

Do Networks Matter? Linking Policy Network Structure to Policy Outcomes: Evidence from Four Canadian Policy Sectors 1990-2000

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Introduction: Metaphors and Models in Policy Network Analysis

Policy network theory has become a major approach to the study of public policy making in Canada and elsewhere.¹ Thinking about policy making as involving more-or-less fluid sets of state and societal actors linked together by specific interest and resource relationships has emerged as a powerful tool in policy analysis, both from a theoretical and practical perspective. Conceptually, it has helped to address several important questions relating to the role of actors, ideas and

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- 1 On Canada, see Evert A. Lindquist, "New Agendas for Research on Policy Communities: Policy Analysis, Administration, and Governance," in L. Dobuzinskis, M. Howlett and D. Laycock, eds, *Policy Studies in Canada: The State of the Art* (Toronto: University of Toronto Press, 1996), 219-41. More generally, see Paul A. Sabatier, "Political Science and Public Policy: An Assessment," in William N. Dunn and Rita Mae Kelly, eds., *Advances in Policy Studies since 1950* (New Brunswick: Transaction, 1992), 27-58; and Mark Thatcher, "The Development of Policy Network Analyses: From Modest Origins to Overarching Frameworks," *Journal of Theoretical Politics* 10 (1998), 389-416.

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interests in policy-making processes. Organizing actors and institutions into identifiable sets of policy-relevant interactions has facilitated policy analysis by helping to transcend the limitations of purely behavioural or institutional modes of analysis which focus exclusively on structure or agency in their presuppositions and methodologies.² Practically, it has provided a model of the structure and operation of policy processes which governments and other policy actors can use to better design and affect outcomes.³

However, several key aspects and assumptions of network theory have come under increasing scrutiny. Most importantly from a policy studies perspective, the assumption underlying all network-based studies, that the characteristics of network structure affect policy processes and outcomes, has been challenged.⁴ This challenge has raised the question whether “networks matter” in the sense of being a significant variable helping to understand, explain and predict policy outcomes, as adherents of this approach attest, or if the characterization of policy actors and processes in network terms is simply a heuristic, useful for descriptive purposes but lacking analytical power.

There is some disagreement as to the actual content of the criticisms made, and whether or not they point to fundamental and insurmountable weaknesses in the network approach.⁵ However, there is

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- 2 David Knoke, “Networks as Political Glue: Explaining Public Policy-Making,” in W. J. Wilson, ed., *Sociology and the Public Agenda* (London: Sage, 1993), 164-84; and Erik-Hans Klijn and Joop F. M. Koppenjan, “Public Management and Policy Networks: Foundations of a Network Approach to Governance,” *Public Management* 2 (2000), 135-58.
 - 3 Johan A. de Bruijn and Ernst F. ten Heuvelhof, “Policy Networks and Governance,” in David L. Weimer ed., *Institutional Design* (Boston: Kluwer, 1995); and Hans Th. A. Bressers and Laurence J. O’Toole, “The Selection of Policy Instruments: A Network-based Perspective,” *Journal of Public Policy* 18 (1998), 213-39.
 - 4 Keith Dowding, “Model or Metaphor? A Critical Review of the Policy Network Approach,” *Political Studies* 43 (1995), 136-58; Mike Mills and Michael Saward, “All Very Well in Practice, But What about Theory? A Critique of the British Idea of Policy Networks,” *Contemporary Political Studies* 1 (1994), 79-92; and Hussein Kassim, “Policy Networks, Networks and European Union Policy Making: A Skeptical View,” *West European Politics* 17 (1994), 15-27.
 - 5 Keith Dowding has argued that policy network theory may be more of a metaphor than a model, useful more for descriptive purposes than for predicting or explaining specific patterns or propensities for policy change. While this criticism has begun a significant debate in the field, much of the debate itself has been polemical and lacking in empirical referents. See Franz Urban Pappi and Christian H. C. A. Henning, “Policy Networks: More Than A Metaphor,” *Journal of Theoretical Politics* 10 (1998), 553-75; and B. Guy Peters, “Policy Networks: Myth, Metaphor and Reality,” in D. Marsh, ed., *Comparing Policy Networks* (Buckingham: Open University Press, 1998), 21-32. More recently, see Keith Dowding, “There Must be End to Confusion: Policy Networks, Intellectual

Abstract. Relatively recent contributions to the policy literature have called into question the utility of the “network” approach to the study of public policy making, including a challenge to long-held views concerning the impact of the structure of policy subsystems on policy change. This article uses empirical evidence accumulated from case studies of four prominent Canadian federal policy sectors over the period 1990-2000 to address this issue. It sets out a model that explains policy change as dependent upon the effects of the articulation of ideas and interests in public policy processes, and generates several hypotheses relating different subsystem configurations to propensities for paradigmatic and intra-paradigmatic policy dynamics. It suggests that the identification of the nature of the policy subsystem in a given policy sector reveals a great deal about its propensity to respond to changes in ideas and interests.

Résumé. L’approche selon laquelle l’élaboration des politiques publiques est déterminée par des réseaux et le point de vue largement répandu qui veut que les structures des sous-systèmes des politiques publiques aient un impact sur le changement de ces dernières ont été remises en question par diverses contributions relativement récentes. En se fondant sur les données fournies par l’étude empirique de quatre secteurs des politiques fédérales canadiennes au cours de la période 1990-2000, cet article montre que le changement des politiques est déterminé par les effets combinés des idées et des intérêts qui sous-tendent les processus d’adoption des politiques publiques. Il propose plusieurs hypothèses quant à la propension de différentes configurations sub-systémiques à générer des dynamiques paradigmatiques et intra-paradigmatiques. Il montre qu’en identifiant la nature du sous-système d’une politique, dans un secteur donné des politiques publiques, il est possible de mieux connaître la propension de cette politique à répondre aux changements d’idées et d’intérêts.

general agreement that the relationship between network structure and policy outcomes should be the subject of much more systematic investigation than was often the case in past studies.⁶

This article discusses the manner in which structures of interest networks and discourse communities, or policy subsystems, affect the articulation of ideas and interests in public policy making. It proposes a model setting out how different subsystem configurations relate to particular paradigmatic and intra-paradigmatic processes of policy change, and suggests that specific configurations of subsystem membership and modes of interaction are directly linked to propensities for specific types of policy change. This hypothesis is tested against evidence accumulated from several case studies of policy change and the evolution of policy subsystems in four prominent Canadian federal policy sectors over the decade 1990-2000.

Fatigue, and the Need for Political Science Methods Courses in British Universities,” *Political Studies* 49 (2001), 89-105; and David Marsh and Martin J. Smith, “There is More Than One Way to Do Political Science: On Different Ways to Study Policy Networks,” *Political Studies* 49 (2001), 528-41.

6 Hans Bressers, Laurence J. O’Toole and Jeremy Richardson, “Networks as Models of Analysis: Water Policy in Comparative Perspective,” *Environmental Politics* 3 (1994), 1-23; and R. A. W. Rhodes, *Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability* (Buckingham: Open University, 1997).

The Link between Subsystem Structure and Policy Change in Policy Network Analysis

The concept of a "policy subsystem" was developed in the United States. on the basis of the observation that American federal interest groups, congressional committees and government agencies had developed systems of mutual support in the course of constant interaction over legislative and regulatory matters. The rigid, three-sided, relationships or "subgovernments" originally observed in areas such as agriculture, transportation and education were often dubbed "iron triangles" to capture the essence of their iron-clad control over many aspects of the policy process. They were often condemned for having "captured" the policy process, subverting the principles of popular democracy by ensuring that the self-interests of triangle members prevailed over those of the general public.⁷ Regardless of the merits of these arguments about the democratic nature of policy processes, however, an important aspect of these first studies was to highlight a significant relationship existing between subsystem structure and policy change. That is, rigid closed subsystems were closely associated with stable, routine, policy making in which outputs tended to incrementally advance the interests of subsystem members.⁸

This link between subsystem structure, policy process and, ultimately, policy outcomes was further bolstered by subsequent studies in the 1960s and 1970s which uncovered an alternative form of subsystem and associated it with a different set of policy dynamics. Research by Hugh Heclo and others revealed that iron triangle-type subgovernments were not omnipresent and that policy subsystems varied across issues and over time. In particular, a more flexible and less rigid type of subsystem, the "issue network," was identified and, it was argued, was becoming much more common in Washington.⁹ This

7 Douglas Cater, *Power in Washington: A Critical Look at Today's Struggle in the Nation's Capital* (New York: Random House, 1964); and Theodore Lowi, *The End of Liberalism: Ideology, Policy and the Crisis of Public Authority* (New York: Norton, 1969).

8 Marver H. Bernstein, *Regulating Business by Independent Commission* (Princeton: Princeton University Press, 1955); and Samuel P. Huntington, "The Marasmus of the ICC: The Commissions, the Railroads and the Public Interest," *Yale Law Review* 61 (1952), 467-509.

9 Hugh Heclo, "Issue Networks and the Executive Establishment," in Anthony King, ed., *The New American Political System* (Washington DC: American Enterprise Institute for Public Policy Research, 1978), 87-124; and Thomas L. Gais, Mark A. Peterson and Jack L. Walker, "Interest Groups, Iron Triangles and Representative Institutions in American National Government," *British Journal of Political Science* 14 (1984), 161-85. See also Michael T. Hayes, "The Semi-Sovereign Pressure Groups: A Critique of Current Theory and an Alternative Typology," *Journal of Politics* 40 (1978), 134-61; and Randall B. Ripley and Grace A.

type of subsystem was associated with a different, more open, characteristic policy process and a propensity for the adoption of more innovative policies than was typically found in sectors dominated by iron triangles.

Both the American and European studies which followed upon this work in the 1980s and 1990s utilized this basic spectrum of subsystem types and its association of different types of subsystems with different policy dynamics.¹⁰ While the different origins of, and terminologies employed in, these studies caused some confusion and misunderstanding,¹¹ all suggested the utility for policy analysis of conceiving of the range of actors and institutions involved in policy making in network terms. Subsystems were seen to range from "open" to "closed," or highly to poorly "cohesive," in terms of their membership and institutional linkages and boundaries, with open subsystems associated with dynamic and innovative policy outcomes and closed subsystems with an incremental or status quo orientation.¹² The net-

Franklin, *Congress, the Bureaucracy, and Public Policy* (Homewood: Dorsey Press, 1980).

- 10 Many works taken under the rubric of the "advocacy coalition framework," "neo-institutionalism" and "policy community" studies in the 1980s and 1990s utilized this basic typology of subsystem policy dynamics. Studies in Europe focused on the analysis of networks as a new empirical phenomenon, emerging out of the wreckage of national corporatist arrangements in the new Europe. Those in the US concerned with advancing pluralist thought to incorporate long-term patterns of state-societal interactions did much the same thing, while similar concepts and terms arose out of studies of transnational patterns of policy making and the interaction of elites at the international level. On US studies, see Edward O. Laumann and David Knoke, *The Organizational State: Social Choice in National Policy Domains* (Madison: University of Wisconsin Press, 1987); Paul A. Sabatier and Hank C. Jenkins-Smith, "The Advocacy Coalition Framework: Assessment, Revisions, and Implications for Scholars and Practitioners," in Paul A. Sabatier and Hank C. Jenkins-Smith, eds., *Policy Change and Learning: An Advocacy Coalition Approach* (Boulder: Westview, 1993); and Frank Baumgartner and Bryan Jones, *Agendas and Instability in American Politics* (Chicago: University of Chicago Press, 1993). For European examples, see B. Marin and R. Mayntz, eds., *Policy Networks: Empirical Evidence and Theoretical Considerations* (Boulder: Westview Press, 1991); Rhodes, *Understanding Governance*; and W. J. M. Kickert, E-H. Klijn and J. F. M. Koppenjan, eds., *Managing Complex Networks: Strategies for the Public Sector* (London: Sage, 1997). At the international level, see Peter M. Haas, "Introduction: Epistemic Communities and International Policy Co-ordination," *International Organization* 46 (1992), 1-36.
- 11 See A. Grant Jordan, "Iron Triangles, Woolly Corporatism and Elastic Nets: Images of the Policy Process," *Journal of Public Policy* 1 (1981), 95-123; and Tanja A. Borzel, "Organizing Babylon—On the Different Conceptions of Policy Networks," *Public Administration* 76 (1998), 253-73.
- 12 See R. A. W. Rhodes and David Marsh. "New Directions in the Study of Policy Networks." *European Journal of Political Research* 21 (1992), 181-205; Mar-

work approach came with a ready toolbox of analytical tools and methods borrowed from sociologically inspired social network analysis,¹³ and after 1980 many political scientists and sociologists in Canada and elsewhere turned to studying policy actors and institutions using these methods.¹⁴

Many students of policy making found the subsystem approach useful in overcoming problems with earlier approaches—such as Marxism, pluralism or corporatism—which unnecessarily reified social relations or ignored institutional and structural variables in their analyses. However, the network approach was not without conceptual and methodological problems of its own, and by the mid-1990s some of its central tenets and hypotheses began to be called into question. Specifically, critics such as Keith Dowding argued that network studies tended to be overly descriptive and somewhat tautological in their reasoning and analysis. Although not denying that the network perspective could provide a useful heuristic for students of policy making, it was asserted, among other things, that the links alleged to exist between subsystem structure and policy outcomes were not proven. Without better empirical evaluation, it was argued, contemporary debates over terminology promised to yield little in the way of additional explanatory power or conceptual integration. If the network approach was to move beyond metaphor, it was posited, network studies had to move beyond thick description and classification, and

tin J. Smith, *Pressure, Power and Policy: State Autonomy and Policy Networks in Britain and the United States* (Aldershot: Harvester Wheatsheaf, 1993); and Carsten Daugbjerg, "Policy Networks and Agricultural Policy Reforms: Explaining Deregulation in Sweden and Re-regulation in the European Community," *Governance* 10 (1997), 123-42.

- 13 On the sociological tradition, see Alvin W. Wolfe, "The Rise of Network Thinking in Anthropology," *Social Networks* 1 (1978), 53-64; and Barry Wellman, "Structural Analysis: From Method and Metaphor to Theory and Substance," in B. Wellman and S. D. Berkowitz, eds., *Social Structures: A Network Approach* (New York: Cambridge University Press, 1988), 19-61. See also, Ronald E. Rice and William D. Richards. "An Overview of Network Analysis Methods and Programs," in B. Dervin and M. J. Voight, eds., *Progress in Communication Sciences*, Vol. 6 (Norwood: Ablex, 1985), 105-65.
- 14 In Canada see, for example, Susan Phillips, "Meaning and Structure in Social Movements: Mapping the Network of National Canadian Women's Organizations," this JOURNAL 24 (1991), 755-82; and William Coleman and Grace Skogstad, eds., *Policy Communities and Public Policies in Canada* (Toronto: Copp Clark, 1990). Prominent studies in the United States include David Knoke, *Political Networks: The Structural Perspective* (Cambridge: Cambridge University Press, 1990); and John P. Heinz et al., *The Hollow Core: Private Interests in National Policy Making* (Cambridge: Harvard University Press, 1993). Elsewhere, see P. Le Gales and M. Thatcher, eds., *Les Réseaux de Politique Publique*, (Paris: Editions L'Harmattan, 1995).

demonstrate that structural aspects of political life actually had a predictable effect on policy outcomes.¹⁵

Testing the Impact of Subsystem Structure on Policy Outcomes: The Elements of an Operational Model of Policy Subsystem Configurations and Policy Change

If subsystem structure affects policy outcomes then, at minimum, in inspecting specific policy sectors over some fairly long period of time, one would expect to find some correlation between changes in policy outcomes and changes in subsystem structure. As Sabatier and Jenkins-Smith suggested, conducting such a demonstration involves measuring policy change and subsystem change in specific sectors over at least a decade and comparing the record or pattern of changes in policy subsystems with the record of changes in policy outcomes.¹⁶ While this sounds simple enough, conducting such a test first requires clarifying several outstanding definitional questions pertaining to the nature of differences in network structures and the description of policy change; and the development of an operational model or theory hypothesizing specific linkages between specific types of policy change and specific types of policy subsystems.

Operationalizing Policy Change

Constructing an operational model of policy change begins with the observation that most policies made by governments are, for the most part and most of the time, in some way a continuation of past policies and practices. Even what are often portrayed as “new” policy initiatives are often simply variations on existing practices.¹⁷ That is, in normal circumstances, a policy problem or issue will be dealt with by reference to an existing practice, or in what has been described by many as in a marginal or “incremental” fashion.¹⁸ This pattern of piecemeal policy change is the stuff of “normal” policy making.

Similarly, it has also been observed that a second less frequent pattern of policy change involves the more dramatic re-conceptualization and re-structuring of policy. This type of policy change is usually

15 Dowding, “Model or Metaphor.”

16 Paul Sabatier, “Policy Change Over A Decade or More,” in P. A. Sabatier and H. C. Jenkins-Smith, eds., *Policy Change and Learning: An Advocacy Coalition Approach* (Boulder: Westview, 1993), 13-40.

17 Nelson W. Polsby, *Political Innovation in America: The Politics of Policy Initiation* (New Haven: Yale University Press, 1984).

18 Charles Lindblom, “The Science of Muddling Through,” *Public Administration Review* 19 (1959), 79-88. More generally, see Michael T. Hayes, *Incrementalism and Public Policy* (New York: Longmans, 1992).

described in the literature as “paradigmatic.”¹⁹ Overall, paradigmatic change is seen as involving periods of stability and incremental adaptations interspersed by periods of revolutionary upheaval, resulting in what has often been referred to as a “punctuated equilibrium” pattern of policy dynamics.²⁰

A useful way to look at these different basic types of policy change has been suggested by Durrant and Diehl.²¹ Analogizing from work on patterns and processes of evolutionary change in paleobiology, they have argued that policy change has two components. Policies can vary not only in terms of the mode of change—between the normal pattern of piecemeal incremental change and the pattern of paradigmatic change mentioned above—but also in terms of the tempo or speed of change. This model suggests (see Table 1) that paradigmatic change, although infrequent, can be either rapid²² or slow.²³ The same is true for incremental change which can occur at either tempo.

The predominance of a “normal” pattern of relatively gradual incremental policy change has usually been explained by reference to the fact that the same set of actors and ideas are involved in the policy

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- 19 Baumgartner and Jones, *Agendas and Instability in American Politics*. Peter Hall defines a policy paradigm as establishing “the broad goals behind policy, the related problems or puzzles that policy makers have to solve to get there, and, in large measure, the kind of instruments that can be used to attain these goals” (Peter A. Hall, “Policy Paradigms, Experts, and the State: The Case of Macroeconomic Policy-Making in Britain,” in Stephen Brooks and Alain-G Gagnon, eds., *Social Scientists, Policy, and the State* [New York: Praeger, 1990], 59).
- 20 Connie J. G. Gersick, “Revolutionary Change Theories: A Multilevel Exploration of the Punctuated Equilibrium Paradigm,” *Academy of Management Review* 16 (1991), 10-36; and Niles Eldredge and Stephen Jay Gould, “Punctuated Equilibria: An Alternative to Phyletic Gradualism,” in Thomas J. M. Schopf ed., *Paleobiology* (San Francisco: Freeman, Cooper, 1972), 82-115.
- 21 See Robert F. Durrant and Paul F. Diehl, “Agendas, Alternatives and Public Policy: Lessons From the U.S. Foreign Policy Arena,” *Journal of Public Policy* 9 (1989), 179-205.
- 22 This is the usual way that paradigmatic policy change is thought to occur. See Peter Hall, “Policy Paradigms, Social Learning and the State: The Case of Economic Policy-Making in Britain,” *Comparative Politics* 25 (1993), 275-96; and Peter A. Hall, “The Change from Keynesianism to Monetarism: Institutional Analysis and British Economic Policy in the 1970s,” in Sven Steinmo, Kathleen Thelen and Frank Longstreth eds., *Structuring Politics: Historical Institutionalism in Comparative Analysis* (Cambridge: Cambridge University Press, 1992), 90-114.
- 23 Empirical evidence of such processes has been generated in diverse areas such as agricultural and Aboriginal policy, among others. See Michael Howlett, “Policy Paradigms and Policy Change: Lessons From the Old and New Canadian Policies Towards Aboriginal Peoples,” *Policy Studies Journal* 22 (1994), 631-51; and William D. Coleman, Grace D. Skogstad and Michael M. Atkinson, “Paradigm Shifts and Policy Networks: Cumulative Change in Agriculture,” *Journal of Public Policy* 16 (1996), 273-302.

TABLE 1

A Basic Taxonomy of Policy Change by Mode and Speed of Change

| Mode of Change | Speed of Change | |
|----------------|--------------------|----------------------|
| | Fast | Slow |
| Paradigmatic | Rapid Paradigmatic | Gradual Paradigmatic |
| Normal | Rapid Incremental | Gradual Incremental |

Source: Adapted from Robert F. Durrant and Paul F. Diehl, “Agendas, Alternatives and Public Policy: Lessons from the U.S. Foreign Policy Arena,” *Journal of Public Policy* 9 (1989), 179-205.

process over a long period of time.²⁴ Observers have often noted how in the course of interaction among themselves and in their day-to-day dealings with a public problem, policy makers tend to develop a common episteme²⁵ or way of looking at, and dealing with, a problem. Slight adaptation and adjustment of views on the basis of experience and new information is endemic to the policy process, but most studies have found that understandings of the nature of public problems and the acceptable or feasible solutions to them are often remarkably durable and, once in place, are difficult to change.²⁶ This common understanding obtaining in a policy subsystem, however, can at times break down, setting the stage for the emergence of new and different policy discourses, consideration of new policy options and, ultimately, innovative policy outcomes.

The reasons behind the infrequency of such paradigmatic policy change—whether rapid or gradual—are not well understood. However, a strong trend in the policy literature has been to discuss paradigmatic policy change as occurring as a result of the activities of specialized policy actors reacting to discordances or discrepancies between

24 This is not a new insight, of course. The analysis of incremental decision making, for example, attributes a propensity for policy change to occur as a result of analysis of the marginal differences between existing and proposed policy options to the fact that the same sets of policy makers bargain among themselves to arrive at a decision, and are unlikely to overturn agreements based on past negotiations and compromises. See Michael T. Hayes, *Incrementalism and Public Policy*.

25 Patrick Kenis, “The Pre-Conditions for Policy Networks: Some Findings from a Three Country Study on Industrial Re-Structuring,” in B. Marin and R. Mayntz, eds., *Policy Networks: Empirical Evidence and Theoretical Considerations* (Boulder: Westview Press, 1991), 297-330. See also, Haas, “Introduction” and Paul A. Sabatier, “An Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning Therein,” *Policy Sciences* 21 (1988), 129-68.

26 Paul Pierson, “Increasing Returns, Path Dependence, and the Study of Politics,” *American Political Science Review* 94 (2000), 251-67; and Sabatier, “An Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning Therein.”

events on the ground and their theorization within the dominant paradigm. That is, much as was argued by Thomas Kuhn and others in the case of the advance of scientific knowledge,²⁷ the discovery of “anomalies,” or events and activities not expected or understandable in terms of prevalent theories, allows innovative actors—“policy entrepreneurs”—to respond to changing circumstances and their own ambitions by introducing new ideas into the policy milieu.²⁸ These new actors are often seen as engaged in a struggle with established ones, who usually resist the introduction of non-paradigmatic ideas and defend the status quo or, at least, attempt to limit changes to those compatible with existing arrangements.²⁹

Thus explanations of observed patterns of policy change highlight the role played by both ideas and interests in this process. That is, a change in the episteme or knowledge base of policy ideas, for example, can result in either rapid or slow paradigmatic policy change depending on whether the second condition—a change in key actors/interests—is also present. Without a change in ideas, policy change will be incremental, but its tempo will also be determined by whether or not new actors or interests have been introduced into policy processes.³⁰ This means that the expected types of change featured in

27 Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962); and Thomas S. Kuhn, “Second Thoughts on Paradigms,” in F. Suppe, eds., *The Structure of Scientific Theories* (Urbana: University of Illinois, 1974), 459-82.

28 On the role of anomalies in policy making, see Hall, “Policy Paradigms, Social Learning and the State: The Case of Economic Policy Making in Britain.” On the role of policy entrepreneurs, see John Kingdon, *Agendas, Alternatives and Public Policies* (New York: HarperCollins, 1984); Michael Mintron, “Policy Entrepreneurs and the Diffusion of Innovation,” *American Journal of Political Science* 41 (1997), 738-70; and Nancy C. Roberts and Paula J. King, “Policy Entrepreneurs: Their Activity Structure and Function in the Policy Process,” *Journal of Public Administration Research and Theory* 1 (1991), 147-75.

29 Fiona Nunan, “Policy Network Transformation: The Implementation of the EC Directive on Packaging and Packaging Waste,” *Public Administration* 77 (1999), 621-38; Michael Howlett and Jeremy Rayner, “Do Ideas Matter? Policy Subsystem Configurations and the Continuing Conflict over Canadian Forest Policy,” *Canadian Public Administration* 38 (1995), 382-410; and Hank C. Jenkins-Smith, Gilbert K. St. Clair and Brian Woods, “Explaining Change in Policy Subsystems: Analysis of Coalition Stability and Defection over Time,” *American Journal of Political Science* 35 (1991), 851-80.

30 Generally, see Dietmar Braun, “Interests or Ideas? An Overview of Ideational Concepts in Public Policy Research,” in D. Braun and A. Busch, eds., *Public Policy and Political Ideas* (Cheltenham: Edward Elgar, 1999), 11-29. This analysis has been supported by many case studies. See, for example, Hugh Pemberton, “Policy Networks and Policy Learning: UK Economic Policy in the 1960s and 1970s,” *Public Administration* 78 (2000), 771-92; George Hoberg, “Putting Ideas in Their Place: A Response to ‘Learning and Change in the British

Table 1 can be rewritten substituting the entrance of new ideas for “mode of change” and the entrance of new actors for “speed of change.”

This initial step helps to operationalize part of a basic model of policy change. However, it still does not provide any indication of how policy change should be assessed. What constitutes “paradigmatic” and incremental change? What differentiates “gradual” from rapid paradigmatic, or gradual from rapid incremental, change? And how can these be measured? In answering these questions it is helpful to consider the popular threefold conception of policy change put forward by Peter Hall in his work on economic policy change in Britain.³¹ Hall identified three different types of change: *first-order* change in which only the settings of policy instruments vary; *second-order* change in which change occurs in the basic types or categories of instruments used to effect policy; and *third-order* change in which the goals of policy are altered.³² While useful, some of this terminology is confusing and should be changed, while the logic of the model also suggests that there should be four basic types of change, not three. With respect to terminology, the use of the term “settings” to describe first-order change can be confusing, since most uses of the term would lead one to consider the location of a policy instrument within a policy environment, when Hall means to describe the calibration or fine-tuning of an instrument’s content or component parts. More significantly, Hall’s model is based on distinguishing between the means and ends of policy making and between abstract and concrete aspects of policy outputs.³³ Given these two dimensions, four distinct categories of policy change are possible, not three.³⁴ These can

Columbia Forest Policy Sector,” this JOURNAL 29 (1996), 135-44; Anne Daguette, “Policy Networks in England and France: The Case of Child Care Policy 1980-1989,” *Journal of European Public Policy* 7 (2000), 244-60; and Vivien A. Schmidt, “The Politics of Economic Adjustment in France and Britain: When Does Discourse Matter?” *Journal of European Public Policy* 8 (2001), 247-64.

31 Hall, “Policy Paradigms, Social Learning and the State.”

32 Examples of first-order changes in a health sector, for example, would include altering staffing levels in hospitals or altering physician fee schedules. Second-order changes would involve changing the type of instrument used to deliver health care such as moving from user fees to mandatory insurance arrangements. Third-order change would involve a shift in policy goals, such as moving away from a bio-medical focus on the individual to a more holistic goal of collective, social or community well-being. See *ibid.*

33 John L. Campbell, “Institutional Analysis and the Role of Ideas in Political Economy,” *Theory and Society* 27 (1998), 377-409.

34 For similar models based on a similar critique of Hall, see Daugbjerg, “Policy Networks and Agricultural Policy Reforms”; and Adrian Smith, “Policy Networks and Advocacy Coalitions: Explaining Policy Change and Stability in UK Industrial Pollution Policy?” *Environment and Planning C: Government and Policy* 18 (2000), 95-114.

be described as changes related to abstract *policy goals* or more concrete *programme specifications*, referring to the ends of policy making; and to basic *policy instrument type* or genus, as opposed to alterations of existing *instrument components*, when discussing changes in policy means.

Combining the discussion of actors and ideas above with the four basic types of potential policy change identified above allows the creation of a fully operational model of policy change. That is, rapid paradigmatic change can be thought of as featuring changes in policy goals and gradual paradigmatic change as featuring changes in programme specifications. Changes in instrument type would be characteristic of rapid incremental change, while gradual incremental change would feature changes in instrument components or "settings." Rewriting Table 1 in this vein generates the model set out in Table 2.

TABLE 2
An Operationalized Model of Policy Change

| Entrance of new ideas | | Entrance of new actors | |
|--------------------------|-------------------------|--------------------------|----|
| | | Yes | No |
| Yes | Policy Goals | Programme Specifications | |
| No | Policy Instrument types | Instrument Components | |

Operationalizing Policy Subsystems

The second requirement of the analysis of the impact of subsystem structure on policy change, of course, is a similarly operational model of significant differences in subsystem structures which can be linked to the former through the specification of clear, testable propositions or hypotheses concerning the impact of structure on outcomes. Unfortunately, there is no generally accepted model of subsystem structure, as there has been a distinct penchant in the literature for incompatible ad hoc categorizations to be developed inductively from the results of empirical case studies.³⁵ Critics such as Dowding and Borzel, and also adherents like Evert Lindquist, R. A. W. Rhodes and David Marsh, have all criticized the needless

35 See Frans Van Waarden, "Dimensions and Types of Policy Networks," *European Journal of Political Research* 21 (1992), 29-52; and Borzel, "Organizing Babylon."

“proliferation of concepts attempting to capture different kinds of communities, networks and associations that often intersect, overlap or operate at different levels of analysis.”³⁶

It is important to note, however, that this concern is not with taxonomy construction, per se, but with the construction of taxonomies whose purposes are unclear and whose categories are neither exhaustive nor mutually exclusive. With respect to developing a test of the effect of policy subsystems on policy change, it is possible to utilize a relatively simple model which relates basic subsystem types to the two central variables thought to lie behind fundamental policy dynamics: the presence or absence of new ideas and new actors in policy deliberations. Doing so generates the simple taxonomy found in Table 3. Relating these basic types to propensities for specific types of policy change requires operationalizing the four basic subsystem variants in terms of their different structural characteristics.

TABLE 3
Basic Policy Subsystem Configurations

| | Receptive to new actors | |
|------------------------|-------------------------|---------------------|
| | No | Yes |
| Receptive to new ideas | Closed Subsystem | Resistant Subsystem |
| | Contested Subsystem | Open Subsystem |

Source: Adapted from Michael Howlett and M. Ramesh, “Policy Subsystem Configurations and Policy Change: Operationalizing the Postpositivist Analysis of the Politics of the Policy Process,” *Policy Studies Journal* 26 (1998), 466-82.

In this regard, an important insight generated by numerous empirical studies is that subsystems tend to have two types of members, those involved on a day-to-day basis in policy deliberations and actions and those whose activities are generally less prominent within the network and whose links to other network members are less frequent or “dense.”³⁷ Thus a major element of the conception of the

36 Lindquist, “New Agendas for Research on Policy Communities,” 219. See also David Marsh and R. A. W. Rhodes. “Policy Communities and Issue Networks: Beyond Typology,” in D. Marsh and R. A. W. Rhodes, eds., *Policy Networks in British Government* (Oxford: Clarendon, 1992), 248-268; and David Marsh, “The Utility and Future of Policy Network Analysis,” in D. Marsh, ed., *Comparing Policy Networks*, 185-98.

37 Generally, see Frans N. Stokman and Evelien P.H. Zeggelink, “Is Politics Power or Policy Oriented? A Comparative Analysis of Dynamic Access Models in Pol-

structure of policy subsystems involves viewing them as composed of two interrelated subsets of all the actors potentially present in the policy "universe."³⁸ The larger set of actors is composed of those who have some knowledge of the policy issue in question and who collectively construct a policy discourse within a *discourse community*.³⁹ A subset within this larger, knowledge-based, grouping is composed of those participants who participate in exchange relationships with each other, an *interest network*.⁴⁰

There are several advantages to distinguishing in this manner among levels or groupings of actors in policy subsystems. At the conceptual level, this distinction allows the integration in network analysis of knowledge and interests as two unevenly distributed sets of motivations guiding the actions of policy actors and subsystem members. By associating a discourse community with actors grouped around a specific knowledge base and an interest network with actors interacting in the pursuit of their interests, the impact of these two different aspects of subsystem membership and activity come into sharper focus. Moreover, at a more practical level, a workable taxonomy of policy subsystems can be built upon this distinction, one which can be directly linked to specific hypotheses about the propensities of different subsystems for specific types of policy change. That is, an important aspect of the "cohesiveness" or "closedness" of policy subsystems, identified in earlier studies as a key dimension of subsystem structure related to policy change, is the nature of the relationship

icy Networks," in P. Doreian and F. N. Stokman, eds., *Evolution of Social Networks* (Amsterdam: Gordon and Breach Science, 1997), 93-127. For empirical examples, see Volker Schneider, "The Structure of Policy Networks: A Comparison of the 'Chemicals Control' and 'Telecommunications' Policy Domains in Germany," *European Journal of Political Research* 21 (1992), 109-29; and Carsten Daugbjerg and David Marsh, "Explaining Policy Outcomes: Integrating the Policy Network Approach with Macro-Level and Micro-Level Analysis," in D. Marsh, ed., *Comparing Policy Networks*, 52-71.

38 Paul Pross, *Group Politics and Public Policy* (Toronto: Oxford University Press, 1992).

39 On discourse communities, see Otto Singer, "Policy Communities and Discourse Coalitions," *Knowledge: Creation, Diffusion, Utilization* 11 (1990), 428-58; Harriet Bulkley, "Discourse Coalitions and the Australian Climate Change Policy Network," *Environment and Planning C: Government and Policy* 18 (2000), 727-48; and Andrew Chadwick, "Studying Political Ideas: A Public Political Discourse Approach," *Political Studies* 48 (2000), 283-301.

40 On interest networks, see Franz U. Pappi and Christian H. C. A. Henning, "The Organization of Influence on the EC's Common Agricultural Policy: A Network Approach," *European Journal of Political Research* 36 (1999), 257-81; and Franz Urban Pappi and David Knoke, "Political Exchange in the German and American Labor Policy Domains," in Marin and Mayntz, eds., *Policy Networks*, 179-208.

existing between the discourse community and the interest network.⁴¹ Subsystems which feature closely integrated communities and networks will be more cohesive, and better able to resist the entrance of new ideas and actors into policy processes than will those which feature sizable distances between the two subsets of actors.

Although this insight is similar to that used in earlier studies to generate a simple spectrum or continuum of subsystem types—ranging from “integrated” to “unintegrated” and usually related to a single variable such as subsystem size—these did not fully capture the complexity of subsystem structure.⁴² Rather, there are two important dimensions of subsystem structure and issue network—discourse community configurations which affect “cohesiveness.” First, in an absolute sense, the potential for new actors to move from the community to the network is dependent on the degree of “*symmetry*,” or the extent of overlap between the network and the community, existing in the subsystem. Subsystems which feature a relatively small interest network within a much larger discourse community will, all other things being equal, be more susceptible to new actors than will those featuring very little distance between the two component parts. Second, regardless of the overall size of the subsystem and its components, the extent to which an interest network is *insulated* from its associated discourse community will also be a significant factor in understanding the extent to which new ideas can move between the community and network or, for that matter, between the policy universe and the community.

Examining the degree of symmetry and the extent of insulation between network and community allows an operational model of sub-

41 For an excellent case study which makes this point, see Bulkley, “Discourse Coalition and the Australian Climate Change Policy Network.” More generally, see L. Schaap and M. J. W. van Twist, “The Dynamics of Closedness in Networks,” in Kickert, Klijn and Koppenjan, eds., *Managing Complex Networks: Strategies for the Public Sector*, 62-78.

42 David Marsh and R. A. W. Rhodes, “Policy Communities and Issue Networks: Beyond Typology,” in D. Marsh and R. A. W. Rhodes, eds., *Policy Networks in British Government* (Oxford: Clarendon, 1992), 248-68. While it is common to associate small subsystems with integration and large ones with incohesiveness, many studies have shown that small subsystems can exhibit unintegrated communities and networks, while being large, similarly, does not prevent subsystems from being unified and cohesive. See, for example, Nikolaos Zahariadis and Christopher S. Allen, “Ideas, Networks, and Policy Streams: Privatization in Britain and Germany,” *Policy Studies Review* 14 (1995), 71-98; Mark Giuliani, “‘Soft’ Institutions for Hard Problems: Instituting Air Pollution Policies in Three Italian Regions,” in W. Grant, A. Perl and P. Knoepfel, eds., *The Politics of Improving Urban Air Quality* (Cheltenham: Edward Elgar, 1999), 31-51; and Hanspeter Kriesi and Maya Jegen, “The Swiss Energy Policy Elite: The Actor Constellation of a Policy Domain in Transition,” *European Journal of Political Research* 39 (2001), 251-87.

system structure to be developed which can be linked to propensities for the different types of policy change. Table 4 rewrites the four main subsystem configurations listed in Table 3, focusing on these two dimensions of community-network structure.

TABLE 4
Preliminary Operationalizing of Policy Subsystem Configurations

| Extent of symmetry between community and network | Network's degree of insulation from community | |
|--|--|---------------------|
| | High | Low |
| High | Closed Subsystem | Resistant Subsystem |
| Low | Contested Subsystem | Open Subsystem |

Linking Subsystem Configurations to Policy Change

In the case of "closed" subsystems, the distinction between community and network almost disappears, as the network is virtually synonymous with those actors involved in exchange relationships and the boundary between the two is at its greatest. This represents the classic, highly stable, "cohesive" subsystem described in the early network literature. Given the limitations this places on the flow of actors and ideas into policy processes, one would expect this kind of subsystem to be the most stable, and therefore to tend towards a propensity to develop only limited forms of changes in policy outputs, such as changes in policy instrument components or "settings." At the opposite extreme, an "open" subsystem is one in which there is the greatest space between discourse community and interest network, and the boundaries between the two are the most easily penetrable. In this case, one would anticipate the possibility of all different kinds of changes in policy outputs occurring, including changes in policy goals.

In between are the two cases which exist when the gap between network and community is small but the boundary between the two groups is easily crossed—the "resistant" subsystem—and that where there is a large difference between the two units but the boundary between them is thick—the "contested" subsystem. In the former, one would expect changes to be restricted largely to instrument components, but with some experimentation involving program specifications, as some new ideas about policy goals could penetrate across subsystem boundaries but would be dealt with largely by existing actors. In the latter, thick bound-

aries would prevent the consideration of new goals but contestation might lead to some experimentation with new policy instrument types.

Table 5 illustrates how the four main subsystem configurations set out in Table 4 would be expected to be related to the specific types of policy change outlined in Table 2.

TABLE 5
Hypothesized Relationship Existing between Policy Subsystem Configurations and Propensity for Specific Types of Changes in Policy Outputs

| Extent of symmetry between community and network | Degree of insulation of network from community | |
|--|--|---|
| | High | Low |
| High | Closed Subsystem tends towards change only in <i>Instrument Components</i> | Resistant Subsystem tends towards change only in <i>Instrument Components</i> and <i>Programme Specifications</i> |
| Low | Contested Subsystem tends towards change only in <i>Policy Instrument Types</i> and <i>Instrument Components</i> | Open Subsystem tends toward change in <i>Instrument Components</i> , <i>Programme Specifications</i> , <i>Policy Instrument Types</i> and <i>Policy Goals</i> |

Given this analysis of policy change, subsystem structure and their inter-relationships, therefore, the following hypotheses can be formulated with respect to the impact of subsystem structure on policy change:

Hypothesis H1: As has been argued in the past, subsystems that are asymmetrical and have thin boundaries between their component parts will be open to new actors, hospitable to fresh ideas and, hence, more likely to develop changes in policy goals than are those which are highly symmetrical and well insulated. These latter subsystems will be closed and inhospitable to new actors and ideas, and will tend to exhibit only changes in policy instrument components or “settings.”

Hypothesis H2: Subsystems which have symmetrical issue networks and discourse communities but whose boundaries are fluid will be open to new ideas but dominated by the same actors; thus they will tend to feature changes in instrument components and program specifications.

Hypothesis H3: Subsystems which have asymmetrical issue networks and discourse communities but whose boundaries are fixed will be open to new actors but will tend to be dominated by the same set of ideas, hence they will tend to feature change in instrument types and components.

Testing the Model: Empirical Evidence from Four Canadian Cases 1990-2000

Methodology

Although a complete analysis of these effects would require extensive longitudinal analysis of subsystem membership and interactions based on primary interview data, it is possible to construct a simple preliminary test of the viability of this model from existing secondary data sources.⁴³

The first step in this preliminary test, selecting cases for analysis, was determined by a number of criteria. First, existing analyses of associational behaviour suggested factors such as the extent of state involvement play a large role affecting the range of social actors found in a subsystem and its level of organizational development. In order to control for this variable, a range of domains should be examined with different levels of state involvement and institutionalization.⁴⁴ Second, given the potential for comparative research, case selection included examples of cases already examined in other countries using similar methodologies. A third criterion was the ease of availability of current and historical data on subsystem composition and membership. Taking these criteria into account, the subsystems which were chosen for examination in this project at the federal level in Canada were: transport, trade, education and banking. These sectors provide a basis for comparison of older, highly institutionalized, sectors—transportation, banking—and newer, or less well institutionalized, sectors—trade, education—and a basis for comparisons with studies completed in other countries—trade, banking.

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- 43 This methodology does not allow for direct evaluation of all of the aspects of the models set out above, especially that related to the significance of the strengths of ties between subsystem members or the specific nature or content of the ideas held by specific actors. For examples of this kind of analysis see Gerrit Jan Zijlstra, "Networks in Public Policy: Nuclear Energy in the Netherlands," *Social Networks* 1 (1978/79), 359-89; Lars-Erik Gadde, and Lars-Gunnar Mattson. "Stability and Change in Network Relationships," *International Journal of Marketing* 4 (1987), 29-41; and Laumann and Knoke, *The Organizational State*.
- 44 Philippe C. Schmitter and Wolfgang Streeck, *The Organization of Business Interests: Studying the Associative Action of Business in Advanced Industrial Societies* (Cologne: Max Planck Institute for the Study of Societies, 1999).

To avoid overgeneralizing a sector or policy domain and predetermining vague subsystem boundaries,⁴⁵ a two-stage strategy was followed in which a large multi-issue sector was examined and then a specific, significant issue selected upon which to focus the analysis. These investigations led to a focus on four specific subsystems centred upon *airline deregulation* (transport), *continental free trade* (trade), *post-secondary funding* (education) and *bank de-regulation* (banking). Events and occurrences in these areas were examined for the period 1990-2000 and chronologies of policy change were prepared. Policy changes revealed in these chronologies were then classified according to the fourfold taxonomy set out above. The highlights of these chronologies are contained in the Appendix.

In order to identify subsystem changes, each issue area was examined in order to assess subsystem membership at the start and end points of the period under investigation. Following the insights and methodologies set out by Grace Skogstad and Leslie Pal in earlier investigations, instances where groups and individuals were encouraged and funded to present briefs to parliamentary committees and to relevant commissions and inquiries in the domains under examination were selected for this purpose.⁴⁶ "Bookend" situations, which could reasonably be expected to reveal a large percentage of subsystem members, were identified and analyzed in terms of changes in membership and activities over the decade. The dimension of subsystem *insulation* was assessed by examining the number of repeat members of the subsystem present in the total membership at the end of the period; with a high percentage of continuing members indicative of a high degree of insulation. The dimension of *symmetry* was gauged

45 This is, in itself, a somewhat contentious issue since there is no clear, accepted, definition of a policy "domain" available in the policy literature. See Paul Burstein, "Policy Domains: Organization, Culture and Policy Outcomes," *Annual Review of Sociology* 17 (1991), 327-50; and Daniel Hosseus and Leslie A. Pal, "Anatomy of a Policy Area: The Case of Shipping," *Canadian Public Policy* 23 (1997), 399-416. Problems with different domain definitions have been apparent in sociologically inspired network analyses and feature prominently, for example, in the debate surrounding the "hollow core" versus "inner circle" models found in this literature. See, for example, John P. Heinz et al., "Inner Circles or Hollow Cores," *Journal of Politics* 52 (1990), 356-90; and Gwen Moore, "The Structure of a National Elite Network," *American Sociological Review* 44 (1979), 673-92.

46 Grace Skogstad, "Interest Groups, Representation and Conflict Management in the Standing Committees of the House of Commons," this JOURNAL 18 (1985), 739-72; and Leslie A. Pal, "Advocacy Organizations and Legislative Politics: The Effects of the Charter of Rights and Freedoms on Interest Lobbying of Federal Legislation, 1989-1991," in F. L. Seidle, ed., *Equity and Community: The Charter, Interest Advocacy and Representation* (Montreal: Institute for Research on Public Policy, 1993), 119-57.

simply in terms of the percentage increase in the number of subsystem members over time, with a large positive increase indicating a low level of symmetry. The sources on membership changes are also set out in the Appendix. Summary figures are provided in Table 6 by membership category type.

The results from these analyses of policy and subsystem membership changes over the period 1990-2000 were then compared in order to establish the nature of the relationship existing between subsystem structure and policy change in each case.⁴⁷ The overall picture with respect to the frequency and nature of policy changes in each sector over the decade under investigation is contained in Table 7.

Analysis

Prima facie, the pattern of change found in Table 7 is in keeping with expectations concerning the (in)frequency of paradigmatic change involving shifts in policy goals and programme specifications, relative to the frequency of incremental changes involving shifts in instrument types and components. That is, in the four sectors under investigation only 6 instances of changes in policy ends occurred over the decade, while 56 instances of changes in basic instrument type or instrument components were found.

Changes in policy subsystem structure over the same period are found in Table 8. Overall, these data reveal a common pattern of substantial fluctuations in subsystem membership. However, they also reveal different patterns of change by sector. Two of the sectors, post-secondary education and banking, had the most significant increases in membership and the lowest percentage of original 1990 members remaining in the 2000 subsystem. Transport and trade, on the other hand, decreased in size and had the highest percentage of original members.

From these results, two principal conclusions can be drawn. First, there was considerable subsystem membership change in each sector. However, the sectors differed in the direction of change, some growing substantially and others shrinking. Second, the membership of the sectors differed with some retaining a solid core of members while in others their original membership component shrank. This generates the overall pattern presented in Table 9.

47 Case studies which utilize a similar methodology include Pascal Sciarini, "Elaboration of the Swiss Agricultural Policy for the GATT Negotiations: A Network Analysis," *Swiss Journal of Sociology*, 22 (1986), 85-115; Nunan, "Policy Network Transformation"; and Joshua Bernard Forrest, "The Drought Policy Bureaucracy, Decentralization, and Policy Networks in Post-Apartheid Namibia," *American Review of Public Administration* 30 (2000), 307-33.

TABLE 6
Subsystem Membership Change by Sector and Organization Type, 1990-2000

| Organization Type | Transport | | Trade | | Education | | Banking | | Total |
|---------------------|-----------|-----|-------|-----|-----------|-----|---------|-----|-------|
| | Start | End | Start | End | Start | End | Start | End | |
| Government | 17 | 6 | 3 | 8 | 5 | 17 | 3 | 15 | 74 |
| Industry groups | 21 | 13 | 19 | 14 | 4 | 18 | 6 | 33 | 128 |
| NGO | 1 | 6 | 18 | 6 | 6 | 15 | 1 | 12 | 65 |
| Foreign governments | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Consultants | 0 | 0 | 4 | 1 | 0 | 1 | 0 | 1 | 2 |
| Academic/Think tank | 8 | 8 | 11 | 10 | 3 | 2 | 0 | 5 | 47 |
| Corporate actors | 20 | 22 | 8 | 1 | 3 | 5 | 1 | 51 | 111 |
| Unions/Associations | 0 | 0 | 14 | 2 | 1 | 10 | 0 | 0 | 27 |
| Individuals | 0 | 0 | 0 | 4 | 0 | 32 | 0 | 20 | 56 |
| First Nations | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Political parties | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| Totals | 68 | 55 | 85 | 46 | 22 | 102 | 11 | 137 | 521 |

TABLE 7
Policy Change by Sector, 1990-2000

| | Policy Goals | Change Type | | Instrument Components | Total |
|-----------|--------------|--------------------------|------------------|-----------------------|-------|
| | | Programme Specifications | Instrument Types | | |
| Transport | 0 | 0 | 8 | 7 | 15 |
| Trade | 0 | 0 | 5 | 0 | 5 |
| Education | 0 | 2 | 3 | 6 | 11 |
| Banking | 1 | 2 | 1 | 5 | 9 |
| Total | 1 | 4 | 17 | 18 | 40 |

TABLE 8
Subsystem Change by Sector, 1990-2000

| | Original Size | End Size | Change Type | | Remaining Original Members as Percentage of End Size |
|-----------|---------------|----------|------------------------------|--------------------------------------|--|
| | | | Percent Change from Original | Number of Original Members Remaining | |
| Transport | 68 | 55 | -19 | 15 | 27 |
| Trade | 85 | 46 | -46 | 9 | 20 |
| Education | 22 | 102 | +363 | 8 | 8 |
| Banking | 11 | 137 | +1145 | 6 | 4 |

As Table 9 indicates, given the nature of changes in subsystem structure over this decade, if the hypothesized relationships between structure and outputs hold, we would expect changes in transport and trade to be limited to instrument types and components, while the post-secondary education and banking sectors would also change in policy goals and programme specifications.

The key questions in the assessment of the relationship between subsystem structure and policy change are shown in Table 10. The hypothesized expectation was for changes in the relationships between issue networks and their communities to be closely correlated with specific types of policy change, as new members and new ideas flowed into subsystem deliberations and altered exchange relationships within networks. The expected relationships between changes in subsystem structure and policy outputs were found to exist in all of the cases examined here, as changes in policy goals and programme specifications occurred only in the two sectors which had substantial growth

TABLE 9
Actual Subsystem Change 1990-2000 and Predicted Policy Output Changes

| | Actual Pattern of Subsystem Change | | | Subsystem Change Type | Expected Type of Policy Change |
|-----------|---|--|--|-----------------------|---|
| | Expansion/ Contraction (Symmetry) | Membership Continuity (Insulation) | Changes in Subsystem Characteristics | | |
| Transport | -19 | 27 | Increased symmetry, high insulation | Contested to Closed | Instrument Types and Components |
| Trade | -46 | 20 | Increased symmetry, high insulation | Contested to Closed | Instrument Types and Components |
| Education | +363 | 8 | Decreased symmetry, low insulation | Resistant to Open | Policy Goals and Programme Specifications |
| Banking | +1145 | 4 | Decreased symmetry, low insulation | Resistant to Open | Policy Goals and Programme Specifications |

TABLE 10
 Predicted and Actual Policy Output Changes, 1990-2000

| | Policy changes | | Expected vs actual pattern of subsystem and policy change | |
|-----------|---|--------------------------------|--|--------------|
| | Policy Goals and Programme Specifications | Instrument Type and Components | Expected | Actual |
| Transport | 0 | 15 | Instrument Type and Components | As predicted |
| Trade | 0 | 5 | Instrument Type and Components | As predicted |
| Education | 2 | 9 | Policy Goals and Programme Specifications in Addition to Instrument Types and Components | As predicted |
| Banking | 3 | 6 | Policy Goals and Programme Specifications in Addition to Instrument Types and Components | As predicted |

and had the smallest continuity among core subsystem membership. Sectors with decreases in subsystem size and a high percentage continuity in membership had only alterations in instruments types and components.

Conclusion

The notion of a policy subsystem is a flexible concept designed to capture the complex interplay between actors and institutions, and knowledge and interests, in the policy-making process. It is a critical component of many modern approaches to the study of policy making such as discourse and network analysis, providing as it does the “glue” linking actors, ideas and interests together in models of policy processes and choices.⁴⁸ Network analyses are also becoming an increasingly significant aspect of governmental praxis as planning and policy design move further and further from coercive centralized methods towards the more flexible and complex public management strategies characteristic of the current era of governance.⁴⁹

A challenge to any of the cornerstones of network analysis has both significant conceptual and practical implications. If network structure affects outcomes in predictable ways, as proponents of this approach attest, then, for example, government efforts at network management can be directed towards specific outcomes and such activities should be an important part of policy design considerations. However, if a network is merely a metaphor to describe actor interrelationships, without any predictable impact on policy outcomes, then network management efforts may not only be inefficient, but misplaced, and further theoretical and conceptual development in this area, misguided.

Based on a preliminary analysis of secondary data sources of subsystem membership and output changes in four Canadian federal policy sectors, this article found evidence that, in contradiction to the assertions of some prominent critics, subsystem structure was correlated with specific types of policy change. The evidence presented above supports the assertion that subsystem structure is important because when the same core sets of policy actors are involved in defining policy options, the common understanding of a policy problem and the solutions they develop from shared experiences, combined with the durability of subsystem members’ interests, promotes “incre-

48 Knoke, “Networks as Political Glue.”

49 Michael Howlett, “Managing the ‘Hollow State’: Procedural Policy Instruments and Modern Governance,” *Canadian Public Administration* 43 (2000), 412-31; and Milward H. Brinton and Keith G. Provan, “Governing the Hollow State,” *Journal of Public Administration Research and Theory* 10 (2000), 359-80.

mental” change. Paradigmatic policy changes representing a significant, though not necessarily total, break from the past policy goals and programme specifications, on the other hand, was found to have occurred only when new ideas and interests could penetrate policy subsystems. More precisely, this article provided evidence that these patterns of policy change are linked to two specific structural characteristics of policy subsystems, both related to the manner in which discourse communities and interest networks interact within a subsystem. These two dimensions of subsystem structure—the degree of insulation of the network from non-“interest-related” actors, and the extent of symmetry existing between communities and networks—proved to be significant inhibitors and facilitators of policy change.

This analysis, then, provides support for the arguments of adherents of the network approach to policy studies. It suggests that the presence of a specific kind of network in a given policy sector reveals a great deal about the propensity for it to experience intra or inter-paradigmatic types of policy change. Hence the evidence from the four Canadian cases examined here suggests that “networks do matter,” and that continued research in this vein can fruitfully contribute to addressing questions and issues raised in the study and practice of modern governance.

Appendix: Data Sources and Summaries

1. Federal Transport (Airline De-regulation)

Policy Change

Policy Goals

Pre-1990: The federal government wants a new legislative framework for Canadian transportation that will minimize government control over shippers and carriers while ensuring that the public interest is met. Competition will be emphasized. Dispute resolution will be streamlined and made less cumbersome. A new regulatory agency will be smaller and more accessible. The emphasis will be on providing transportation services at the lowest possible cost, subject only to the overriding priority of a high level of safety. The thrust of these proposals, reliance on competition and market forces rather than regulations, is clearly the wave of the future.

Programme Specifications

Pre-1990: Divestiture and leasing of air operations, transforming the role of government from owner/subsidizer/operator to landlord/regulator; implementation of an aviation policy process that is transparent,

accessible; economic restructuring, privatization and commercialization of Canada's air navigation system; expansion in domestic and international air services and routes-globalization of airways; government deregulation in regards to domestic licensing criteria, domestic tariffs, and confidential private contracts in air industry.

Instrument Types

1992: National Airports Policy.

1994: *Airport Transfer Act 1992* (Misc. Acts).

1995: International Air Policy Initiatives.

1995: Various "Open Skies Agreements" (most notably with the United States).

1995: Bilateral International Air Relations with various countries.

1996: *Civil Air Navigation Services Commercialization Act*.

1996: *National Transportation Act/Canadian Transportation Act, 1996*.

1988-2000: Privatization of Air Canada and its subsequent merger with Canadian Airlines.

Instrument Components

1994-1997: National Airport Policy plans to commercialize as many as 149 airports under the jurisdiction of Transport Canada; to ensure smooth implementation of the National Airports Policy, the federal government introduced measures in 1996 to allow greater flexibility in the negotiation of lease arrangements with Canadian Airport Authorities, such as payment plans for movable property and rent-free periods for smaller airports. In addition, the government announced that the Airports Capital Assistance Program would be made available to some subsidized airports—this was not previously the case—and would assist eligible airports in financing capital projects related not only to safety, but also to asset protection and operating cost reduction.

1994: Establishment of the Open Skies Agreement and the International Air Policy Initiatives (December 1994). Expansion of domestic and international air services.

1996: Creation of a new regulatory agency—the Canadian Transportation Agency (formerly known as the National Transportation Agency).

1997: The federal government put into place a four-year Aviation Fuel Excise Tax Rebate Program under which airline companies carrying on business in Canada would be able to obtain a rebate of up to \$20 million a year on aviation fuel excise taxes. In exchange they

would give up their entitlement to claim losses against income subject to tax, for up to \$10 of their accumulated tax losses for every \$1 of rebate received. In addition, companies could later choose to repay the rebate received and fully reinstate the losses they had previously exchanged.

1998: NavCanada two-stage implementation of fee structure.

1998: More frequent use of code-sharing with foreign alliance partners, which allows Canadian carriers a presence in a vastly increased number of markets without having to provide their own aircraft.

Sources: Donald Mazankowski, *Freedom to Move: A Framework for Regulatory Reform* (Ottawa: Supply and Services Canada, 1985); Mary R. Brooks, *Monitoring Transportation Regulatory Reform* (Oceans Institute of Canada, 1988); *Transportation in Canada: Annual Review* (Ottawa: Public Works and Government Services Canada, various years); *Sustainable Transportation in Canada* (National Roundtable on the Environment and the Economy, 1996); Transport Canada, "Transport Canada's Planning Outlook to the Mid 1980s" (Strategic Planning Group, September 1981); John Christopher, "Background Paper: Transportation Issues In Canada" (Ottawa: Supply and Services Canada, 1992 and 1994); Transport Canada, *Strategic Plan for Transportation Safety and Security*, 1999 (http://www.tc.gc.ca/tcss/main_e.htm); and Transport Canada, *Sustainable Development Strategy 1997* (<http://www.tc.gc.ca/en/ap.htm>).

Network Structure

Sources: Canada, House of Commons, Special Committee on Canada-United States Air Transport Services, *Minutes of Proceedings and Evidence*, Ottawa: Queen's Printer 1990-1991, 34 Parl. Session 2, 1990; and Canada, House of Commons, Report of the Standing Committee on Transport, *Restructuring Canada's Airline Industry: Fostering Competition and Protecting the Public Interest*, December 1999.

2. Federal Trade (Continental Free Trade)

Policy Change

Policy Goals

Pre-1990: Trade liberalization.

Programme Specifications

Pre-1990: Extension of trade liberalization through multilateral and bilateral agreements.

Instrument Types

1993: Signing of North American Free Trade Agreement.

1994: Revising the norms of the international economic regime through World Trade Organization.

1996: Signing of international treaties on extra-North American free trade—Israel.

1997: Signing of international treaties on extra-North American free trade—Chile.

1998: Signing of the Multilateral Agreement on Investment (MAI).

Instrument Components

Pre-1990: Establishment of tariff reducing treaties with quasi-judicial dispute arbitration.

Sources: Department of Foreign Affairs and International Trade, “Trade Negotiations and Agreements” (<http://www.dfait-maeci.ca/tna-nac/menu-e.asp>); World Trade Organization, “Trade Policy Review. Canada” (Geneva: WTO, 1990, 1992, 1994, 1996, 1998, 2000).

Network Structure

Sources: Canada, House of Commons, Minutes of Proceedings and Evidence of the Sub-Committee on International Trade of the Standing Committee on External Affairs and International Trade Respecting Business of the Sub-Committee Pursuant to Standing Order 108(2), *Consideration of the Current GATT Negotiations*, June and October 1991; Canada, Department of External Affairs and International Trade, *Public Consultation on FTAA and WTO Negotiations*, May 20, 1999.

3. Federal-Provincial Post-Secondary Education (Funding)

Policy Change

Policy Goals

Pre-1990: Post-secondary education should be accessible and affordable for all Canadians.

Programme Specifications

1995: *Canada Financial Assistance Act* introduced. The federal government entered into risk-share agreement with nine lending institutions for the financing and delivery of student assistance.

1996: *Bankruptcy and Insolvency Act* amended. Students are unable to include their Canada Student Loan in a bankruptcy proceeding within two years after completing studies.

Instrument Types

1993: Introduction of interest subsidy for full time students with Canadian Student Loans.

1996: Federal government introduced the Canada Health and Social Transfer (CHST) to replace all existing transfer programs for post secondary education, health care and social assistance.

1996: Canada Millennium Scholarship Program introduced. The programme aims to increase access by defraying (through a \$2,000 scholarship) some of the costs of post-secondary education.

Instrument Components

1990: Federal government announced that the amount of the Established Programs Financing per capita cash transfer would be frozen for all provinces—to be frozen for a two-year period but later extended for three additional years.

1994: Federal loan limit for full-time students increased from \$110 per week to \$165 per week.

1995: Interest Relief Plan amended. Interest relief benefits extended from 18 months to a maximum of 30 months for borrowers with Canada Student Loans.

1998: CHST funding level increases during this period reflect commitment of federal government to address the severe challenges facing the health care and provincial education systems.

1998: Interest Relief Plan amended by adjusting income thresholds in the eligibility criteria, thus allowing more borrowers to benefit.

1998: *Bankruptcy and Insolvency Act* amended. Students are unable to include their Canada Student Loan in a bankruptcy proceeding within 10 years after completing studies.

Sources: Canadian Federation of Students, *A Blueprint for Access: An Alternative for Accessible, High Quality Post Secondary Education*. (Ottawa: CFS, 1997); Finance Canada, “Federal Transfers to the Provinces and Territories” (www.fin.gc.ca/FEDPROV/hise.html);

David C. Smith, *Programs of the Canada Millennium Scholarship Foundation: Issues, Options and Suggested Directions*. December 1998; Statistics Canada, *Education Quarterly Review*, 5, 4 (1999); Paul Boothe, "Finding a Balance: Renewing Canadian Fiscal Federalism," (C. D. Howe Institute Benefactors Lecture, Toronto, 1998); and Canada Millennium Scholarship Foundation, "Millennium Scholarships" (<http://www.millenniumscholarships.ca>).

Network Structure

Sources: Canada, House of Commons, *Report of the Standing Committee on National Finance, Federal Policy on Post-Secondary Education*, March 1987; and Canada, Senate. Special Senate Committee on Post-Secondary Education, *A Senate Report on Post-Secondary Education in Canada, 1997* (<http://www.parl.gc.ca/36/1/parlbus/commbu/yc/com-e/post-e/rep-e/repfinaldec97-e.htm>).

4. Federal Banking (De-regulation)

Policy Change

Policy Goals

1995: While general market stability and consumer/liability protections were the crucial concerns in the past, in the 1990s competitiveness and efficiency emerged as the dominant goals.

Programme Specifications

1992: *Bank Act* amended. The 1992 amendments, which involved a substantial re-write of the *Bank Act*, continued the process of dissolving the traditional pillars of federal banking policy by erasing many of the limitations on financial service providers' right to offer services outside of their domain either through the purchase of subsidiaries already active in other sectors or in some cases directly through new "in-house" powers.

1998-1999: The legislation of new rules which allow foreign banks to operate branches in Canada directly (which was announced in the 1997 changes to the *Bank Act*) were finally tabled and passed.

Instrument Types

1996: Two advisory bodies were formed to help direct future changes to the financial services sector: The Payments System Advisory Committee and the Payments System Advisory Committee (est. August 1996) which was co-chaired by the Department of Finance and the Bank of Canada.

Instrument Components

1992: Banks could now own insurance companies.

1992: Widely held non-bank financial service providers (trust companies, schedule II banks without the required 10-year divestiture) were now allowed to “network” different financial services offered by subsidiary or parent companies.

1992: Trust, loan and life insurance companies now had full consumer and commercial lending powers (which only banks had in the past). Reciprocally, a two-year phase-out was announced for the non-interest-bearing reserves that banks were required to hold but other financial service providers were not. Also banks could now offer portfolio management and investment advice directly.

1994: The non-interest-bearing reserve requirement for banks was eliminated as per the 1992 amendments to the *Bank Act*. Under the terms of the North American Free Trade Agreement, size restrictions on foreign bank operations were lifted for Mexican banks.

1997: *Bank Act* amended for a second time in the decade as required by the five-year sunset clause implemented in 1987. The changes intended to “fine tune” and extend the changes made in 1992: several new provisions designed to protect consumer privacy. Banks not engaged in retail deposit-taking were now allowed to opt out of membership in the deposit insurance agency.

Sources: Charles Freedman, “The Canadian Banking System,” revised version of a paper delivered at the Conference on Developments in the Financial System: National and International Perspectives, The Jerome Levy Economics Institute of Bard College, New York, 1997; Charles Freedman, “Financial Structure in Canada: The Movement Towards Universal Banking,” in A. Saunders and I. Winter, eds., *Universal Banking: Financial System Design Reconsidered* (Chicago: Irwin Professional Publishing, 1996), 724-36; Charles Freedman, “Universal Banking: The Canadian View,” in D. Vittas, ed., *Financial Regulation; Changing the Rules of the Game* (Washington: World Bank, 1992), 369-90; and Charles Freedman and Charles Goodlet, “The Financial Services Sector: Past Changes and Future Prospects,” background paper for the Ditchley Canada Conference, Toronto, 1997.

Network Structure

Sources: Canada, House of Commons Sub-Committee on Financial Institutions Legislation of the Standing Committee on Finance, *Minutes of Proceedings and Evidence of the Sub-Committee on Financial Institutions Legislation of the Standing Committee on Finance* (Ottawa: Queen’s Printer 1991-1993); and Canada, Senate, Report of the Stand-

ing Senate Committee on Banking, Trade and Commerce, “A Blueprint for Change: Response to the Report of the Task Force on the Future of the Canadian Financial Sector” (<http://www.parl.gc.ca/36/1/parlbus/commbus/senate/com-e/bank-e/rep-e/rep17dec98-e.htm>).