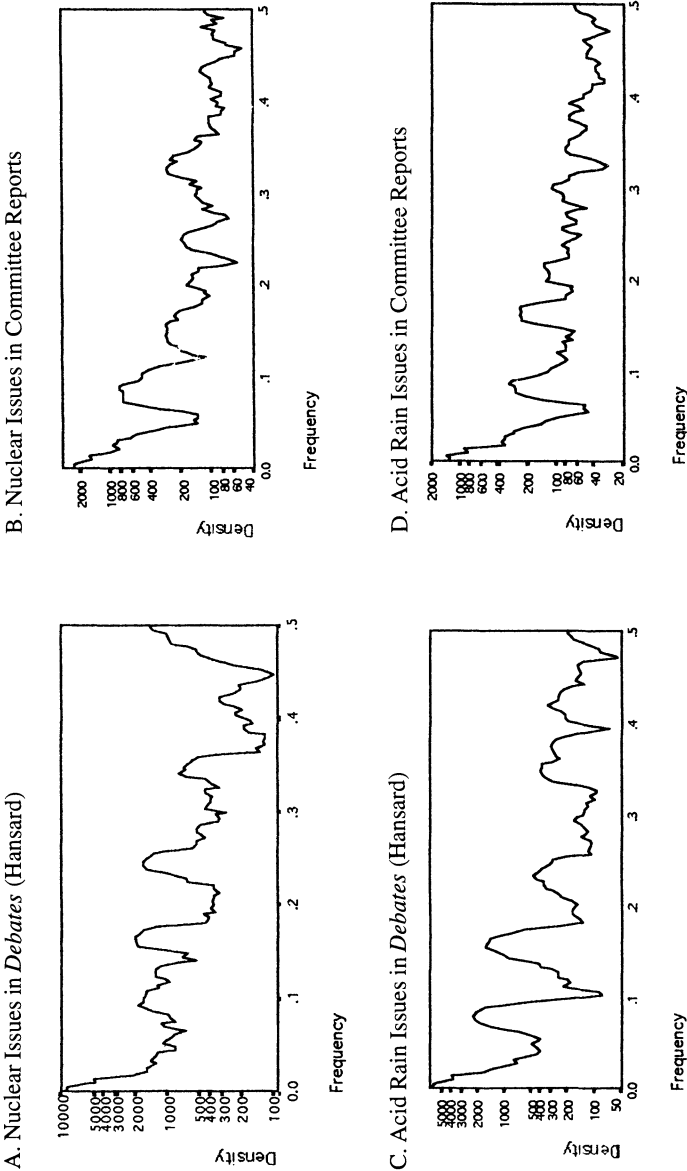
The analysis of cross-correlation coefficients comparing the occurrence of issue mentions on public and government agendas did not reveal the sizable lagged pattern one would expect if a Downsian

37 On spectral analysis, see Tony Thrall and Laszlo Engelman, “Univariate and Bivariate Spectral Analysis,” in W. J. Dixon, ed., *BMDP Statistical Software Manual* (Berkeley: University of California Press, 1988), Vol. 2, 971-1012; and John M. Gottman, *Time Series Analysis: A Comprehensive Introduction for Social Scientists* (Cambridge: Cambridge University Press, 1981).

38 Using the SPECTRA Procedure from *SPSS TRENDS*, these figures plot magnitude or density against frequency on a logarithmic scale. See *SPSS TRENDS 6.1* (Chicago: SPSS Inc., 1994).



FIGURE 3  
PERIDODGRAMS OF MENTIONS OF NUCLEAR AND ACID RAIN ISSUES IN THE CANADIAN HOUSE OF COMMONS



process was at work, although some very weak covariance was observable in the acid rain case. Similarly, the smooth periodograms developed in the spectral analysis revealed a more regular pattern of issue mentions than one would expect to find if a Baumgartner and Jones-type punctuated equilibrium process was present.

This finding, of course, does not rule out the possibility that such processes may be characteristic of other issue areas. However, it does represent a major difficulty for adherents of either model, since the issues investigated were those hypothesized by both sets of authors to represent "strong" cases of the two agenda-setting models.

The tests also generate several conclusions relevant to agenda-setting research and theorization. First, with respect to Downs's model, it is apparent that there is only weak and circumstantial evidence for the existence of issue-attention cycles in the US and even weaker evidence in the case of Canada. While further testing in different jurisdictions and over different issue areas would be needed to refute the Downsian hypothesis completely, it can be suggested on the basis of the existing findings that, at minimum, the model needs considerable refinement. That is, there is as much evidence from the Canadian data that the government agenda drives the public as there is for the reverse situation. It could be argued that this is due to the institutional structure of parliamentary regimes, which deliver extensive agenda-setting powers to governments by, among other things, curtailing public and media access to information. Future studies and tests of Downsian agenda-setting should attempt, at minimum, to control for this institutional variable.<sup>39</sup>

- 39 On the prominent role played by officials and politicians in the environmental agenda-setting process in Canada, see Kathryn Harrison and George Hoberg, "Setting the Environmental Agenda in Canada and the United States: The Cases of Dioxin and Radon," this JOURNAL 24 (1991), 3-27; Duncan K. MacLellan, "The Domestic Politics of the Federal-Provincial Eastern Canada Acid Rain Control Programme: A Case Study of Agenda Building," paper presented at the annual meeting of the Canadian Political Science Association, Calgary, 1994; and Douglas A. Smith, "Defining the Agenda for Environmental Protection," in Katherine A. Graham, ed., *How Ottawa Spends 1990-91: Tracking the Second Agenda* (Ottawa: Carleton University Press, 1990), 113-36. Cobb, Ross and Ross, of course, developed three different typical models of agenda-setting—the outside initiation model, the mobilization model and the inside initiation model—which they associated with particular types of political regime. See R. Cobb, J. K. Ross and M. H. Ross, "Agenda Building as a Comparative Political Process," *American Political Science Review* 70 (1976), 127-36. See also Cobb and Elder, *Participation in American Politics*, 85. On the continued relevance of Cobb's work to the area of the environment, see Leslie R. Alm and Charles Davis, "Agenda-Setting and Acid Precipitation in the United States," *Environmental Management* 17 (1993), 807-16. Baumgartner and Jones's recent emphasis on the role of US congressional committees in affecting policy image and venue types, of course, suggests that this element of the agenda-setting

Second, with respect to punctuated equilibrium models, future research efforts should try to take into account both the quantitative aspects of this model as well as its more qualitative side. That is, the findings of the present study involved the construction of a quantitative time series. However, it is conceivable that construction of a database which would capture the qualitative aspects of the punctuated equilibrium model might generate better results. If a punctuated equilibrium process is a more qualitative than quantitative construct, its nuances might escape the quantitative analysis of frequency of issue mentions set out above. Changes in the terms used to discuss, create, implement and evaluate policies, for example, might occur in a “stepped” manner which would remain largely invisible to an analysis utilizing data based on the frequency rather than on the content of mentions. In fact, it could be argued that to such an analysis a punctuated equilibrium process would appear not as “white noise” but as simply a periodic pattern of occurrences, much as was described by the spectral analysis set out above.

Finally, there is the key question raised by the study. That is, how do we account for the empirical evidence of issue mention cycles in Canada if they are not Downsian in nature? One hypothesis which deserves further study and analysis is suggested by the work of John Kingdon, and centres on the idea that institutionalized, and relatively regular, political events can drive policy cycles. In his own study of US policy making, Kingdon suggests that agenda-setting is ultimately governed by certain fortuitous happenings—including seemingly unrelated external events and accidents, the presence or absence of “policy entrepreneurs” both within and outside of governments—and, more significantly, by institutionalized events such as periodic elections or budgetary cycles.<sup>40</sup>

While the emphasis on random occurrences and events is negated by the results of the spectral analysis contained above, a pattern of policy windows opening and closing in accordance with institutionalized electoral and political cycles might well generate the pattern of policy activity identified in this preliminary study, and does not rely on questionable links between governments and their public in so doing.<sup>41</sup>

process would not “travel” across different political regime types. See Jeffrey C. Talbert, Bryan D. Jones and Frank R. Baumgartner, “Nonlegislative Hearings and Policy Change in Congress,” *American Journal of Political Science* 39 (1995), 383-406.

40 John W. Kingdon, *Agendas, Alternatives and Public Policies* (Boston: Little, Brown, 1984), 21.

41 On institutionalized political (electoral or budgetary) cycles, see Bruno S. Frey, “Politico-Economic Models and Cycles,” *Journal of Public Economics* 9 (1978), 203-20; Gareth Locksley, “The Political Business Cycle: Alternative Interpretations,” in Paul Whitely, ed., *Models of Political Economy* (London:

While Kingdon's model is not examined here, similar data and methodologies as those utilized above could be used to conduct intervention analyses of the effect of events such as elections and budgets on longitudinal time series, and help determine the plausibility of this hypothesis.<sup>42</sup> A reasonable hypothesis for future comparative policy studies to test would be that agenda-setting in "stronger" or more statist regimes would be more susceptible to institutionalized windows (electoral, budgetary) or the effects of links to other subsystems than would "weaker" or more de-centralized political regimes.

Sage Publications, 1980), 125-37; and especially Edward R. Tufte, *Political Control of the Economy* (Princeton: Princeton University Press, 1978). On the Canadian case, see David K. Foot, "Political Cycles, Economic Cycles and the Trend in Public Employment in Canada," in Meyer W. Bucovetsky, ed., *Studies in Public Employment and Compensation in Canada* (Toronto: Institute for Research on Public Policy, 1979), 65-80. For a critical review of this literature see Raford Boddy and James Crotty, "Class Conflict and Macro-Policy: The Political Business Cycle," *Review of Radical Political Economics* 7 (1975), 1-19.

- 42 See, for example, Brink Kerr and Kenneth R. Mladenka, "Does Politics Matter? A Time-Series Analysis of Minority Employment Patterns," *American Journal of Political Science* 38 (1994), 918-43.