INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

**A Transaction Cost Theory of Policy Networks:
With Application to the *Lobbyists Registration Act* and
the Licensing of rbST in Canada**

by

Mark R. MacDonald, B.Sc., M.A.

A thesis submitted to
the Faculty of Graduate Studies
in partial fulfillment of
the requirements for the degree of

Doctor of Philosophy

Carleton University
Ottawa, Ontario
November 12, 1998
© copyright
1998, Mark R. MacDonald

National Library
of Canada

Acquisitions and
Bibliographic Services

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale
du Canada

Acquisitions et
services bibliographiques

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-37073-9

Canada

The undersigned hereby recommend to
the Faculty of Graduate Studies and Research
acceptance of this thesis,

**“A Transaction Cost Theory of Policy Networks:
with Application to the *Lobbyists Registration Act* and
the Licensing of rbST in Canada”**

Submitted by
Mark MacDonald, B.Sc.Hons., M.A.
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

Director, School of Public Administration

Thesis Supervisor

Carleton University

January, 1999

Abstract

The dissertation comprises a theoretical and empirical examination of policy networks from a transaction cost perspective. I argue that in an exchange environment characterized by positive transaction costs, intendedly rational actors will be forced to govern both formal and informal contractual relations against potential opportunism. In the context of competitive electoral systems, the legislator's general problem can thus be viewed as one of designing appropriate governance mechanisms for the procurement of vote-productive policy resources used to make expected vote maximizing public policy.

I develop a transaction cost theory of policy networks against this general backdrop in three main parts. First, I advance a comparative investigation of network organization to market and hierarchical forms in which the policy network emerges as an endogenous choice for informal contractual governance in policy-making. Second, I investigate a set of exogenous conditions under which the policy network can be viewed as the more likely organizational choice when compared to market or hierarchy. And third, I present a model of three ideal-type policy network forms – the direct, indirect and complex – in which network structure is argued to affect both the cost of self-enforcing exchange between the legislator and private actor(s), and the distribution of rent.

The theory is also applied empirically to data gathered from the *Lobbyists Registration Act*, demonstrating that the choice of policy network is affected by policy field-type, private actor lobbying behaviour, and legislator funding of private groups. In addition, by tracing the organizational response to the licensing of recombinant bovine somatotropin (rbST) in Canada, including the emergence of a complex-type policy network, I illustrate that the theory can be applied successfully to real policy cases.

Acknowledgments

The research presented herein represents the culmination of a long and enriching journey that has been my life as a doctoral student for the past four and one-half years. The most striking thing to me about this time has been the infrequency with which I have felt the journey to be an arduous one. And while it is possible that chance or good fortune has intervened on my behalf, it is far more likely that my experience is directly a result of the people who have provided me with the necessary guidance and support that have made the journey possible at all. I will be forever in each of your debts.

In particular, I must thank Professor Stanley Winer, who as teacher, supervisor, mentor and friend, has opened up a world of possibility for me that most certainly would have remained closed were it not for his wisdom and inspiration. I also owe a similar thanks to my co-supervisor, Professor Susan Phillips, whose keen sense of how to apply a new theoretical framework to an existing body of literature was invaluable to me. I offer you both my sincerest and warmest gratitude. I would also like to thank Professors Grace Skogstad and Steven Ferris who, as members of my defense committee, were able to provide me with valuable insight and advice from afar. I was honoured to have had the opportunity to present my research to such respected and learned scholars.

I must also thank Professors Bruce Doern, Les Pal, and Terry Nosanchuk for their advice and comments on earlier drafts of the dissertation. I am sure it is a stronger piece of work as a result. I am also indebted to the institutional and research support of the School of Public Administration and the Faculty of Graduate Studies at Carleton University. In addition, I am grateful for the funding support of the Social Sciences and

Humanities Research Council of Canada (Doctoral Fellowship 752-96-2024).

On a more personal note, I wish to express my love and thanks to a group of people who, amongst many others, were able to help me through the doctoral experience with relative sanity. To my parents and my brother, I will always be grateful. They each, in their own special way, make me who I am. A word of thanks also to my many friends, who I am sure were at times unwillingly subjected to my musings, and yet listened to me just the same. And finally, I reserve my deepest love and purest thanks for my wife, Nancy Baggio. There are not words to express the myriad wondrous ways in which she leads me to completion.

Table of Contents

Abstract.....	iii
Acknowledgments.....	iv
List of Tables.....	ix
List of Figures.....	x
Chapter	Page
1. From Metaphor to Model: Setting the Stage for a Transaction Cost Theory of Policy Networks in Policy-Making.....	1
1. Introduction.....	1
1.1 A Transaction Cost Grounding for Policy Network Theory.....	3
1.2 General Outline of the Dissertation.....	11
1.3 Detailed Outline of the Dissertation.....	17
1.4 General Contributions of the Dissertation.....	19
2. A Transaction Cost View of the Market, Policy Network and Hierarchy: Governing Against Post-Contractual Opportunism in Policy-Making.....	21
2. Introduction.....	21
2.1 The Legislator's General Problem: Why Focus on Contracts?.....	23
2.2 Specific Assets in Policy-Making: <i>Interest Specificity</i>	27
2.3 The 'Make' or 'Buy' Decision for Policy Resources.....	29
2.4 Governance Mechanisms in Policy-Making: Market, Policy Network and Hierarchy.....	31
2.5 A Simple Formalization of Expected Vote Maximizing Policy-Making and the Choice Between Alternative Governance Mechanisms.....	35
2.6 Governance by Policy Network: The Two-Actor Case.....	40
2.7 Protecting Against <i>Ex-post</i> Opportunism in Policy Networks: Trust and Reputation, Hostages, Sunk Investments, and Bilateral Exchange..	44
2.8 Conclusion.....	52
3. Exogenous Conditions for Policy Network Governance: With Application to the Canadian <i>Lobbyists Registration Act</i>	54
3. Introduction.....	54
3.1 Policy Choice and the Nature of Policy Resources.....	57

Chapter		Page
3.2	Groups, Collective Action and Investments in Interest Specific Assets.	61
3.3	Electoral Competition and the Legislator's Investment in Interest Specific Assets.....	66
3.4	Opportunism Hazards and Governance in Policy-Making.....	70
3.5	Empirical Application: Testing Propositions 3.1, 3.2 & 3.3, and 3.7 Using the Canadian <i>Lobbyists Registration Act</i>	75
3.5.1.	The <i>Lobbyists Registration Act</i>	75
3.5.2	Data Source: The <i>Lobbyists Registry</i>	77
3.5.3	Mann-Whitney <i>U</i> Test of the Effect of Policy Field-Type on Total Lobby Market Density.....	79
3.5.4	Regression Analysis of Individual Private Actor Registration Behaviour: The Effect of Field-Type, Demonstration-Type and Government Funding.....	83
3.6	Conclusion.....	93
4.	Structure, Commitment and the Self-Enforcing Range of Contracts in the Policy Network: Direct, Indirect and Complex Ideal-Types.....	97
4.	Introduction.....	97
4.1	Commitment and the Self-Enforcing Range of Contracts.....	99
4.2	Commitment Strategies to Self-Enforcing Contracts in the Policy Network.....	106
4.3	The Structure and Cost of Exchange: Defining Three Ideal-Types of the Policy Network – The Direct, Indirect and Complex.....	111
4.3.1	A General Model of Governance Cost in the Policy Network.....	113
4.3.2	The Direct Network.....	120
4.3.3	The Indirect Network.....	124
4.3.4	The Complex Network.....	128
4.4	Comparison of Network Types.....	134
4.5	Empirical Evidence on the Choice of Network Type: The <i>Lobbyists Registration Act</i> Revisited.....	137
4.6	Conclusion.....	142
5.	Market, Policy Network and Hierarchy in the Regulation of Scientific Milk....	144
5.	Introduction.....	144
5.1	The Issue.....	146
5.2	The Transaction Cost Nature of Science-Based Decision-Making.....	150
5.3	The rbST Chronology.....	156
5.4	The rbST Actors.....	159

Chapter	Page
5.4.1 Monsanto.....	160
5.4.2 Dairy Farmers of Canada.....	162
5.4.3 National Dairy Council of Canada.....	164
5.4.4 Consumers' Association of Canada.....	166
5.4.5 Council of Canadians.....	168
5.5 The Controversy, the Actors and the Response: The Result of Procuring Additional Policy Resources in the rbST Complex Network	169
5.5.1 1990-1993: The Regulatory Status Quo.....	170
5.5.2 1994-1997: Initial Stages of Informal Influence.....	171
5.5.3 Post-1997: The Emergence of the rbST Complex Policy Network.....	172
5.6 Conclusion: Implications of the rbST Case for Transaction Cost Theory and Biotechnology Regulation.....	183
6. A Transaction Cost Theory of Policy-Making and Policy Networks: Conclusions and Key Questions for Future Research.....	187
6. Contributions and Conclusions.....	187
6.1 Key Questions for Future Research.....	189
6.1.1 Formalizing the Choice Between Ideal-Type Networks.....	189
6.1.2 Further Empirical Work on the Choice Between Ideal-Type Networks	190
6.1.3 Policy Networks and the Historical Arc of Governance in Policy-Making.....	191
6.1.4 Combining Supply- and Demand-Side Studies of the Policy Network..	192
6.1.5 The Social Welfare Effects of Policy Networks in Policy-Making.....	194
6.2 Summary.....	195
Appendix	
1. Categories of Lobbyists for the <i>Lobbyists Registration Act</i>	196
2. Distinction between Search and Experience Policy Fields.....	197
3. Mann-Whitney <i>U</i> Test for Market Density in Experience vs. Search Fields.....	200
4. OLS Regression Sub-Sample by Fiscal Year and Field-Type.....	202
5. OLS Estimation of Equation (2) – Dependent Variable is Square Root of Number of Registrations for each Private Actor Registered Under the LRA.....	221
6. OLS Estimation of Equation (3) – Dependent Variable is Square Root of the Number of Registrations for Non-Corporate Organizations Registered under the LRA.....	222
7. Test of Difference in Complex Network Registration Proportions per Field-Type.....	223
Reference List.....	224

List of Tables

Table	Page
1. Lobbyist Registrations and Ranks by policy Field for 1996-97 and 1997-98.....	82
2. Descriptive Statistics for Variables (First Regression).....	85
3. Correlation Matrix of Variables (First Regression) – 413 Observations.....	85
4. OLS Estimation of Equation (2) – Dependent Variable is Number of Registrations for each Private Actor Registered Under the LRA.....	86
5. Descriptive Statistics for Variables (Second Regression).....	91
6. Correlation Matrix of Variables (Second Regression) – 240 Observations.....	91
7. OLS Estimation of Equation (3) – Dependent Variable is Number of Registrations for Non-Corporate Organizations Registered under the LRA.....	92
8. Ideal-Type Network by Number of Registrations per Bill by Field-type.....	140
9. Square Root of Lobbyist Registrations and Ranks by Policy Field for 1996-97 and 1997-98.....	201

List of Figures

Figure	Page
1. Total cost for a given policy – case in which cost separable in k and g	39
2. The legislator-group trading game.....	103
3. Reductions in hold-up probabilities.....	108
4. Implicit contractual shifts of private enforcement capital in the policy network.....	115
5. Schematic diagram of the direct network.....	120
6. Schematic diagram of the indirect network.....	125
7. Schematic diagram of complex network types.....	128
8. Cost of governance in the complex, direct and indirect network forms.....	135

To Nancy

Chapter 1

From Metaphor to Model: Setting the Stage for a Transaction Cost Theory of Markets, Policy Networks and Hierarchies in Policy-Making

1. Introduction

A standard conclusion drawn by studies of public policy-making is that policies result from the interaction between various actors as they coalesce around given issues that impact on their interests. Whether viewed from the traditional pluralist school (e.g., Dahl 1962), the state autonomy approach (e.g., Atkinson and Coleman 1989a; 1989b; Smith 1993), by scholars introducing the role of ideas (e.g., Sabatier 1988; Haas 1992), by those favouring a traditional economics methodology (e.g., Stigler 1971; Becker 1983; Peltzman 1989), or those working out of the new institutional economics school (e.g., McCubbins, Noll and Weingast 1987; 1989; Horn 1995; Moe 1990a; 1990b; 1991; 1997), policy researchers have long been concerned with explaining how government decisions arise out of the interactions among political actors. Perhaps nowhere else is this academic thrust more evident than in the body of literature that deals with the study of policy networks.¹

There have been many attempts in the existing literature to provide a strict definition of the policy network and its function. However, in addressing the current state of policy network theorizing, Dowding (1995: 137) suggests that all attempts “fail because the driving force of explanation, the independent variables, are not network characteristics *per se* but rather characteristics of components within the networks.”

¹ Indeed two journals have recently devoted entire issues to the policy network concept: *Governance*, 2(1), 1989; *European Journal of Political Research*, 21(1), 1992.

While this conclusion is not beyond criticism (see Hindmoor 1997; 1998), it would certainly appear to be quite close to the mark. An examination of policy network research reveals numerous examples of studies that simply classify networks according to some range of variables that are characteristics of the actors involved (e.g., Atkinson and Coleman 1989; Coleman and Skogstad 1990; Marsh and Rhodes 1992; van Waarden 1992). As Dowding (1995: 137) asserts, the general approach is valuable – what is needed is a ‘true’ theory where “the properties of the (policy) network rather than the properties of its members drives explanation.”

In what follows, I argue that in order for the policy network approach to continue to enrich the study of public policy, a concerted effort must be made to develop a theory of policy networks that dispels the criticisms put forth by commentators such as Dowding (1995). A set of ‘first principles’ must be established that allow for a comprehensive examination of why networks emerge as viable organizational forms in policy-making, what factors affect the formation of policy networks when compared to other institutional responses such as the market or bureau, and how the structure of policy networks affects the structure of exchange in policy-making. I argue that this set of principles which requires the researcher to view policy-making generally – and policy networks specifically – is best developed through the lens of transaction cost theory. By treating the primary focal point of the research as the set of formal and informal contracts that legislators enter into during policy-making, coupled with the necessity for alternative organizational forms to govern contractual performance, a fresh theory of the policy network’s place in policy-making emerges.

1.1 A Transaction Cost Grounding for Policy Network Theory

At its core, the dissertation makes a relatively simple argument: understanding the policy network and its role in policy-making requires new theoretical work that places the network in its correct comparative organizational context, while at the same time offering a positive account of the manner in which network structure affects exchange. In building this argument, I offer a solution to one of the fundamental difficulties that has plagued policy network research – namely, it's a-theoretical base. To re-phrase the title of Keith Dowding's notable article, I make a 'model' out of the policy network 'metaphor'.

Policy network analysis has made a rich and varied contribution to the study of public policy by exposing the complexities of private-public linkages in policy formation and implementation. An off-spring of the pluralist and institutionalist schools, the network approach posits that meso-level variables associated with state-society relationships are important as explanatory tools of the policy process (Jansen 1991). In particular, the number, type, and mix of actors, the capacity of actors to behave in separation from each other, the continuity and embeddedness of interactions, the effect of macro-political institutions on sectoral outcomes, and the general interdependencies and interrelatedness of policy actors are all seen as variables that affect policy outcomes (see e.g., Jordan and Richardson 1979; Wilks and Wright 1987; Atkinson and Coleman 1989; Marsh and Rhodes 1992; Smith 1993).²

² Perhaps the best review article of the network approach is Dowding (1995). I too have presented a review of the policy network approach in relation to theories of sociological and bureaucratic networks (MacDonald 1996).

The distinguishing character of policy network research is that it has established the relevance of looking at who is involved in, and who has the ability to affect, policy-making (Atkinson and Coleman 1996). The policy network is viewed as a forum for political competition between both state and societal actors. A pseudo-market is envisioned where actors who have the necessary informational and technical expertise can gain a privileged place in both the creation and implementation of public policies (see Atkinson and Coleman 1992; van Waarden 1992; Hanf and O'Toole 1992; Rhodes and Marsh 1992). The network is taken to be the place where an *integrative logic* emerges between various actors as they attempt to solve the problems of policy governance (Kenis and Schneider 1991).

The policy network is thus viewed as an organizational form fundamentally different from alternative organizational types – most notably the market and the hierarchy; it is an arena of exchange that is characterized by a decentralized notion of interrelationships in policy-making. Network research attempts to find its place as a meso-level theory of the state. However, notwithstanding the important contribution that network analysis has made to the study of public policy – particularly at the case-study level (see Coleman and Skogstad 1990; Marin and Mayntz 1991; Marsh and Rhodes 1992) – network researchers themselves acknowledge that the policy network concept has had a difficult time in moving beyond its metaphorical character (Atkinson and Coleman 1996).

The current policy network approach can therefore be seen more as a system of classification than it can as a theory of the state or of policy-making. The problem with

current theorizing about networks, it would appear, rests on the definition of what a theory of the network should look like. In his influential critique of network research, Dowding (1995: 140-141) outlines this problem as follows:

A true theory must be generalizable to all objects to which it is supposed to be applicable. It should be able to explain variance between those objects as well as explaining similarities. Too often different state theories are about different types of state – thus some states are seen as more pluralist than others, some as more elitist than others, some as more autonomous than others. But if this is so then none of the ‘theories’ is about ‘the state’. You cannot have a theory about dogs which applies to alsatians and not poodles, then study two dogs and conclude that one is more poodle-like and another more alsatian-like. That is not a theory; it is a system of classification. Any theory of the state must specify how we expect different actors (institutions, people, groups or whatever) to behave *under different institutional arrangements* (emphasis in original).

To answer Dowding’s criticism, I argue that a ‘true’ theory of policy networks will be one that *does* specify how actors are expected to behave under different institutional arrangements. In fact, it is directly as a result of consistent behaviour under such different institutional arrangements that the policy network emerges as a viable organizational form in policy-making.

It is certainly reasonable to assume that current research is correct in its assertion that policy networks exist, that they play an important role in policy-making, and they are forums for exchange relationships. Empirical evidence alone is enough to substantiate this claim. It makes sense then, that a theory of policy-making in which the policy network will play a significant part would begin by appealing to an analysis of exchange as its primary point of departure. Such is the case when a transaction cost theory of policy-making is developed.

The transaction cost framework was developed as a means to explain alternative

forms of economic organization (see e.g., Coase 1960; Williamson 1975; 1985; 1991; 1996). The central argument of the approach is that economic relationships can be viewed in contractual terms, and that different organizational forms have different capacities in their ability to overcome the costs of contracting. In a world characterized by positive transaction costs – the economic equivalent of friction in physical systems (Williamson 1985: 19) – the total cost of production is the sum of procurement costs and the costs of exchange. When deciding how best to organize production, the rational economic actor must therefore consider not only how much a given input costs, but also consider how best to *organize* procurement. This decision is characterized along a continuum of organizational mechanisms with formal responses such as the market and the hierarchy at either end, and informal arrangements such as networks in the middle. The choice that economic actors execute is therefore typified as the ‘make’ or ‘buy’ decision: inputs are bought when they are widely available and procurement can be organized easily and cheaply as on the market; inputs are made when they are specific to a given economic task and procurement is costly enough on the market such that economies of scale and scope can be established through hierarchical organization (Rubin 1990).

I argue in the dissertation that the application of private sector transaction cost economics to the public sector reveals a similar choice between organizational forms for the procurement of inputs in policy-making. If one considers that policy-makers require inputs or resources to make public policy, it is reasonable to assume that they will procure such resources in a similar manner to their private sector brethren, i.e., alternative

organizational forms to govern exchange will be evident in the public sector. In other words, the actors ultimately responsible for policy-making in a democracy – legislators – will face a similar ‘make’ or ‘buy’ decision for policy resources. Procuring resources such as computers, pencils and opinion polls will be organized easily on the market, whereas procuring resources such as experience with public health, education or national defence will be organized by the public bureau. In addition, informal organizations such as the policy network will also be organized when the resources being procured are not marketable, nor easily ‘made’ in the public sector.

The trade-off between market, network and bureaucratic organizational forms rests on the nature of the resources being procured, coupled with the manner in which contractual disturbances are resolved (Williamson 1985). The market is therefore used when resources are widely available from many sources (e.g., computers) – that is they are non-specific – and contractual disturbances can be dealt with by simply moving to an alternative source, or by relying on court-enforced contracts. Hierarchies are adept at organizing the procurement or ‘making’ of resources that are highly specific – that is they are not easily secured from alternative sources (e.g, national defence) – and contractual disturbances are dealt with by authority. In both cases *formal* mechanisms exist to enforce *formal* contracts.

Networks, on the other hand, are informal organizations that are instituted when resources are more specific than can be dealt with by the market, but less so than would be required by hierarchical organization. Resolving disturbances rests on the ability of trading partners to devise *informal* methods to deal with *informal* contracts. Mechanisms

such as trust, reputation, 'tit-for-tat' strategies and embedded exchange relationships characterize the informal range of contractual relationships (see Axelrod 1984; Granovetter 1985; Klein 1997a; Hindmoor 1998).

It should be noted that the comparison of network organization to market and hierarchical forms does exist in the current literature – most notably in the German 'Max-Planck-School'.³ This 'school' separates itself from 'exchange' and 'strategic interaction' methodologies "which are based on the maximization of self-interest through cost-benefit calculations", by asserting that "negotiations in policy networks are based on communication and trust and aim at achieving joint outcomes" (Börzel 1998: 262). In this light, the policy network assumes an organizational primacy when policy-making requires horizontal coordination between public and private actors who face common challenges of problem-solving. And while this literature is correct to identify the link between networks and the transaction costs inherent to the exchange of information in policy-making, it does so by assuming that network behaviour is different from behaviour in other organizational settings, i.e., it is trustful and based on communication and common problem-solving goals, rather than market-based self-interest, or hierarchically-based authority. The policy network is thus viewed as being fundamentally different in terms of both activity *and* behaviour when compared to the market or hierarchy.

As Dowding (1995) would argue, the central problem with this approach is that it leads researchers to conceive of different theories of action under different organizational

³ An excellent review of the 'Max-Planck-School' is contained in Börzel (1998). The work of scholars like Renate Mayntz, Fritz Scharpf, Patrick Kenis, Volker Schneider and Edgar Grande are included in this 'school'.

settings. It is therefore not a theory in which *one* assumption about actor behaviour is able to demonstrate why it is that different organizational patterns in policy-making are observed empirically; it is a theory in which different organizational forms are explained by assuming different behavioural patterns. The ‘Max-Planck-School’ therefore suffers from the same fundamental difficulty that has plagued other policy network researchers – the inability to demonstrate why it is that networks will emerge in policy-making *without* having to rely on differing sets of behavioural assumptions.

In order to overcome this theoretical deficiency, I take a singular approach in the dissertation with respect to the assumed behaviour of both public and private actors in policy-making: actors intend to optimize their self-interest *independent* of the organizational setting. In this light, the policy network emerges not as a result of a different conception of ‘exchange’ or ‘strategic interaction’, but rather *directly due to* the requirement to enter into exchange relationships and strategic interactions. Different forms of governance are thus the result of consistent behaviour in an environment characterized by variability in the resources that are exchanged, not in the variability of behaviour. This, at its very core, is the transaction cost approach.

A recent article by Andrew Hindmoor (1998) has made an exciting initial foray into transaction cost research of the policy network. Like my own work, Hindmoor frames a response to Dowding’s (1995) critique. His argument is that networks will emerge as alternative governance structures to the market or hierarchy when private actors have the ability to affect the costs of *implementing* public policies. By tracing the history of the negotiations that took place in the creation of the British National Health

Service in 1948, Hindmoor demonstrates that the Ministry of Health (MoH) required the co-operation of the British Medical Association (BMA) to administer the Service. Initial difficulties in arranging a suitable administrative structure rested on the inability of either a market or hierarchical organization to govern efficient exchange between the MoH and BMA. Furthermore, an absence of trust between the BMA and MoH precluded the use of a network implementation structure during early negotiations in 1946. However, as a condition of trust became embedded by 1948, Hindmoor argues that the network emerged as a viable alternative governance tool to the market or hierarchy.

Hindmoor's response to Dowding's critique can be viewed as a supply-side argument. He uses the transaction cost framework, I think correctly, to establish that a positive theory can be developed to account for the emergence of policy networks as administrative structures; networks can be viewed in comparative terms to markets and hierarchies as efficient implementation organizations in policy-making.

But surely a comprehensive theory of policy-making in which the policy network plays a role must account for the demand-side as well. If transaction cost research demonstrates that network organizations are important at the *output* stage of the policy process as Hindmoor argues, it is important to investigate whether they will also play a role at the *input* stage. In fact, I argue that the legislator who is interested in the efficient delivery of a given policy, is also likely to be concerned about efficiency when *making* the initial policy decision. As Hindmoor has done for the supply-side, I suggest that developing a theory about the demand-side requires a transaction cost approach.

1.2 General Outline of the Dissertation

The dissertation is thus a specific inquiry into the organizational responses of legislators in policy-making. A framework is developed to uncover the special nature of exchange in the public sector. To do this, I center the analysis around the decisions made by legislators as they play an expected vote maximizing game. I argue that these decisions can be viewed as a response to the costs associated with designing appropriate governance mechanisms to guard against post-contractual opportunism in the procurement of resources that are necessary to make public policy. Exchange in a positive transaction cost environment is treated as the primary focal point of the dissertation which, in turn, leads to a extensive investigation of the parameters of, and strategies employed in, the relationships that exist between public and private actors in policy-making.

Ultimately, the goal of the research is to establish a transaction cost theory of policy-making in which the policy network is viewed as a rational organizational response to the conditions of exchange in a positive transaction cost setting. I therefore begin from the premise that the policy network does not exist *a priori*, but rather emerges as a viable governance mechanism due to the strategies employed by legislators as they procure different types of policy resources from different sources. The policy network is viewed in comparative organizational terms to the market and hierarchy, and its creation can be seen as a response to the requirement of legislators to sometimes enter into informal contractual relationships when procuring policy resources. In fact, the policy network materializes *only* when informal exchange is required; a theory of policy

networks can thus be viewed as a theory of informal exchange.

My arguments are predicated on the assumption that actors will behave rationally in response to the problems of contracting. In an effort to reap gains-from-trade in policy-making, both public and private agents will respond to their environment in a manner that optimizes the chance of securing beneficial exchange. If that environment is characterized by positive transaction costs, opportunism, and variability in the nature of resources, optimizing behaviour implies that exchange must be governed against potential contractual disturbances such that expected net benefit is positive. In other words, the potential benefit of a given exchange must be weighed against the costs associated with securing the bargain.

The dissertation is thus a theoretical and empirical examination of the conditions and effects of exchange in the positive transaction cost setting of policy-making. I advance a transaction cost theory in three parts, beginning with a general comparative investigation of network organization to market and hierarchy in which the policy network emerges as an endogenous choice for legislators in policy-making. The general theory discusses why legislators would ever engage in exchange in policy-making from a perspective that looks at the cost of procuring policy resources, the cost of governance, and the conditions of exchange relationships affecting organizational choice. In this context, the policy network is viewed as one example of an efficient governance mechanism in policy-making.

Next, I investigate a set of exogenous conditions under which the policy network is viewed as the more likely organizational choice. Set in the context of the general

theory which describes *why* and *how* policy networks exist, the discussion of exogenous conditions explores *when* the policy network can be expected to emerge as the organizational choice. Essentially, the inquiry moves outside the network to look at external factors affecting exchange.

The third part of the theoretical examination returns to the discussion of governance first developed in the general theory by looking closely at the role of private enforcement mechanisms necessary to establish self-enforcing exchange in the policy network. I suggest a model of three ideal-type network forms that differ structurally in terms of how the costs of exchange are dealt with, and how the gains-from-trade are distributed amongst network actors. In doing so, I argue that the cost of exchange will vary across ideal-type network organizations, establishing a model of the policy network in which structural conditions affect informal exchange *independent* of the character of the actors involved.

In addition, I present three forms of empirical analysis to apply the theory. By using data from the *Lobbyists Registration Act* and its associated *Registry* I test a set of propositions about exogenous variables affecting the choice of policy network governance in a multiple linear regression analysis. The analysis indicates empirical support for arguments developed in the theory. I also use the *Registry* to advance a preliminary test of the legislator's choice between ideal-type network forms. Finally, I use the transaction cost theory of policy networks to contextualize and inform a case-level inquiry of the licensing of recombinant bovine somatotropin (rbST) in Canada, suggesting that the theory offers valuable insight into cases of actual policy-making.

1.3 Detailed Outline of the Dissertation

I develop and apply the transaction cost theory of policy networks in five chapters. Chapter 2 establishes why a focus on the legislator's contracting problem is important, and how this focus is dealt with as a transaction cost theory of policy-making. I outline the special nature of contracting in policy-making as being one where the *level* and *type* of resources that legislators procure determines the design of governance mechanisms. The legislator's general problem is seen as one of deciding whether to 'make' or 'buy' required resources that are characterized along a continuum of *interest specificity*. When politically important resources become increasingly difficult to redeploy to alternative uses, they are argued to deepen in their interest specificity. Deepening specificity implies that contractual disturbances are more difficult to deal with, leading to the argument that procuring resources of different character will require contracts to be aligned with alternative governance mechanisms.

Three general mechanisms are dealt with: the market, the network, and the hierarchy. A formalization of the legislator's procurement problem suggests that the choice of governance mechanism will depend on the benefit and cost of the policy written, the resources required to make the policy, and the cost of governance. It is argued that given some level of interest specificity, legislators will maximize expected votes in policy-making by aligning their procurement decisions with the appropriate governance mechanism. The policy network thus emerges endogenously in the broader transaction cost theory of policy-making.

I then examine a stylized model of one-on-one exchange between the legislator

and a private actor in the policy network setting, arguing that both parties will have an interest in guaranteeing post-contractual productivity. The policy network is viewed as an independent organizational structure that facilitates beneficial exchange from both actors' perspective. The use of specific mechanisms such as hostages and sunk investments, or conditions of bilateral exchange and trust, are seen to typify the range of informal contracts that are governed by the policy network.

Chapter 2 argues that the underlying interest specific nature of policy resources affects the choice of governance structure. Chapter 3 takes this conclusion as given, and then investigates a set of exogenous conditions under which one would expect to see the policy network emerge as the governance mechanism of choice. I suggest that the *search* versus *experience* character of the resources, the *collective action* capabilities of the private actors, the *electoral position* of the legislator, and the conditions under which *post-contractual opportunism* can be successfully managed, are each useful indicators of whether or not a policy network is likely to be observed in policy-making.

A series of testable propositions are developed out of a theoretical examination of the exogenous conditions for network exchange. As such, Chapter 3 is written with the goal of finding empirical evidence to support or refute the propositions. I set up a multi-variable linear regression model to examine a particular array of independent circumstances that are likely to lead to the institution of a policy network form of governance. Using the Canadian *Lobbyists Registration Act* and its associated *Lobbyist Registry* as the data set, I argue that the likelihood of network governance increases when policy-making requires experience resources, when private actors are able to demonstrate

a credible pattern of collective action, and when legislators fund private actors for the creation of new policy resources.

Armed with an explanation of why the policy network emerges as an organizational form in policy-making, coupled with an investigation of a set of exogenous conditions that are likely to lead to network emergence, Chapter 4 moves towards an in-depth analysis of self-enforcing contractual behaviour in policy networks. I utilize the transaction cost literature on the employment of *private enforcement capital* to develop a theory of ideal-type policy networks in which the structure of network exchange affects the cost of governance. I present a model of three ideal-type networks – the direct, indirect, and complex – to discuss how legislative and private actors will respond to the different cost structures inherent to each network type as they attempt to guarantee the sanctity of self-enforcing exchange.

The self-enforcing range of contracts is characterized by the requirement of agents to transfer private enforcement capital between them in order to decrease the probability of opportunistic behaviour, i.e., contractual commitment relies on the ability of trading partners to enforce their own relationships through the use of private sanctions to punish defection. This is seen to affect both the cost of governance and the distribution of gains-from-trade in the network setting. I develop the ideal-type classification to discuss how the structural relationship between legislators and private actors conditions informal exchange, arguing that the cost of governance and the distribution of rent in the network will depend on whether the situation is one of:

1. Direct exchange between the legislator and private actor(s) in a setting where

private actors do not exchange with each other (i.e., the direct network);

2. Indirect exchange between the legislator and the private actor(s) as mediated by the existence of a third-party lobbyist, again in a setting where private actors do not exchange with each other (i.e., the indirect network); or
3. Exchange between the legislator and private actors, either mediated or not, in a setting where private actors do exchange with each other (i.e., the complex network).

I argue that the implication of alternative ideal-type network structures can be seen in the legislator's choice between them. Given the choice of policy and the level of interest specificity of the required resources, the legislator can be expected to rank the ideal-types on the basis of governance cost, preferring the complex network first, the indirect network second, and the direct network third. As in Chapter 3, I test this proposition against evidence acquired from the *Lobbyists Registry* regarding legislation that has been passed in the first session of the 36th Canadian Parliament. The evidence suggests that the complex network-type is the preferred choice.

Chapter 5 combines the theoretical conclusions from the previous chapters in a case-study of the policy process surrounding the potential licensing of recombinant bovine somatotropin (rbST) for use in the Canadian dairy industry. The case is seen to be a particularly good one for the transaction cost theory of policy-making and policy networks because there is evidence of the legislator's 'make' or 'buy' decision, including the requirement to procure different types of resources under different governance arrangements. In addition, there is evidence of a complex network form with its associated transfer of enforcement capital that emerged due to the inadequacies of market and hierarchical governance to secure the entire range of necessary policy resources. The

result, is a situation where multiple policy resource procurement is governed by different organizational forms, showing legislators' propensity to align formal and informal contracts with alternative governance mechanisms. Looking at the rbST issue as a case of governing exchange not only provides useful support for the transaction cost theory of policy-making advanced in the dissertation, but it also uncovers, I suggest, aspects of the case that have eluded other researchers.

I conclude the dissertation in Chapter 6 with a suggestion that the theory and application of the transaction cost view of policy-making and policy networks developed herein should serve as a constructive point of departure for further research. In particular, I see several immediate and important directions in which transaction cost research might head including: a formalization of the choice of ideal-type networks by introducing interest specificity to the common-agency problem; the development of further empirical research to investigate the choice between ideal-type networks; an investigation of the policy network in terms of historical context and the organization of policy-making over time, perhaps through an analysis of whether changing communication technologies can be shown to affect the choice of network forms of governance; an 'holistic' combination of my treatment of the demand-side with Hindmoor's treatment of the supply-side; and an analysis of the social welfare implications of policy network governance.

1.4 General Contributions of the Dissertation

I develop the transaction cost model of policy networks and apply it empirically in a manner that I argue offers fundamental contributions to the existing literatures on policy networks and transaction cost theory. And while I draw out the specific contributions of the dissertation below, it is useful at this stage to suggest that in general the work can be seen to advance current research by establishing a new framework for the analysis of organizational choice in policy-making.

In particular, it is by viewing exchange in situations where transaction costs are positive that I am able to investigate, in comparative terms, the specifics of policy network governance in a broader theory of policy-making. Whereas current policy network research takes the existence of networks as given, my own work establishes a concrete rationale for network emergence as one possible solution to the legislator's general problem of procuring vote-productive policy resources for expected vote-maximizing policy-making. In other words, policy networks arise endogenously in the general transaction cost theory of policy-making.

The general theory is then used to inform a theoretical and empirical analysis of exogenous conditions under which the network is viewed as being the likely choice of governance mechanism. Doing this allows for an investigation of independent variables that can be shown to affect the structure of exchange in policy-making. The structure of exchange is also discussed in the context of developing an ideal-type model of policy networks where organizational form is argued to affect the cost of governance and the distribution of rent. In both cases, the research suggests that the structure of exchange

can be viewed as being independent of the character of the actors involved – an argument that is also illuminated empirically.

Overall then, the dissertation advances a general theory of policy-making in which exchange in a positive transaction cost environment is treated as the primary focal point of the research. This perspective allows for an investigation of the ways in which the costs of exchange affect the choice of organizational form, and the strategies employed, to govern against the hazards of opportunism. By relying on only one set of behavioural assumptions, I argue that the legislator interested in the efficient governance of exchange in policy-making will consider the structure of exchange when aligning contracting choices with alternative governance mechanisms. The implication of this for the current state of theorizing about policy-making in general, and the policy network in particular, is a situation where a positive model linking the structure and cost of exchange is argued to emerge. In fact, a fundamental step is taken to change the policy network metaphor into a policy network model.

CHAPTER 2

A Transaction Cost View of the Market, Policy Network and Hierarchy: Governing Against Post-Contractual Opportunism in Policy-Making

2. Introduction

In what follows below, I argue that the first step towards a richer theory begins by placing the policy network in its correct context vis-à-vis general theorizing about policy-making. I contend that what is necessary to stimulate further understanding of the validity of the policy network concept specifically, and policy-making generally, is an approach that concentrates directly on exchange and its governance by alternative organizational structures – an approach that applies transaction cost economics (TCE) to the public sector. In this new light, the policy network is seen to emerge as but one example of an efficient organizational form for governing contracts in policy-making.

In large part then, the goal of the chapter is to examine why legislators would *ever* engage in exchange when making public policy. I begin by suggesting that a theory of policy-making can be viewed as a theory of the legislator's search, and subsequent contracting, for the building blocks of public policies. Building blocks, or policy resources/inputs, refer to all commodities that the legislator uses in designing policy. In order to uncover the importance of treating contractual governance as the key analytical focus, I discuss the legislator's general problem as he or she attempts to choose between three general forms of governance mechanism: the market, policy network and hierarchy. This choice is seen as part of the solution to the legislator's problem of designing politically optimal policy for expected vote maximization. I argue that selection of the appropriate governance mechanism is dependent on the nature of the policy resources

contracted for.

Next, I examine the specific role of the policy network. By looking at the stylized case of the two-actor network I argue that contractual efficiency rests on the ability of the actors to organize against post-contractual opportunism. I show that the policy network is properly viewed as an organization where governance mechanisms for informal exchange in policy-making are found. In addition, it is suggested that understanding the special nature of contracting in the policy process requires one to account for both the *level* and *type* of resources traded.

The chapter is organized as follows. I start by establishing the importance of looking at the legislator's general problem in policy-making as a contracting choice (2.1). Next, I look at the special role of interest specific assets in this problem (2.2), outline the legislator's general response as one of 'make' or 'buy' (2.3), and discuss this response in terms of aligning contracts for different types of resources with different governance mechanisms (2.4). A simple formalization of this choice from the legislator's perspective is offered (2.5). I then look directly at a model of one-on-one exchange between the legislator and a private actor in the policy network setting (2.6), and expand this analysis to account for specific contractual arrangements that one might expect to find in the policy network setting (2.7). The chapter concludes with a look forward to further sections of the dissertation.

2.1 The Legislator's General Problem: Why Focus on Contracts?

Assume for convenience that the legislator's problem is one of choosing a form of governance mechanism and a vector of public policies to maximize expected votes.⁴ The competitive electoral process forces the legislator to use his or her power over final legislation to institute expected vote maximizing policies.⁵ The chapter looks at the mechanisms that are available to the legislator for the efficient governance of formal and informal contracts for policy inputs in this policy-making game.

The assumption of expected vote maximization is in line with public choice models of elections that treat the legislator's behaviour as purposive towards the goal of securing office under conditions of uncertainty about how voters will vote on election day (see e.g., Enelow and Hinich 1984, Ch. 5; Mueller 1989, Ch. 11; Coughlin 1992).

Political candidates are suggested to be strategic in their decisions about the design of expected vote maximizing policy platforms in competitive elections. Such decisions may or may not be 'correct', but regardless, the importance of candidate behaviour is such that "decisions hinge crucially on the candidates' beliefs about the relation between the decisions they make and the choices the voters will make on election day" (Coughlin 1992: 20).

⁴ The characterization of the legislator's objective function could be generalized to expected plurality maximization, maximizing the probability of winning, and so on. Doing so would not fundamentally alter the problem being considered herein.

⁵ The legislator's power over policy-making is viewed as constrained monopoly power. For example, constraints may be imposed by an upper house, the courts, party discipline, and competitive elections at regular intervals. Policy-making power is an expression of the division of labour inherent in political institutions where voters elect "small numbers of officials to regulate and direct social processes without having to consult regularly with the rest of us...we elect officials to learn about things that might affect us and then to act on our behalf as we would if we had the same information" (Ferejohn 1990: 6).

I examine expected vote maximizing behaviour only from the perspective of the legislator in office and treat opposition platforms as given. Such a treatment is reasonable in that I look at and characterize policy choices in general, rather than solving for equilibrium policies.

A central task for examining how such policy-making takes place is to isolate the dimensions along which the legislator makes his or her choices. One manner in which this investigation could take place would be to treat the legislator as an individual who possesses all productive resources for policy formation and implementation, and makes decisions accordingly. Alternatively, and certainly more realistically, one could take the view that legislators do not operate in isolation and do not exogenously possess all required policy resources. Instead, the legislator will contract for policy resources when the net benefit of doing so, in terms of expected votes, is positive.⁶ One need look no further than contracting in the public bureau to see that this second scenario more closely matches reality in policy-making. In fact, as will be shown below, the bureau is only one example of the necessity for legislators to engage in various forms of exchange for productive policy resources. I take the position then, that the important dimension along which an examination of vote maximizing policy-making should take place is the range of contracts that legislators enter into for policy resources.

Simply identifying the importance of contracts for policy resources is not enough; one must also look beyond transactions to the institutional arrangements that are designed

⁶ Contracting for policy resources occurs prior to voting i.e., during the policy-making stage. The legislator's desire to contract, however, is based on their futuristic outlook to election day.

for their governance. Such is the case when a transaction cost view of contracting is taken.

At its base, the transaction cost perspective treats the transaction as the central unit of analysis, and argues that agents must “align transactions (which differ in their attributes) with governance structures (which differ in their costs and competencies) in a discriminating (mainly transaction cost economizing) way” (Williamson 1996: 46)⁷. In other words, the basic insight is that transactions must be governed by formal and informal contracts between actors, and that this governance is effected more efficiently under certain institutional settings than others (Shelanski and Klein 1996: 336). Which setting is chosen, for instance the market or hierarchy, depends on the nature of the assets being exchanged coupled with the underlying desire of the trading partners to avoid opportunistic behaviour in contracting (Williamson 1985).

Opportunism is one of the central concepts to investigations of the governance of contractual relations, and leads researchers out of the transaction cost tradition to comparatively discriminate amongst governance mechanisms on the basis of their efficiency in combating opportunistic behaviour. Opportunism in a positive transaction cost environment necessitates alternative mechanistic forms to govern contracts. But should one also be interested in the specific characteristics of contractual relations that require governance in the first place? The short answer is yes. In particular, the “principle dimensions on which transaction cost economics presently relies for purposes of describing transactions are (1) the frequency with which they recur, (2) the degree and

⁷ Parentheses in original.

type of uncertainty to which they are subject, and (3) the condition of asset specificity. Although all are important, many of the refutable implications of transaction cost economics turn critically on this last” (Williamson 1996: 59).⁸ As a result, to advance a useful theory of the legislator’s choice in policy-making out of the transaction cost framework – one that looks directly at contracting – I must begin by uncovering the relationship between the special nature of the policy resources exchanged and the choice of institutional arrangement for contract governance.

Before moving on to this examination, one more assumption about the production of expected vote maximizing public policy is required: policy-making is costly to the legislator. Cost in this sense should not only be viewed in terms of accounting costs (e.g., tax funds to pay bureaucrats), but also opportunity costs (e.g., time spent making public policy could alternatively be spent campaigning, dealing with constituents, granting television interviews, and so on), and transaction costs (e.g., searching the environment for trading partners, measuring asset attributes, and monitoring contracts). A reasonable assertion that the legislator will make expected vote maximizing policy in a least-cost manner stems from this assumption. The transaction cost perspective, as shown below, is particularly useful in investigating the implications of this assertion because it explicitly accounts for the total cost of producing public policy outputs.

⁸ Shelanski and Klein (1995) capture the primary importance of asset specificity when they outline that frequency and uncertainty are variables that themselves are dependent on the nature of the assets traded. Hence, and as is typical of transaction cost research, I focus my attention in what follows directly on asset specificity.

2.2 Specific Assets in Policy-Making: *Interest Specificity*

Williamson (1975; 1985; 1991; 1996) has shown that the economic cost of governance depends on the cost of adapting to unanticipated contractual disturbances. In his discriminating alignment hypothesis, Williamson shows that these costs vary with the degree of asset specificity and the choice of governance organization. In other words, the nature of the asset contracted for is a determining factor in the choice of governance form. Contracts for assets that are easily redeployed allow for autonomous adaptation and are organized by markets; contracts for assets that are not easily redeployed are characterized by bilateral or multilateral adaptation and are organized by hierarchy (Williamson 1991). It is argued that a trade-off between incentive intensity (market) and coordination (hierarchy) exists in adapting to contractual disturbances.⁹ In addition, an intermediate organizational form exists – the hybrid. Hybrids offer greater incentive intensity than hierarchies, but lower coordination; relative to markets, hybrids offer lower incentive intensity, but greater coordination. As I argue below, the policy network is appropriately regarded as the hybrid organization in policy-making.

In the private sector to which Williamson (1991: 22) refers, asset specificity includes:

- (1) site specificity, as where successive stations are located in a cheek-by-jowl relation to each other so as to economize on inventory and transportation expenses; (2) physical asset specificity, such as specialized dies that are required to produce a component; (3) human-asset specificity that arises in learning by

⁹ The trade-off between market and hierarchy is measured along two dimensions: 1) the degree to which the individual contractor is responsible for the costs and benefits of the contract (high in markets, low in hierarchies); and 2) access to distinctive instruments, such as fiat, to resolve contractual disputes (low in markets, high in hierarchies). Williamson (1985) calls the move along the market-hierarchy continuum the “fundamental transformation”.

doing; (4) brand name capital; (5) dedicated assets, which are discrete investments in general purpose plants that are made at the behest of a particular customer; and (6) temporal specificity, which is akin to technological non-separability and can be thought of as a type of site specificity in which timely responsiveness by on-site human assets is vital. Asset specificity, especially in its first five forms, creates bilateral dependency and poses added contracting hazards.

In the public sector where the concern is organizing for policy-making, additional room must be made to discuss assets that have a political value that may be separate from their economic value. I thus refer to *interest specific assets*, and define them as assets which can be used by an actor to engage in a particular course of action with political consequences.¹⁰ For example, take the case of an environmental group who's interest specific asset is the ability of its members to credibly commit to chaining themselves to a stand of old-growth trees in response to a policy that has granted harvesting rights to a profit maximizing logging firm. The asset is costly to the group, as shown by their overcoming the costs of collective action and their revealed commitment to pay for protest, perhaps even to the point of going to jail. The asset is highly specific in that it cannot at all be easily redeployed to an alternative use (e.g., it is highly unlikely that the same group would organize itself as a logging firm). And while the asset is not based on economic value as it cannot be sold on a market, it has *political* value in the policy process to the extent that the legislator wishes to avoid protest. Of course it is entirely possible that interest specific assets can be based on economic value as well.

Consider the logging company above whose interest in a harvesting policy is

¹⁰ Political consequence in this regard refers to the ability of the actor to use the interest specific asset to influence voting behaviour. In the example given here, the asset could be used to embarrass the legislator which may have a negative effect at the ballot box.

based on economic value – profit. If the company is able to credibly commit to a course of action such as withdrawing jobs from the economy if the harvesting rights are not guaranteed, then the company also owns an interest specific asset. As for the environmental group, the asset is specific in that it cannot be easily redeployed (e.g., to manufacturing automobiles). It has value in the policy process to the extent that the legislator is concerned about jobs. The legislator is thus faced with designing an expected vote maximizing policy that considers both interest specific assets, the result of which will depend on the relative value the legislator places on avoiding protest and guaranteeing jobs. In either polar case where the legislator values one asset to the exclusion of the other, one can expect the policy to favour only one actor. It is more likely, however, that both assets are valued. In this case, the policy might reflect some compromise (e.g., the granting of harvesting rights conditional on re-forestation). Regardless of the particular policy output, the legislator faces a common problem: how to organize the contracting of expected vote maximizing policy resources. In other words, the legislator asks him or herself the following question: “Do I ‘make’ or ‘buy’ expected vote maximizing policy resources?”

2.3 The ‘Make’ or ‘Buy’ Decision for Policy Resources

In much of Williamson’s work the question is one of ‘make’ or ‘buy’. For my purposes, the decision is not one of ‘making’ or ‘buying’ public policy, for that decision is given – public policy is always made. What is not clear though, is whether it is in the legislator’s interest to ‘make’ or ‘buy’ the required inputs that go into the production of

any given policy. Does the legislator buy his or her computer on the market or hire a public bureau to make it? In the lexicon of the transaction cost analyst, this question is more precisely stated as one that asks how the legislator chooses to govern the contracting of policy inputs required to make public policy.

This is not a trivial point, as it goes to the heart of the special nature of public sector contracting in a representative democracy. In such an arena, the existence of a collective choice mechanism, *ceteris paribus*, changes the decision-making rules when compared to those of the private sector. In the Williamsonian institutional environment, firms are faced with the problem of maximizing the difference between the revenue they may generate by selling commodities on the market and the cost of producing those commodities (i.e., profit). Williamson discusses the strategy involved in minimizing the costs of production. The make or buy decision is central to his argument and can be summarized as follows. Given that transaction costs are positive and lead to the importance of contractual governance, the firm will purchase inputs, for instance raw materials, on the market such that the total cost of doing so is minimized. Total costs are the sum of procurement costs and governance costs. As production inputs become increasingly asset specific, for instance when required raw materials are available from only one supplier, bilateral dependency is created and imposes high contracting or governance costs. Williamson shows that under such circumstances, it may be efficient for the firm to withdraw from the input market and instead choose to make its own inputs in order to minimize total costs (perhaps through the vertical integration of the firm and the supplier of the raw materials).

In the public sector the ‘production’ decisions for public policy are restricted to Williamson’s ‘make’ choice. In other words, legislators cannot choose to ‘buy’ a given policy on the market as one could choose to either make or purchase an automobile. In fact, public policies such as the provision of public goods or the enforcement of regulations to overcome pollution externalities arise due to market failures of one sort or another (Pigou 1920). And yet governments of representative democracies do face the choice of whether or not to make or buy the *resources* required for public policies. Inputs in this sense can include such things as computers, public opinion polls, information about the expected impact that the policy may have on a particular industrial sector or the employment rate, schools required for a public education system, the absence of damaging protest, and so on. But whereas some of these inputs may be available on the market (e.g., computers or polls), other inputs might not be (e.g., the reaction of a given firm in response to some proposed policy). Legislators thus face the same choice as the Williamsonian actor, but in a slightly different context. For the legislator, purchasing a “ready-made” public policy is not an option. What is a fundamental consideration however, is the related issue of deciding how best to organize the procurement of policy inputs. Here, as in the private sector, contractual governance costs play a key role. It is to this issue that I turn my attention.

2.4 Governance Mechanisms in Policy-Making: Market, Policy Network and Hierarchy

Williamson (1996: 70-75) sets forth the combined neo-classical/transaction cost approach for governance in the private sector. In this framework, profit maximization is

the primary goal with revenue a function of output and total cost a function of output and asset specificity. When governance costs that rise over asset specificity are allowed for, Williamson shows that profit maximizing firms choose the level of output where marginal revenue equals marginal cost, and choose asset specificity such that the sum of production and governance costs is minimized. The special conclusion from this analysis is that as asset specificity has greater *total* cost reducing impact, internal organization is progressively favoured as compared to market organization (Williamson 1996: 75). But whereas in the private sector revenue is determined by market price and quantity of output sold, in the public sector there is no such mechanism. In fact, as was outlined above, the objective function for the legislator is not profit, but rather expected votes.

The net benefit to the legislator of a given policy is thus viewed as the difference between the gross benefit and the total cost of policy-making measured in expected votes. Because resources used for making policy will vary in terms of interest specificity and the associated costs of governance, the legislator must simultaneously choose the desired policy, the level of interest specific assets required to produce the policy, and the governance mechanism necessary to guard against post-contractual opportunism.

It is important to note that the benefit of a given policy is not independent of the specificity of the assets required for production as it was for the Williamsonian treatment in the private sector. One can see this by looking at the legislator's choice for the forest harvesting policy above. If the legislator values the absence of protest from the environmental group, he or she must account for the group's interest specific asset when writing the policy. The group's asset, of course, is only valuable with respect to the harvesting policy. Another policy such as could be written for back-to-work legislation for a group of striking postal employees, is unlikely to elicit a response from the environmental group (although it may well elicit response from another group such as a

labour union or consumer group). In other words, expected vote maximization rests not only on the policy but also on the specificity of the resources used in policy-making.

To further explain the legislator's choice, consider the following. Expected vote maximization is chosen over policy and resources and is a function of the benefit of the policy and the resources to the legislator (B), minus the total cost of procuring the resources including the choice of governance mechanism to attenuate contracting costs (C). Both benefit and cost rise over policy and resources. Given this, the legislator is left with choosing the optimal method of procurement and governance, choosing to make the policy when benefit equals or outweighs total cost.

I follow Park (1996) in examining the choice of procurement arrangement. The legislator chooses the procurement mechanism after considering the cost of hierarchical production (HPC) and hierarchy transaction costs (HTC), and the cost of market production (MPC) and market transaction costs (MTC). Hierarchy transaction costs include those that arise due to free riding, monitoring, and principal-agent problems; market transaction costs include those resulting from acquiring and processing information, monitoring and enforcing contracts, and adaption costs for contractual breach which rise as the condition of interest specificity deepens. Uncovering the total cost of procurement requires that one look at how the power of incentives and the ability to adapt to contractual disturbances affect the sum of production and transaction costs (Williamson 1985). The legislator therefore considers both when making his or her decision, choosing to buy policy resources when $MPC + MTC < HPC + HTC$, making them when the inequality is reversed. The overall result of considering both production procurement costs and transaction costs is that the legislator will choose to make policy

by governing contracts for resources in a cost-economizing manner.¹¹

Consider the following examples. Take the case of a legislator who requires information in the form of a public opinion poll to make some expected vote maximizing policy. Assume that the legislator does not possess this information exogenously and that organizing to act as a pollster is more costly than buying the information (i.e., $HPC > MPC$). Given that a market for polling data exists – a reasonable assumption in the modern context – the legislator can purchase polling data from a firm on the market. If the polling firms are all reputable, the data from any one firm is not interest specific. In other words, if a contractual disturbance occurs, for instance the chosen firm attempts to charge more than the agreed price for the data, the legislator can simply hire another firm. Alternatively, if the legislator attempts to pay less than the agreed price, the firm can withdraw its services and sell them elsewhere on the market (e.g., to the media, other legislators, etc.). While governance is not costless here as it may take time to hire another firm, its cost to the legislator is certainly lower than choosing to establish its own polling firm for this one piece of information. Thus, when interest specificity is low, cost-economizing governance can be maintained by the market (i.e., MTC is low).

Now consider that the legislator requires the same piece of information for the same policy, but that only one polling firm exists. In this scenario, the data is highly specific in that it cannot be obtained elsewhere. In the contract for the data, the firm knows that it is the only source for polling and can attempt to ‘hold-up’ the legislator by delivering the data only for a higher price than agreed to.¹² Given that the legislator requires the data for policy-making, he or she is faced with two options to resolve the

¹¹ It is important to note that policy-making does not necessarily take place at a single instant in time. As a result, one expects the legislator to consider both the short-run and long-run when making cost-economizing decisions.

¹² Again, I assume the legislator is not a monopsony buyer of the firm’s data.

contractual disturbance: sue the firm for breach of contract, or establish an alternative governance mechanism for the bargain. When resorting to the courts is problematic or very costly (i.e., MTC is high), it may be in the legislator's interest to appeal to the latter solution. For example, the firm and the legislator could vertically integrate (maybe 'nationalizing' the firm), or the legislator could organize him or herself for polling. Here, internalizing data production by establishing principal-agent relationships in a hierarchy such as the "Ministry of Public Opinion Polling", even with its associated costs (HTC), will facilitate more cost-economizing contractual adaptation. When the legislator requires very highly specific assets in policy-making, one can expect the institutional arrangement to take a hierarchical form.¹³

Finally, I return to the earlier example of the environmental group and the harvesting policy to examine governance by policy network. In this case, no market for the avoidance of environmental protest exists. The legislator cannot simply purchase avoidance with money as one can purchase polling data, nor is it reasonable to suggest that the environmental group can be 'nationalized' for protest avoidance. And yet the legislator may well value avoidance as a policy resource for the harvesting policy. As a result, an informal contractual arrangement must be established. Here, the trade is protest avoidance for favourable harvesting policy from both the legislator's and the group's perspective. As in the case of the market and the hierarchy, the network acts as a governance mechanism against contractual disturbance. The specific manner in which this occurs, however, is not as clear¹⁴. I leave this discussion until a later section,

¹³ This decision will be even more pertinent if the legislator expects to require polling data for other policies in the future. This may be an example where long-run considerations are important.

¹⁴ In fact, the failure to explain exactly how the policy network governs exchange is one of the most damning criticisms of the current policy network literature. I return to a more in-depth discussion of policy networks below.

concluding for the moment that the legislator will choose governance by policy network when the productive resources are more interest specific than the market can deal with, and less interest specific than would lead to bureaucratic supply.

The comparative advantage of a network in this situation is seen by looking at the balance between incentive intensity and bureaucratic control. The network retains some of the powerful characteristics of the market in that private benefits accruing to the group and the legislator are still separable, while at the same time efficiencies in producing those benefits are realized. Heuristically, one can demonstrate this by considering the cost of network production (NPC) and network transaction costs (NTC) relative to market or hierarchy costs: $NPC + NTC < MPC + MTC$, largely because MTC is very high due to market failure, while at the same time $NPC + NTC < HPC + HTC$, largely because HPC is very high.

Overall then, I argue that the legislator interested in expected vote maximizing policy-making faces a choice between three generic institutional arrangements for contractual governance. Further, I suggest that this choice is made by considering the desired policy, the nature of the resources required for making that policy, and the comparative ability of organizational design to deal with problems of opportunism in contracting. A more formal representation of these arguments is presented in the next section.

2.5 A Simple Formalization of Expected Vote Maximizing Policy-Making and the Choice Between Alternative Governance Mechanisms

In a world where transaction costs are zero, define $EV^*(s) = B^*(s) - C^*(s)$ as the

indirect function for a vector of policies, $s^* = s_1^*, s_2^*, \dots, s_n^*$ ¹⁵ which maximizes expected votes (EV). The legislator maximizes expected votes with respect to a benefit schedule akin to the voters' demand function for s , $B(s)$, and a cost function, $C(s)$, where $B'(s_i) > 0$ and $C'(s_i) > 0$. With full information and zero transaction costs, the legislator maximizes expected votes by satisfying the first order marginal conditions $\partial B^*/\partial s_i = \partial C^*/\partial s_i$, where $B^*(s)$ is the maximum political benefit to the legislator for given s , and $C^*(s)$ is the minimum political cost of the policy.¹⁶ It is assumed for simplicity that benefits and costs are separable, and because transaction costs are zero, the interest specificity of the resources need not be accounted for.

In the real world however, transaction costs are positive as Coase (1960) has emphasized, and thus all contracting forms yield $EV < EV^*$. The difference between EV and EV^* depends on the type of contract written and the corresponding choice of organizational form necessary to minimize contracting costs. In other words, the transaction cost model of expected vote maximization must account for the effect that interest specificity has on total policy-making costs.

Define k as the vector of interest specific resources required for making policy, and assume that legislators are risk neutral so that the focus is on the fulfilment of contracts rather than on risk avoidance. In the presence of contracting costs, expected vote maximizing can be written as a constrained optimization:

$$\max_{\{s, k, g\}} EV = B(s) - C_1(s, k) - C_2(g) \text{ s.t. } k = k(s, x) \quad (1.1)$$

¹⁵ The legislator makes his or her choice with reference to opposition platforms. For my purpose, I assume that opposition platforms are given and constant in order that I focus exclusively on choices made in policy-making rather than on the equilibrium outcome in the competition between incumbent and opposition parties.

¹⁶ Note: I assume the standard second order conditions apply where d^2EV is negative semi-definite subject to $k - k(s, x) = 0$ (see Chiang 1984: 383-385).

where $C_1(s, k)$ is defined to include the effect that interest specificity has on resource procurement cost, $C_2(g)$ is governance cost as a function of governance structure indexed by g (g is exogenous here), and k is a function of s and a set of exogenous variables x which include such things as the ability of interest groups to overcome collective action costs in the production of k . Here, to simplify, total cost is separable in k and g . The first order conditions for the constrained optimization are as follows:

$$\mathcal{L} = B(s) - C_1(s, k) - C_2(g) + \lambda \{k(s, x) - k\}$$

$$s: \partial \mathcal{L} / \partial s = \partial B / \partial s - \partial C_1 / \partial s + \lambda \partial k / \partial s = 0$$

$$\lambda = (\partial C_1 / \partial s - \partial B / \partial s) / \partial k / \partial s$$

$$k: \partial \mathcal{L} / \partial k = -\partial C_1 / \partial k - \lambda = 0$$

$$\lambda = -\partial C_1 / \partial k$$

$$g: \partial \mathcal{L} / \partial g = -\partial C_2 / \partial g = 0$$

The first order conditions reveal that for a given governance mechanism, the legislator produces policies until the point where the marginal benefit in expected votes is just equal to the sum of marginal cost of providing these policies inclusive of the marginal cost of overcoming the interest specific resources used. This implies that taking the choice of governance mechanism as given, the legislator will choose some optimal s^* and k^* to maximize expected votes.

However, as Figure 1 illustrates, given s^* and k^* , the total cost of policy-making can be altered by choosing between different governance mechanisms. The legislator's optimal solution thus requires an additional step: the choice of governance structure that minimizes cost for any s^* and k^* . Under the reasonable assumption that $C_2(g)$ is smallest for market systems when k^* is low and then increasing in k^* through network mechanisms to hierarchy, the legislator can be expected to optimize total production cost

Figure 1. Total cost for a given policy – case in which cost separable in k and g .

where governance cost is at a minimum (*cf.* Williamson 1991). In other words, given that the relationship between $C(s, k, g) = C_1(s, k) + C_2(g)$, the legislator will govern contracting by market (M) when k is low, by policy network (PN) when k is moderate, and by hierarchy (H) when k is high.

The framework outlined herein is valuable in that it directs attention to the importance of differentiating alternative governance mechanisms for the procurement of policy inputs in policy-making: the market, policy network and hierarchy. The relationship between cost and structure depicted in Figure 1 is thus illustrative of the situation where the total cost of policy-making varies with organizational form. Of course investigating the form of this relationship is also an essential task. In the following section, I contribute to this task by focusing on the case of the policy network.

2.6 Governance by Policy Network: The Two-Actor Case

I discussed above that the cost of governance rises over interest specificity. As an illustrative argument this conclusion is valid as it differentiates between alternative organizational forms, namely the market, policy network and hierarchy. For the case of some $k^*(s^*, x)$ in Figure 1, the policy network is chosen as the cost-minimizing governance structure. Whereas in previous literature the existence of policy networks has been given *exogenously* (Dowding 1995: 141), the current examination argues that when contracting for resources in policy-making is viewed through the lens of transaction cost analysis, the policy network emerges *endogenously* as one possible form of governance mechanism.

However, it is also important to distinguish specific differences between governance mechanisms so that I might establish that the discriminating alignment

hypothesis is valid for an inquiry into policy-making, and that this inquiry shows that the cost of governing the procurement of policy inputs will vary for the expected vote maximizing legislator (*cf.* Lueck 1991). Given my general interest in policy network forms of governance, I begin by looking at the generic two-actor form of the policy network organization, showing that from the legislator's perspective the efficiency of implicit bargaining is affected by the level of interest specificity introduced above. Or, stated alternatively, inefficient bargains arise when the optimal level of interest specificity cannot be reached through implicit trades as organized in the policy network.

The first order conditions above reveal that for expected vote maximizing policy, the legislator must consider the productivity of the policy, and the total cost of the policy as interest specificity is allowed to change. This is a fundamental point, as it isolates the effect that interest specificity has on the legislator's contracting choice. The legislator will contract for interest specific assets only if the benefit of doing so is positive and the associated governance costs can be met.

In the two actor policy network, this conclusion plays itself out in the following manner. Assume that for some policy and interest specific resource, expected vote production is positive. The legislator thus has an incentive to establish an effective mechanism governing the exchange for the interest specific resource. Such a case will arise, for instance, when the interest specific asset provides the legislator with information in one form or another about hard to understand policies.

Consider that the legislator has decided expected votes will be enhanced by a policy that is designed to guarantee access to public buildings for disabled persons, and that the legislator is his or herself able-bodied. The legislator has no personal experience with the requirements for an access policy, and therefore must rely on information provided by those individuals who do have the necessary experience. It stands to reason

that such individuals will have an interest in the precise manner in which the policy addresses access (e.g., grade of access ramps, number of access points, and so on). If individuals are able to overcome the costs of collective action and enter the policy-making arena, then an implicit contract might be written between the legislator and the group that exchanges information about access experience, provides public support, or enhances the legislator's credibility to voters, in return for a particular access policy. Because it is reasonable to assume that no market for such experience exists, the group is said to have an interest specific asset as they are the only credible source for experience. And yet it is precisely for this reason that contractual governance is important to both parties.

The governance problem rests on the possibility that either party to the contract will behave opportunistically (Williamson 1996). While this problem is in part based on adverse selection *ex ante*, under conditions of moderate to high interest specificity, concern about *ex post* disturbances is more important. For instance, *ex post* opportunism could involve the group withdrawing its political support for the access policy even if the policy is written in the way agreed to *ex ante*. If there is no penalty to the group for behaving in this manner, the legislator may face a hold-up problem where the group can continue to ask for 'better' policy (however defined), perhaps penalizing the legislator if he or she fails to do so by public protest. Alternatively, the group may offer public support or provide valuable information to the legislator *ex ante*, only to find that the policy once written does not match the legislator's promise. Again the result may be public protest. In either case, both parties to the contract have a stake in maintaining the post-contractual productivity of the policy. For the legislator productivity is measured in terms of expected votes; for the group it is measured in terms of the utility gained from the given policy.

Governing against post-contractual opportunism is thus vital for implicit contracts in the policy network. Governance tools will vary, but may include such actions as both parties publicly announcing the bargain prior to implementation of the policy, bargaining in a public forum, or establishing that the expectation of future trades is contingent on the successful completion of the current contract. Regardless of the specific mechanism, efficient contracting requires that *some* mechanism must be established to avoid *ex post* opportunism. If, however, an efficient mechanism cannot be found, the legislator faces one of two options: avoid the policy altogether, or choose to organize via an alternative governance form. If the bargain discussed above cannot be guaranteed in the policy network then it may be possible for the legislator to hire the group, or some of its members, and instead ‘make’ his or her own experience. This is, of course, the hierarchical form of organization. One can expect the legislator to make this choice when the vote productivity of the interest specific asset is high enough to offset the costs of bureaucratization, *and* there are no alternative governance mechanisms available at a lower cost.

Overall then, I argue that the general two-actor policy network is a governance organization where both parties to the bargain have an interest in protecting the post-contractual productivity of the chosen policy. For the legislator, expected vote maximization rests on this protection. For the group, enhancing utility through some given set of policy provisions must be guaranteed. The independent role of the policy network is as an organizational governance mechanism for the fulfillment of implicit exchange. The exact shape of the network will depend on the nature of the contract written, and is in some sense case-specific, although as I suggest in a later chapter ideal-types of policy networks might be considered. Regardless of shape, the policy network acts as the mechanism by which the post-contractual productivity of the interest specific

asset is maintained. In the solution to the legislator's general problem the policy network is seen as an expected vote maximizing governance mechanism. But how, precisely, does the policy network act as an institution for protection against post-contractual opportunism? I address this important issue in the next section.

2.7 Protecting Against *Ex-Post* Opportunism in Policy Networks: Trust and Reputation, Hostages, Sunk Investments, and Bilateral Exchange

I am left then with the task of explicitly defining the manner in which the organization of exchange in a network form of governance structure affects protection against post-contractual opportunism. Simply couching the role of the network in these terms separates the current study from those that have gone before it. More importantly though, by uncovering the special nature of exchange in the policy network I also present an argument about the independent role that governance plays in policy-making.

What defines network governance as separate from market or hierarchical governance? As Williamson (1991) has intimated in his analysis of the private sector, the answer lies in the different manner in which incentives and remedies to contractual disturbances are organized.

The policy network exists to relieve the pressures of post-contractual opportunism. As such, it is a mechanism or institutional arrangement designed to guarantee the sanctity of informal contracting in policy-making between the legislator and private actor(s). The network is not an independent third-party that adjudicates resolution to contractual disturbances, it is not a formal mechanism of nested principal-agent relationships like the bureau, and it is not a market where supply and demand determine the clearing price for policies and resources. It is an informal arrangement for self-enforcing contracts between parties who have a vested interest in the allocation and

distribution of policy resources that are defined by their interest specific character. The existence of policy networks, and their associated informal contracting, is based on the comparative advantage with which they guard against post-contractual opportunism as the interest specific nature of policy resources is allowed to change.

The existence of mechanisms to govern self-enforcing contracts between actors characterized by intended rationality is well established. Whether directed towards the study of institutional design (Rowe 1989; Goodin 1996), the relationship between economic performance and institutional change through history (North 1990), the importance of alternative property rights systems (Barzel 1997), the emergence of informal institutions in response to the insufficiency of formal ones (Axelrod 1984; Shepsle 1996), or the examination of case-specific examples of the interrelationship between governance mechanisms and economic behaviour (Rubin 1990; Frye 1995; Ellickson 1996; Klein 1997a), there is a common understanding amongst scholars about the importance of self-enforcing agreements: the existence of mechanisms to govern informal exchange provides actors with the opportunity to reap gains-from-trade that would not be possible in the absence of such mechanisms.

To this point in the examination of self-enforcing agreements there has been no single theory presented. Indeed, as Klein (1997a: 9) suggests:

There can be no comprehensive theory of how voluntary interaction might police itself, nor a categorical claim that voluntaristic systems will always discover a way to overcome their trust problems, nor even airtight demonstrations in particular human circumstances that remedies will be forthcoming. As with questions of the invisible hand, the issue of the invisible eye is always one of adequacy, viewed in comparison with alternative imperfect arrangements.¹⁷

There is, however, an important common element upon which examination of self-

¹⁷ Klein (1997) cleverly refers to the “invisible eye” as the mechanism in contracting analogous to the “invisible hand” in perfect markets.

enforcing contracts is based.

Self-enforcing implicit contracts, by their very definition, are consummated in the absence of any third-party or formal enforcement. As a result, each partner to the exchange has two options when considering their strategy in the bargain, he or she can behave with integrity or cheat. As Frye (1995: 39) discusses, “if the game is played once, then each trader has an incentive to cheat. As both can foresee this logic, they will have little incentive to trade.” However, as was already indicated, it is a well-established fact that throughout history self-enforcing contracts have been invaluable in shaping economic performance (see Klein 1997a). The central explanation for this is that there are more often than not significant benefits for both parties to behave with integrity. Research on the structure of games – most notably the oft referred to prisoner’s dilemma – shows both the incentive to behave dishonestly under certain circumstances (e.g., finite game structure), and the existence of self-enforcing remedies that rely on cooperative strategies such as “tit-for-tat” (Axelrod 1984).

Some authors have indicated that market mechanisms can play a role in contract enforcement. As Klein and Leffler (1997: 290) argue, “the value of lost repeat purchases which motivate transactors to honour their promises may be the cheapest method of guaranteeing the guarantee.” However, as discussed above, when the assets being exchanged cannot be found on the market, traders must rely on alternative mechanisms for contractual governance. In particular, when interest specificity is high and transaction costs are positive, trust between actors, and their reputation, is vital to realizing gains-from-trade. “Thus, concern with getting a bad reputation that reduces future possibilities for profitable transactions can limit reneging. Effectively, (this) removes the incentives for opportunistic behaviour by creating a cost offsetting the short-term gains of opportunistic behaviour” (Milgrom and Roberts 1992: 139).

The situation of relatively high interest specificity is, I argue, the case of the policy network. As such, one would expect trust and reputation, culture and norms, to play a significant role in the enforcement of policy network transactions. Not surprisingly, other have already made this claim with respect to policy networks specifically (e.g., Pappi and Knoke 1991; Hindmoor 1997), and networks in other settings (e.g., Breton and Wintrobe 1982; Coleman 1990; Powell 1990; Lorenz 1991; Landa 1994). Trust (reputation) in this sense acts in two ways: it offers members of the network common knowledge about defections, and penalizes untrustworthy agents by removing them from the exchange community (Lorenz 1991: 190). But whereas trust and reputation are obviously important in repeated informal exchange, there is a tautological dimension to studies that rely on their existence to explain economic behaviour which suggests that trust and reputation are preconditions for self-enforcing contracts – the success of which further enhances their existence.¹⁸ While I agree that trust (reputation) can and does act as a powerful guard against post-contractual opportunism in the policy-making arena (see also Dixit 1996: 72), I find fault in the assumption that reputation (trust) is the mechanism upon which all contractual governance rests. Following Mercuso and Medema (1997: 141), I instead argue that it is the “specific contractual agreements (which) constitute the institutional arrangements or governance structures which determine production, exchange, and distribution.” Trust and reputation will certainly help in determining the success of contractual arrangements (given that at least one successful trade has been consummated), but they should not be seen as necessary preconditions for self-enforcing informal agreements, but rather as one possible variance. One must look additionally at the range of specific contractual instruments available to

¹⁸ Two notable exceptions are the studies presented by Breton and Wintrobe (1982: Ch. 4) and Coleman (1990: Ch. 8) who both argue that trust and reputation are “capital assets”, the level of which can be affected by rational actors through investment or disinvestment.

legislators and private actors in the policy network.

I appeal again to the discussion of the special nature of contracting in policy networks as defined by the existence of interest specific assets. Interest specificity in contracts for policy resources between legislators and their suppliers leads to the potential for opportunistic behaviour that was earlier characterized as the ‘hold-up’ problem (*cf.* Williamson 1979; 1983; 1985). As Milgrom and Roberts (1992: 137) state, “it is the specificity of assets together with imperfect contracting that lies at the core of the hold-up problem.” Beyond trust and reputation, other mechanisms exist to combat the hold-up problem. I argue that through an application of the evidence of self-enforcing contractual arrangements in the private sector to the case of policy-making, I will be able to characterize governance in policy networks much more specifically than has been done before.

Rubin (1990: 29-36) lists the private-sector governance mechanisms for self-enforcing contracts and describes them as follows:

Hostages: ...a valuable asset which will be forfeit if a contract or agreement is not honoured...the most important hostage for guaranteeing performance is a stream of quasirents¹⁹ associated with some fixed investment in a transaction. This stream of quasirents will be lost if the relationship is broken...(31-32);

Sunk Investments: ...an investment which is sunk (i.e., already made) but which will not accrue to the other party...we may call this *nonsalvageable* capital...(33);

Bilateral Exchange: ...reciprocal exchange. Each party buys some specialized product, or product requiring a specialized input, from the other and sells a similar product to the other. The reciprocal nature of the transactions automatically provides both parties with hostages to guarantee the behaviour of the other...(34).

¹⁹ Quasirent is defined as a “return on fixed investment” (Rubin 1990: 170).

To consider the manner in which governing exchange by hostage, sunk investment, and bilateral exchange might manifest itself in the policy network, consider the earlier example of the legislator and group interested in an access policy for disabled persons.

In the informal exchange between the legislator and the group, both parties face the possibility that the other will behave opportunistically *ex-post*. The legislator fears the group will protest even if the policy is written as agreed to *ex ante*; the group fears the legislator will not institute the favourable policy. One recourse the actors have to protect their bargain is to offer a ‘hostage’, the value of which decreases if the agreement is broken. The group could publicly announce its support for the proposed policy prior to the policy actually being written, or, perhaps, agree to a policy implementation strategy that is phased in over time (e.g., 10 access ramps this year, 15 next year, 20 the following year and so on). In either case, the group reaps a ‘quasirent’ from honest behaviour – enhanced reputation in the first case,²⁰ ‘more’ policy in the second that will act as a signal to the legislator that opportunistic behaviour has a price. The legislator, whom it is safe to assume is also interested in reputation can similarly announce the new policy publicly, and might demonstrate his or her commitment to the policy by referring to it in an electoral campaign where the viability of the reference is dependent on the success of the policy, or tie future policy-making to the success of the immediate bargain perhaps by establishing a ‘pilot project’ to prove good-faith bargaining to the group. By offering hostages, the partners to the bargain can increase the cost of opportunism, thus decreasing the probability of its result.

Another governance tool available to both the group and the legislator is the use

²⁰ Here one sees an example where investment in reputation can act as an incentive for honesty. If the group can establish *ex ante* that it values its reputation, then enhancing reputation comes only by truthful contracting. As outlined above, however, reputation was not seen as a precondition for the exchange. The opportunity for exchange actually rests on the group owning the legislator’s required interest specific asset.

of sunk investments. From the group's perspective, they might indicate their investment in research, the cost of disseminating information, or even the cost of collective action and bargaining, as evidence of capital expenditure that is unrecoverable in the absence of the policy²¹. The legislator can also indicate investment in nonsalvageable goods. For instance he or she might indicate good-faith to the group by hiring workers to construct the access ramps prior to the policy agreement. In this situation, if the legislator reneges on the bargain the potential benefit of the policy in terms of expected votes is lost, in addition to some further cost that will be paid to the construction workers for breach of formal contract. For both parties then, investment in sunk capital can act as an indicator of the intention to fulfil informal contractual agreements. As with hostages, the existence of sunk investments raises the cost of opportunistic behaviour.

Finally, the policy network appears to be a prime location for bilateral exchange. In fact, it is reciprocal exchange – interest specific assets for public policy – that defines the very character of trades in the network setting. In situations where the exchange is simultaneous, hostages are created instantly for both parties and act to guarantee the trade. However what happens if the more prevalent case is considered where trade takes place over time and even bilateral exchange is subject to problems of opportunism in the 'last-period' (Rubin 1990: 30)? At first glance policy network trades might appear to suffer from a last-period problem. However, no known last-period exists (especially since the legislator's general problem is to avoid a last-period at all) and thus self-enforcing bargains that involve reciprocal exchange can be entered into.²² The group has

²¹ One could envision a statement to the legislator such as: "Of course we'll be honest. We've flown all this way to talk to you, invested this much money in meetings and gathering the information; our own utility is dependent on our being faithful to the bargain."

²² Note: A last-period problem could occur when the legislator is about to retire and thus might behave opportunistically without threat of reprisal. However, such a situation would damage the position of the legislator's party which, it is reasonable to assume, will design forms of internal discipline to avoid the

an incentive to perform which satisfies both its own self-interest and part of the legislator's; the legislator has a similar incentive.

From the legislator's perspective one possible effect of not living up to the bargain is that not only does the probability of sanction rise (e.g., protest), but the group may end up voting for another candidate. He or she thus has an incentive to behave honestly in the long-run. The group also has an interest in long-run honesty. This is due to the fact that they actually want the policy to be effective, and know that their dishonesty may jeopardize policy success. In a sense, bilateral exchange leads to *bilateral dependency* in informal policy network contracting.

I conclude this section with a further comment on the role that reputation (trust) plays in the policy network. As indicated earlier the range of governance instruments is not limited to, nor predicated on, the existence of 'good' reputation. Having said this, it is apparent that concerns for reputation are closely guarded by policy network actors. Reputation can thus play an important role in the governance of exchange, acting as a 'hostage' or 'sunk investment', and/or making bilateral exchange less costly.

There is evidence that a network structure with its degree of informality and flexibility is particularly adept at communicating reputation, once formed, when compared to alternative organizational structures (Williamson 1991: 37). When considered in addition to the existence of specific contractual arrangements and the very requirement for legislators to engage in different forms of exchange given the variable interest specificity of policy resources, one is left with a convincing argument that mechanisms for governance of informal exchange in the policy network are a vital aspect of the special nature of contracting in policy-making.

last-period problem.

2.8 Conclusion

The chapter argued that there are two fundamental conclusions that may be drawn from a transaction cost study of contracting in policy-making. The first, is that in a positive transaction cost environment such as that for policy-making, theory must account for the interest specificity of resources and the associated requirement for, and cost of, governance structures to protect against post-contractual opportunism. The case was made that the legislator has three general governance options: the market, the policy network, and the bureau. Which option is chosen depends on the nature of the resources and the availability of an effective contractual arrangement. This is an important conclusion as it establishes that the choice of governance mechanism can be viewed as being endogenous to a model of policy-making from the transaction cost perspective.

Secondly, I discussed the specific case of the policy network and the generic two-actor model. I argued that policy network actors have at their disposal several instruments that are invaluable for governing against *ex-post* opportunism, including hostages, sunk investments, bilateral exchange, and reputation. In this argument, I advanced the proposition that when self-enforcing contracts are used in policy-making, all actors have a vested interest in the design of safe-guards to protect the post-contractual productivity of interest specific resources. The structure of exchange in the policy network plays an independent role in guaranteeing the sanctity of bargains in policy-making.

The next step in the research agenda is to discuss the exogenous conditions under which policy networks are likely to be found in policy-making, and to examine this conditions empirically. To do this, Chapter 3 looks at the nature of the resources required in policy-making, the character of private actors in exchange, the effect that the legislator's electoral position might have on network governance, and the use of specific

governance mechanisms. A series of propositions are developed, several of which are tested against evidence gathered from the Canadian *Lobbyists Registration Act*.

Chapter 3

Exogenous Conditions for Policy Network Governance: With Application to the Canadian *Lobbyists Registration Act*

3. Introduction

In Chapter 2, I argued that the study of policy-making can be framed as an analysis of alternative contractual governance arrangements for the procurement of interest specific assets. In the ‘make-or-buy’ decision for productive policy resources the legislator chooses to contract along a continuum of interest specificity where, I suggested, low interest specificity leads to market governance, middle-range interest specificity leads to network governance, and high interest specificity to hierarchical governance. In general, the choice of governance mechanism is *endogenous* to this transaction cost model of policy-making.

Chapter 3 extends the general approach of Chapter 2 by investigating the *exogenous* conditions underlying the nature of interest specific assets and their effect on the choice of governance structure. To explore these conditions I consider four issues: the nature of the required policy resources, the nature of groups, the legislator’s electoral position, and the mechanisms used in governing against the hazards of opportunism. I treat the market as the benchmark against which propositions about the expectation that the legislator will choose a more hierarchical governance mode are developed. This is implicitly a consideration of the conditions under which the policy network form of organization will be chosen as opposed to the hierarchy. I suggest that interest specificity is a crucial factor in the choice between market and policy network.

The reader should therefore be aware that the problems of governance will deepen as the exogenous conditions identified below are increasingly difficult to manage through implicit contracting, likely to the point where hierarchy is chosen. Still, I suggest that the propositions drawn from the following discussion are a useful indicator of when one can expect to see the policy network emerge as the viable organizational form in policy-making. Further bureaucratization is evidence of the requirement for transacting partners to move away from the autonomous nature of the market, through the implicit nature of the policy network, towards the formality of the hierarchy as governance is increasingly difficult to secure.

In keeping with the recent literature on the choice of governance mechanisms in alliances between firms (Joskow 1988; Gulati 1995; Park 1996; Oxley 1997), I do not offer concrete hypotheses that the policy network will *necessarily* be chosen, but rather I examine the stylized conditions likely for its choice. Whether the policy network is *actually* chosen is a question for case-study research (Chapter 5). However, in what follows below, I retain the ultimate advantage of transaction cost theory by maintaining the strictly comparative institutional approach (*cf.* Oxley 1997).

It should be noted that the special nature of implicit contracting in the policy network presents a strong challenge for the researcher when it comes to empirical testing. Policy network contracts are implicit contracts and are not, by definition, written down in a 'database' of network trades. Developing tests for implicit contracts therefore requires the researcher to infer their existence from secondary sources. As will become clear below when I use the *Lobbyists Registration Act* as the source for testing some of the

propositions developed in this chapter, a unique (if not ironic) symmetry exists between the researcher's task of inferring the existence of implicit contracts and that of the transacting parties who themselves must infer contractual obligations in the policy network. As a result, it quickly becomes apparent that an opportunity for significant future research exists – research that will be crucial to the furtherance of the transaction cost approach to policy-making. However, in the absence of a more complete database of implicit exchange in policy-making, I suggest that my work offers an essential first step.

Chapter 3 is organized as follows. First, I examine the idea that different types of policies will require different types of resources in policy-making. I argue that the choice of policy will affect the character of productive resources, in turn, affecting the choice of governance mechanism (Section 3.1).

The next sections examine the conditions that determine the value of assets to the contracting parties. For private actors I argue this value is related to how specific assets are created and maintained. The character of the firm or group, its mandate and strategy, can be expected to affect credibility in contracting with the legislator through its demonstration of the ability to overcome the costs of collective action (Section 3.2). For the legislator, political competition may lead the interest specific asset to be valued beyond its use strictly for policy production. This is expected to be particularly important when the legislator uses the asset as an informational signal to voters (Section 3.3).

I also examine conditions under which post-contractual opportunism can be successfully managed. I argue that the use of hostages, sunk investments, and bilateral exchange impact on the structure of governance, as does the scale and scope of the

bargain (Section 3.4).

Finally, I test three of the propositions against data gathered from the public registry of the Canadian *Lobbyists Registration Act*. The results of a multiple ordinary least squares regression indicate empirical support for the arguments that policy resource type affects governance structure, and that group structure affects governance. I conclude with a comment on the importance of developing new sources of empirical evidence to test the remainder of the propositions, and offer a brief introduction to the next chapter of the dissertation.

3.1 Policy Choice and the Nature of Policy Resources

The model developed in Chapter 2 argued that given a particular policy and level of interest specificity, the legislator will choose to govern contracts on the market or in a network or hierarchy to minimize the total cost of policy-making. Here, I investigate how the choice of policy affects the character of the requisite resources, and how costs can be reduced by appropriate choice of governance structure. Analysis reveals that certain types of policies can be expected to result in contracting for resources in the policy network, where other types will not.

Many policies can be characterized by the degree to which they rely on search or experience resources for their formulation.²³ In the literature on information and advertising, Nelson (1970) argued that commodities can be defined on the basis of

²³ In actual fact, it is likely that many policies will rely on both search and experience goods. The abstraction here is based on my continued desire to isolate the legislator's choice of governance mechanism.

whether they are search goods or experience goods. Search qualities are those that can be determined prior to purchase; experience qualities are known only after purchase, that is they must be experienced. For example a consumer can determine the mass of an apple prior to purchasing it, but he or she cannot determine taste until the apple is eaten. As a result consumers will invest in and respond to information such as advertising that relates to the experience qualities of goods (Nelson 1978).

Staaf (1978: 152-53) extends this analysis by asserting that search and experience qualities are also important in the provision of public goods:

The individual consumer ultimately knows what is quality output in terms of his health, his automobile, or his television...However, in the case of evaluating the quality of most publicly provided goods, the individual must rely completely on expert opinions, or is at least influenced by them...How does one judge the output of public agencies that produce such nebulae as health, education, and welfare?

One obvious answer is to rely on expert opinion after or during the time public goods are provided, as Staaf implies. A problem with this is that much of the pertinent information about public output is controlled by the same organization that produces the output, namely the government (Staaf 1978). Thus it is difficult for any one individual to judge the experience qualities of public goods, even if they are interested in such a judgement (e.g., to be informed at the ballot box – a topic I return to in Section 3.3).

It is a fair assumption that legislators charged with the responsibility for designing public policies are faced with the same challenge as they choose to make or buy productive policy resources. If the required resources are themselves experience goods, legislators are more likely to have to rely on other actors' experience in policy-making. My earlier example of the access policy is a case in point. Here, the legislator depends on

the experience of disabled persons to formulate the policy. One can expect then that in designing experience policies, those whose success can only be determined by actually providing the policy, the legislator will require experience resources. Search policies on the other hand, those whose success can be determined *ex ante*, will require search resources.²⁴ The type of policy thus has a direct effect on the type of resources necessary for policy formulation.

The implication of this for the dissertation is whether a correlation exists between policy-type and the choice of organizational governance mechanism in the legislator's general procurement problem. More precisely, any correlation between policy field-type and organizational choice will actually rest on an underlying correlation between field-type and the level of interest specificity of vote-productive resources. That is, if given policies require experience resources, and if experience resources are generally interest specific resources, then a positive correlation between field-type and organizational choice is likely to exist.

The rationale for this rests on one of the central arguments of the previous chapter. The reader will recall that when it is difficult to purchase policy resources in private markets – that is when policy resources deepen in terms of their interest specific character – the legislator will align contracts with non-market governance forms. The argument I advance here is that experience resources, which are tied to experience

²⁴ For example consider income tax policy. The legislator knows, *ex ante*, that raising the income tax rate will result in increased public revenue. The legislator does not require the experience of taxpayers to determine this result, and can instead rely on search resources e.g., an x% increase in the tax rate will lead to a corresponding increase in tax revenue adjusted for the effect of taxation on economic activity.

policies, can be expected to have a stronger interest specific character than search resources.

The reason for this claim is quite straightforward: for the legislator, an actor's experience with a given policy (or potential policy) is unlikely to be easily redeployed to, or substituted for, experience with an alternative policy (or potential policy). For example, not only is the environmental group's experience with the proposed harvesting policy unique when compared to the logging firm's experience, both actors' experience will be unique when compared to another policy (e.g., dairy policy). In other words, each actor's experience is interest specific. And given that interest specificity affects governance choice as discussed previously, I suggest that procuring vote-productive experience resources is more likely to be governed by the policy network. Essentially, this is an argument that the type of policy written will have an exogenous effect on the type of resources required in policy-making and the associated choice of governance mechanism – an argument captured in Proposition 3.1.

Proposition 3.1: Policy networks are more likely when the resources required to formulate expected vote maximizing policy are experience goods.

It is expected that policy networks emerge as a more viable governance mechanism for procuring policy inputs when inputs are increasing in experience qualities. How far towards hierarchical organization governance will go is dependent on at least two important factors: how successfully network governance can protect against post-contractual opportunism, and the ability to produce experience hierarchically. Transaction cost theory predicts that the choice will depend on the comparative cost of

the alternatives. A further treatment of Proposition 3.1 appears in Section 3.5.3 below.

3.2 Groups, Collective Action and Investments in Interest Specific Assets

The reader will recall that earlier I defined interest specific assets as those that can be used by an actor to engage in specific courses of action with political consequences. Implicitly, this definition assumed the existence of the interest specific asset(s). While this is a reasonable presumption for a model of the legislator's choice between alternative governance mechanisms *given* that resources exist, a comprehensive examination of contracting for policy resources requires that one look additionally at how interest specificity is created and maintained by groups.

The resources used by legislators to produce public policies are not latent, that is they must be produced. This is true for all resources independent of their level of interest specificity. Marketable resources such as computers and non-marketable resources such as protest are both produced; computers in a firm, protest in a group. As elsewhere, I am interested here in discussing the production of policy resources of this second kind – the kind that cannot be bought and sold on markets due to their interest specific nature.

The owners of policy resources are required to make investments in the creation and maintenance of interest specificity for political value. For the firm making computers, investment in political value is not a priority because it sells its product on the market. Whether a legislator or a student purchases the computer is not an issue for the firm. However for the interest group who trades its protest for policy, investment in interest specific resources is a necessity if the resources are to be politically valuable. If

the mandate of the group is to affect policy change, it *must* be concerned with the identity of trading partners. Thus the manner in which interest specificity is created and maintained is not only a vital issue for the group itself, but also for those partners it exchanges with.

As a general rule, politically valuable policy resources are created and maintained through collective action.²⁵ Thus the viability of interest specificity is subject to many of the perils facing all collective actors, including free-riding, potentially sub-optimal levels of public good provision, and difficulties in maintaining group privilege (Olson 1965). All groups which form to lobby the legislator for favourable policies must therefore deal with collective action problems. The rationale for creating a politically valuable resource, either economic or non-economic, is independent of the requirement for investment in guaranteeing its provision by groups. As a result, I argue that creating and maintaining interest specific policy resources requires groups, first and foremost, to overcome the costs of collective action.

The costs of collective action have been dealt with at great length in the literature and need not be recounted here (see e.g., Olson 1965; Buchanan 1965; Axelrod 1984; Ostrom 1990; Sandler 1992). What is important is to acknowledge that collective action is not free and that the successful group will have developed means of overcoming costs that might ordinarily prevent group formation, including devising institutional rules or

²⁵ This is not to suggest that autonomous individuals do not or can not have an effect on the policy process. In fact, one would expect individuals to make similar sorts of investments in policy resources as groups. I restrict my discussion to groups simply in an effort to be consistent with the vast literatures on lobbying, pluralism, and policy networks.

tying public good production jointly to private good production (Sandler 1992). Of course the degree to which costs are dealt with will vary across groups, depending on variables such as the type of good produced (e.g., excludable vs. nonexcludable) and group technology (e.g., weakest link vs. best shot). In other words, some groups are better at dealing with collective action than others, and it stands to reason that the group interested in securing the viability of their policy resources will invest in dealing with the problems inherent with collective action.²⁶

Consider the group's strategy with respect to investing in interest specific policy resources. Knowing that the only time its resources will have political value is when they are valuable to legislators, the rational group will invest in overcoming the cost of collective action when they have a net positive expectation that their resources will be productive to current or future legislators.²⁷ From the group's perspective, it will want to demonstrate to the legislator that it can deliver the required resource. Such a demonstration can take either form (or both) of what I call a *technical* or a *behavioural* demonstration of investment in the interest specific resource prior to exchange.

A technical demonstration refers to an attempt by a group to demonstrate that it has made investments in overcoming the costs of collective action. Such investments could include indicating the design of institutional rules such as the joint production of

²⁶ This argument is based on the assumption that the group which is unable to overcome the cost of collective action will be unable to produce valuable policy resources, or will do so inefficiently. The implication of this would be that such a group could not reap gains-from-trade in policy-making.

²⁷ I take an instrumental view of interest groups here, that is they form in order to attempt to influence public policy. Alternative views such as one that would try to uncover the psychological benefits of group membership or the meaning of group membership are beyond the scope of the current study and while I acknowledge them, they are ignored.

private benefits accruing to group members if and only if they take part in the provision of the group (public) good. An interest group might be able to indicate prior to exchange that it has the technical capacity²⁸ to deliver its resource by showing the legislator that formal group rules establish that members have a private incentive to follow a leader's directions. Alternatively, the group might demonstrate that it is privileged and that it will be able to generate the public good. Irrespective of the form of this demonstration, I argue that if a group is able to prove investment in its technical capabilities to the legislator then there is a greater chance that it will be involved in exchange. Given that the resource being exchanged is interest specific, Proposition 3.2 applies.

Proposition 3.2: Policy networks are more likely when the group can demonstrate technical capacity to overcome collective action problems to the legislator.

A behavioural demonstration is a group's ability to prove that it can deliver a resource by referring to historical behaviour. Also evidence of technical capability, a behavioural demonstration to the legislator is indication that a promised form of behaviour has been delivered in the past, either as evidence of the exact behaviour (e.g., protesting another legislator over a similar issue), or as a proxy of potential behaviour (e.g., holding public rallies). The strategic group will want to be able to make reference to its own behaviour as a means of proving to the legislator that it has successfully overcome collective action problems in the past, and that it will likely be able to do so in the future. Since the reference here is once again to behaviour regarding interest specific resources, Proposition 3.3 follows.

²⁸ Technical capacity in this regard refers only to the capacity to act collectively.

Proposition 3.3: Policy networks are more likely when the group can demonstrate to the legislator its ability to overcome collective action problems by reference to historical behaviour.

Note that Propositions 3.2 and 3.3 imply that policy networks will be required even when the groups are able to demonstrate their ability to overcome collective action difficulties. The reason for this is really quite simple: groups are producing *interest specific* resources that the expected vote maximizing legislator cannot procure on the market. As a result, any transactions of even moderately interest specific resources cannot rely on market mechanisms to protect against opportunism. As identified earlier, I argue that when the condition of interest specificity is not extreme, the policy network will be chosen governance organization.

Also implicit in Propositions 3.2 and 3.3 is the argument that a behavioural demonstration – which also indicates technical capacity – is different than a simple technical demonstration. The reason for this is that a behavioural demonstration reveals both the ability to overcome collective action problems and the desire to do so; the group that makes only a technical demonstration really says nothing about its historical behaviour. I suggest that group structure plays a role in determining which strategy of representation will be employed. For instance corporations are widely understood to be organized for generating profit. As such, they might be able to illustrate their capacity to act collectively through a simple technical demonstration. Non-profit organizations or interest groups are not generally organized for as singular a goal as profit-making, and thus might find illustrations of collective action capacity more difficult. Relying on behavioural demonstrations thus becomes their general strategy. Indeed, there is

evidence to suggest that group structure does have an impact on the strategy of representation – a topic to which I return shortly in Section 3.5.4.

Finally, it is important to note that Propositions 3.2 and 3.3 do not make reference to the group's commitment to behave honestly. In fact, it is entirely possible for a group to demonstrate its capacity to overcome the costs of collective action and thus appear to the legislator as a viable trading partner *ex ante*, only to turn around and behave opportunistically after the bargain. Having said this however, the propositions are important in that they indicate that investments in overcoming the costs of collective action are important for the creation and maintenance of interest specific policy resources.²⁹

3.3 Electoral Competition and the Legislator's Investment in Interest Specific Assets

Interest groups are not the only actors affected by their structural or institutional setting. The legislator too finds him or herself in a position that requires investment in interest specific resources. The reason for this stems from the nature of electoral competition.

Electoral competition in this regard refers to the legislator's desire to use interest specific assets procured from credible groups to enhance the expectation of electoral success beyond that already supposed for vote maximizing policy-making. In Chapter 2, I argued that the legislator's incentive to contract for resources was based solely on concerns for making expected vote maximizing policy due to the link between electoral

²⁹ Indeed, even in the absence of interest specific assets this will be so.

success and a candidate's policy platform (see e.g., Coughlin 1992). This argument still holds, as it is pertinent both for a discussion of electoral strategy and policy-making where productive policy-making requires contracting for productive policy resources, some of which will be interest specific. In addition though, investment in these resources may also have a secondary effect for the legislator in that they might be used as informational signals to voters.

Downs' (1957) seminal study advanced the theory of a voter's 'rational ignorance' in the face of costly information: when the cost of transmission, procurement and analysis of information regarding a candidate's political action is higher than the probability that one vote will sway an election, individual voters will rationally remain ignorant about the political process. Voting is irrational in this view. And yet people vote. Some argue that voting is not an instrumental but rather an expressive act (Brennan and Buchanan 1984), some suggest that people are retrospective and identify their economic position with a given party (e.g., Fiorina 1981; Kiewiet 1983), still others base voter's preferences on ideology (Poole and Romer 1985). It is also possible, however, that the cost of information in voting can be lowered when voters use signals from secondary sources. The rational legislator, knowing this, will sometimes find it beneficial to subsidize the creation of secondary information by making investments in interest specific assets.

Amongst others, Staaf (1978), McKelvey and Ordeshook (1985), Calvert (1986) and Popkin (1993) have all identified the role that informational signals can play above and beyond the 'technical' side of a policy platform in determining the electoral success

of a given candidate. Whereas the role of groups providing technical information is a standard argument in the literature (Kollman 1997), groups can also act as disseminators of information regarding a candidate's reputation or policy stance to voters, even if those same voters do not actually understand the technical issues at hand. The effectiveness of such a strategy depends on the likelihood that voters will rely on each other for electoral information. In other words, "voter uncertainty about the true intentions or abilities of a candidate might be alleviated if the candidate can devise some signal that, although not directly related to the outcome he or she will provide in office, is believed by voters to separate capable from incapable officeholders, or true ideologies from imposters" (Calvert 1986: 54). The quintessential strategy that candidates will employ during competitive elections is to guarantee the endorsement of one group of voters in the hopes that this will positively affect the disposition of another set of voters.

The legislator's expectation of his or her competitive position come election time is therefore an important consideration. When the legislator is relatively certain that he or she is electorally secure, empirical evidence suggests that less regard is given to appealing to constituents (Coates and Munger 1995). However, if candidates are uncertain about electoral security because of information asymmetries, one can expect reputational phenomena, including endorsements, to be important (Ferejohn 1990). When advocacy comes from groups whose position to credibly endorse the legislator is based on their ownership of specific assets, the legislator is effectively investing in the group's interest specificity. Just as the group must invest resources to overcome collective action costs, the legislator invests in the group's resource to appeal to voters, including, perhaps, a

direct investment in aiding the group to deal with its costs.³⁰ This investment is important not only for the technical reasons discussed above and in Chapter 2, but also because it has electoral significance.

To further uncover the difference between the ‘technical’ and ‘electoral’ role that groups play, consider the example of the disabled person’s group I spoke of previously. The group and the legislator can enter into two different relationships. As in Chapter 2, the relationship could be technical. In this case, the group offers its interest specific expertise in return for an access policy it supports. And while ex post opportunism on either party’s behalf may lead to protest with electorally damaging consequences, nothing in the original bargain deals directly with electoral competition. The legislator is willing to exchange policy for resources due to the expectation that the policy itself will affect electoral competition favourably. But what happens if the legislator also believes that electoral success depends on receiving an endorsement from the group after the policy has been implemented? The endorsement has no effect on the policy, only its advertising. Here, the legislator uses the bargain as an informational signal to voters about their capabilities as an officeholder. The signal is valuable because the group’s endorsement is itself interest specific, due either to experience qualities or collective action mentioned above (i.e., an endorsement from a computer salesperson about an access policy is of little value to the legislator). The actual delivery of the signal is, of course, subject to the same contractual considerations as the delivery of the resource was.

³⁰ For example, the Canadian government played a key role in helping the National Action Committee on the Status of Women to form.

In other words a group's signal to voters is useful only to the extent that governance against opportunistic behaviour in signaling can be guaranteed, leading to proposition 3.4.

Proposition 3.4: Policy network-like governance is more likely when endorsements from interest groups are required to signal voters about the capabilities of the legislator.

While signaling agreements do not have a direct effect on policy formation, they will have a potential effect on electoral outcomes. This is not the same thing as saying that all exchanges in policy-making have a signaling character to them. In fact, one can imagine situations where an exchange might be consummated between electorally opposed parties. What is important, is the argument that organizational choice will be affected differently under different electoral circumstances.

3.4 Opportunism Hazards and Governance in Policy-Making

The importance of governing exchange relationships rests on each actor's desire to protect against post-contractual opportunism. When the exchange is over goods that have a higher degree of interest specificity than can be dealt with under unilateral contracting such as on the market, protection requires actors to devise institutional arrangements that are particular to the exchange. If formal mechanisms are not viable, contracting in the policy network, informal use of hostages, sunk investments and bilateral exchange are required (see Section 2.7). Given this, it is important to understand the conditions when informal mechanisms can be expected to be successful.

Examining the conditions under which one should expect informal governance mechanisms to be successful is implicitly a task that requires one to account for the

conditions under which ex post opportunism is more likely. Beyond the general argument about the relationship between opportunism and the nature of the resources contracted for established in Chapter 2, a careful treatment of a given actor's expectation about the probability of opportunistic behaviour on the part of trading partners will reveal several conditions about the institution of more or less hierarchical modes of governance. In particular, I deal with reputation, *ex ante* commitment, and the scope of the bargain.

First, an actor's reputation can be expected to affect the strategy employed in informal exchange relationships. Searching for evidence about the past contractual performance of a potential trading partner will be important as a proxy for future performance (Gulati 1995). Such a search can be based either on personal experience in the case where partners have had prior relationships, or by relying on references from others who have had experience with a potential partner. Actors with good reputations about contractual performance will be rated more highly than those with a poor reputation as they represent a lower probability of ex post opportunism. The effect of this reputation will be seen in the extent to which more formalized governance arrangements are made.

Proposition 3.5: Policy networks are more difficult to secure when actors have a relatively poor reputation regarding past contractual performance.

Proposition 3.5 implies that policy networks will be easier to institute when actors have a good performance reputation. This could be particularly important if a trading relationship exists over time. In a case where actors have a history of successful repeated exchange, a once formalized relationship might reasonably be expected to grow into a more flexible one.

Second, policy-making represents an interesting case in examining the use of informal mechanisms for contractual governance in that the policy represents the guarantor of the bargain. The policy itself is the means by which legislators and groups tie their future utility to past promises. For the legislator, future utility is measured by expected votes and depends on the policy being viewed favourably by voters; for the group, future utility is gained by the extent to which the policy results in private benefits. Each party has a vested interest in seeing the policy through to fruition. And yet in the face of an environment characterized by the possibility of opportunistic behaviour, guaranteeing the expected effect of policy design requires actors to indicate their good faith *ex ante* in order to protect against *ex post* disturbances.

The ability to offer credible commitments about future behaviour with respect to a policy prior to the bargain is an important consideration. Actors must be able to demonstrate that their utility actually depends on the policy, and that they are willing to protect this utility against opportunism. Legislators can demonstrate this commitment by revealing their policy positions through public communication such as election campaigns, identifying themselves along ideological lines, or perhaps through party affiliation. Groups can indicate a commitment to a particular policy action by overcoming the costs of collective action and stating their policy positions publicly.³¹ The importance of this commitment will be reflected in the design of governance mechanisms.

³¹ Sened (1997) argues that groups or “political entrepreneurs”, by their very existence, provide information to their members and to legislators about the costs and benefits of policies.

In Section 2.7, I introduced the discussion of specific mechanisms whereby *ex ante* commitment can be demonstrated, including hostages, sunk investments, and bilateral exchange. But these mechanisms are not equivalent in terms of their degree of formalization. For instance, the bargain itself guarantees behaviour in bilateral exchange. The use of hostages or sunk investments such as a legislator investing in a pilot project or a group investing in costly research, on the other hand, requires partners to put forth a bond that will be forfeited if the exchange dissolves. In this sense, governance by sunk investment or hostage is further along the market-hierarchy continuum than bilateral exchange, as actors have to invest more heavily in their demonstration of *ex ante* commitment. Proposition 3.6 captures this argument.

Proposition 3.6: Policy networks are more likely when actors have an easier time in demonstrating their commitment to the policy ex ante.

Finally, I follow Oxley's (1997) lead in discussing the scope of the agreement as an indicator of the choice of governance mode. In her discussion of alliances between firms for the creation or exploitation of technologies, Oxley (1997) observes that more hierarchical governance modes are instituted for alliances that create new technologies as opposed to sharing existing ones, and for transactions involving a broader scope or number of products. In each case, the comparative advantage of dealing with monitoring costs in the face of difficulties in specifying contracts leads to the more hierarchical mode of governance (although not all the way to vertical integration).³²

It seems reasonable to suggest that similar conclusions will be observed in policy-

³² Oxley (1997: 396-406) supports her hypotheses with empirical evidence of specific contractual arrangements in strategic alliances of firms engaged in the diffusion or creation of new technologies.

making where the scope of the bargain can also change. For instance, if governance structure in alliances for the creation of new technologies is more hierarchical than in alliances for the diffusion of existing technologies as Oxley (1997) shows to be the case for the private sector, then a similar difference might be expected in the public sector for actors engaged in exchanging existing resources (e.g., group's knowledge for a particular application of an existing policy) than for actors engaged in creating new resources (e.g., a group investing in the creation of new knowledge in exchange for a new policy).

Proposition 3.7 follows.

Proposition 3.7: Policy networks are more likely when the government funds the creation of new policy resources.

A corollary to Proposition 3.7 is that when circumstances such as those associated with collective action problems makes it particularly difficult for groups to generate the necessary funds to create new interest specific policy resources, the legislator may well make the initial investment on the group's behalf. The legislator can provide core funding to the group who, in turn, creates the interest specific resource, and then trades it back to the legislator. Thus I present Corollary 3.7:

Corollary 3.7: Policy networks are more likely when the government provides core funding to private groups.

This argument is examined in more detail below, when I show that a correlation exists between government funding of interest groups and the group's propensity to engage in lobbying (Section 3.5.5).

3.5 Empirical Application: Testing Propositions 3.1, 3.2& 3.3, and 3.7 Using the Canadian *Lobbyists Registration Act*

The propositions presented above not only capture theoretical arguments about a set of exogenous conditions under which one can expect to see policy network forms of governance, they also form the basis of empirical testing. In particular, I use the Canadian *Lobbyists Registration Act* as the source of empirical evidence against which Propositions 3.1, 3.2&3.3, and 3.7 (and Corollary 3.7) are tested. The tests provide support for the argument that the transaction cost view of policy-making is a valid one.

3.5.1 The *Lobbyists Registration Act*

The *Lobbyists Registration Act* {consolidation of the *Lobbyists Registration Act*, R.S. 1985, c.44 (4th Supp.) and *An Act to amend the Lobbyists Registration Act and to make related amendments to other Acts*, S.C. 1995, c. 12} came into full force on January 31, 1996, and is designed to strengthen the requirements for lobbyists of the federal government to publicly disclose their activities.³³ The LRA applies four basic principles of lobbying developed over the decade or so leading up to the amendments:

- free and open access to government is an important matter of public interest;
- lobbying public office holders is a legitimate activity;
- it is desirable that public office holders and the public be able to know who is attempting to influence government;
- the system for the registration of paid lobbyists should not impede free and open access to government (Canada 1996: 1).

³³ The *Lobbyists Registration Act* is hereafter referred to as the LRA.

The LRA governs the registration of all lobbyists who approach public office holders including Senators, M.P.s, their staffs, and all federal public servants, where the term lobbyist is defined as an identifiable individual who on their own or on behalf of a third party attempts to influence the decisions of government (Canada 1995: 1). Only public office holders at another jurisdictional level, members of the council of a native Canadian band or their staffs, diplomatic agents, or officials granted privileges and immunities by Parliament including officials of the United Nations are exempt from registering. The three categories of lobbyists – the consultant, in-house corporate and in-house organization lobbyists – are outlined in Appendix 1.

The LRA thus governs almost every lobbyist who approaches the federal government, and applies to activities such as meetings, presentations, written or electronic communications, telephone calls, and informal communications.³⁴ Lobbyists acting as paid or volunteer staff of organizations, associations or corporations, or as paid lobbyist consultants on short-term contract, must publicly register when they are attempting to influence the making, developing or amending of legislative proposals, bills or resolutions, regulations, policies, programs, grants, contributions, financial benefits or contracts of the federal government. Registration is free, as is public access to the

³⁴ Note: Registration is not required for: oral or written submissions to parliamentary committees where there is a public record; oral or written submissions made to any person or body which has jurisdiction or powers under a federal statute, in proceedings that are a matter of public record; oral or written submissions made to a public official with respect to the enforcement, interpretation or application of any federal statute or regulation by that official; or, oral or written submissions made to a public office holder in direct response to a written request from that public office holder, for advice or comment in respect of any matter referred to in the Act (Canada 1995: 11).

Lobbyists Registry.³⁵ Failure to register, or failure to act in good faith as a lobbyist, is punishable under the *Act* by a maximum penalty of \$100,000 and two years imprisonment (Canada 1995: 14).

3.5.2 Data Source: The *Lobbyists Registry*

The *Lobbyists Registry* forms the database of all those lobbyists governed under the LRA who are lobbying, or who have lobbied, the federal government since January, 1996. The *Registry* presents researchers with a rich opportunity to view the list of lobbyists, who they are, who they represent, what they are lobbying about, and how they are lobbying for federal organizations and policy fields.

For my purpose here, I use the *Registry* as a database for testing propositions about some exogenous conditions under which one might expect to see governance of policy-making by policy network as opposed to an alternative organizational form. That is, the governance of informal exchange relationships between legislators and private actors who own interest specific policy resources.

As I indicated in the introduction to this chapter, the very nature of contracting in the policy network means that no list of *actual* exchanges exists. In order for the *Lobbyists Registry* to be useful then, I consider the registration of lobbyists as a proxy for testing three of the sets of propositions outlined above. First, I test the argument that informal exchange in policy-making of the type that would be governed by a policy

³⁵ Industry Canada charges an administrative fee to those lobbyists who do not register via the Internet. Public access to the Registry is available at <http://strategis.ic.gc.ca>.

network is more likely when the productive resources are experience goods rather than search goods (Proposition 3.1). Second, I test the proposition that groups will wish to repeatedly demonstrate their behavioural and/or technical capacity to act collectively, and that group type is likely to have an effect on the lobbyist market (Proposition 3.2 & 3.3). Finally, I test whether a correlation exists between legislator funding of organizations and lobbying activity (Proposition 3.7).

It is important to emphasize that I treat the registration of lobbyists as a proxy for exchange. Were one able to actually see the existence of contracts as in the private sector (see Oxley 1997), the measure of exchange would be direct. However, due to the implicit nature of contracting in the policy network an indirect measure of exchange is required.

At each stage of the analysis the number of registrations is used as the proxy for the likelihood of exchange governed by policy network. Each private actor registration represents a separate effort to affect the course of policy decisions.³⁶ Registration activity therefore affects the density of the lobbyist market. I argue by extension that the probability of exchange governed by policy network form will increase as the density of the lobbyist market increases. A similar proxy has been used by scholars looking at the impact of social capital on the productive capacities of economies, where density refers to the relative numbers of individuals who are members of voluntary organizations versus those that are not (see Putnam 1993; Paldam and Svendsen 1998). For my purpose, I define density in a similar manner: for a given policy field, the total number of lobbyists

³⁶ Note: Private actors are required under the *Lobbyists Registration Act* to re-register every time a change occurs in their lobbying activity (Canada 1995). As such, each registration indicates a separate lobbying effort.

registered is a good indicator of the probability that a policy network will be required to govern implicit exchanges between legislators and private actors. Furthermore, the registration activity of each private actor will also be a reflection of the conditions of informal exchange. The greater the number of lobbyist registrations in a policy area, the more dense the lobby market, and the higher the likelihood of informal exchange governed by policy network.

The empirical work below therefore treats registration activity as the proxy dependent variable in the analysis of informal exchange in policy-making. This is done in two ways. First, the total number of registrations in ten policy fields is used to test whether a distinction can be made between median number of registrations in search versus experience fields (a Mann-Whitney test of Proposition 3.1). Second, the individual registration activities of a random sub-sample of private actors are used in a linear regression model to test for the effect that field type, organizational capacity, and legislator-actor funding has on registration activity (multiple regression analysis for Propositions 3.1, 3.2, 3.3, 3.7).

3.5.3 Mann-Whitney *U* Test of the Effect of Policy Field-Type on Total Lobby Market Density

Proposition 3.1 suggests that policy networks are more likely in policy fields that require experience resources for policy-making than in fields that require search resources. Where exchange actually takes place, Proposition 3.1 suggests there should be a significant difference between the density of lobbyists registered in experience policy

fields versus those that are registered in search fields. For the test, field-type is a categorical (dummy) variable – I define fields as either experience or search, not both – with agriculture, environment, health, industry and transport defined as experience fields, and defence, employment and labour, finance, immigration and justice defined as search fields.

The definition of search versus experience policy field is an abstraction based on a review of the operating mandate of the lead government agency charged with policy-making in these fields. This review is presented in Appendix 2. It should be emphasized that there is no way to make a strict distinction between experience and search policy fields as it is likely that policy-making in *all* fields will require both types of resources. The assertion herein is simply that the experience/search distinction is valuable in *general*.

It is useful to note that registration counts used here are a representation of the complete lobbying market, in that they include registrations for all activities governed by the *Lobbyists Registration Act*, including lobbying for contracts for the years 1996-1998 (n = 3356). The data then emphasize the general effect of interest specificity in public decisions including the awarding of contracts. And while the importance of this might not be immediately apparent, it is reasonable to assert that even for those registrations directed toward winning government contracts, interest specificity – and hence some degree of informal contracting – will affect the exchange. This is because the market for contracts of the sort that require lobbying is characterized by a degree of interest specificity that is higher than on the competitive market (otherwise lobbying would not

be necessary). Government contracts for which lobbying is required are therefore likely to have a policy network-like dimension.

The number of lobbyist registrations per policy field per fiscal year and their ranks are shown in Table 1. The Mann-Whitney analysis tests for differences in the median number of registrations for search versus experience fields, and leads to the acceptance of Proposition 3.1. That is, public decision makers face a more dense market in experience fields than in search fields. The test reveals that at a *p-value* of 0.0159 the median and distribution of experience registrations lies to right of search registrations for both 1996-97 and 1997-98, leading to the conclusion that significantly more lobbyists are registered for experience policy fields (calculations are shown in Appendix 3).³⁷

The results, as expected, suggest that the experience market is significantly more dense than the search market. The implication of this is that the total lobby market is affected by policy field-type. By extension, this suggests that the likelihood of informal exchange and policy network governance is higher in experience versus search policy fields.

The next step is to examine whether field-type will similarly affect individual registration strategies. To do this, I explore the registration activity of a sub-sample of the total lobbyist population in a multiple regression analysis. In addition, the collective action capacity of private actors and legislator-actor funding are accounted for.

³⁷ Appendix 3 also shows that the results are significant when the raw counts are manipulated to remove some of the dispersion by taking the square root. This is standard practice in situations where count variables are used and heteroscedasticity is controlled for (see Erickson and Nosanchuk 1992).

Table 1. Lobbyist Registrations and Ranks by Policy Field for 1996-97 and 1997-98.

Policy Field	Registrations 1996-97	Rank 1996-97	Registrations 1997-98	Rank 1997-98
Experience Fields				
Agriculture	109	5	76	5
Environment	136	6	153	6
Health	362	9	328	9
Industry	497	10	449	10
Transport	251	8	232	8
Search Fields				
Defence	53	2	37	2
Employment & Labour	160	7	176	7
Finance	92	4	59	4
Immigration	65	3	51	3
Justice	35	1	35	1

3.5.4 Regression Analysis of Individual Private Actor Registration Behaviour: The Effect of Field-Type, Demonstration-Type, and Government Funding

As discussed above, the number of registrations observed is used as a measure of market thickness and a proxy for policy network governance. The regression analyzes the effect that field-type (search versus experience), demonstration-type (technical versus behavioural), and government funding have on the individual registration strategies of private actors, as would be predicted by Propositions 3.1, 3.2, 3.3, and 3.7 respectively. It should be noted that private actors in this context refer to both organizations and corporations as defined under the LRA (see Appendix 1), and funding refers to monies received by private actors that must be reported under the LRA.³⁸ It should also be noted that I define corporate actors as engaging in technical demonstrations of collective action capability and organizational actors as engaging in behavioural demonstrations. This classification is based on an assertion that corporations have well-defined and easily understood formal structures that are based on principal-agent relationships and will thus have an easier time in demonstrating collective action capacity than their generally less-formal organizational counterparts (see again discussion in Section 3.2).

The regression model is thus specified as follows:

$$\text{REGISTRATIONS} = \alpha + \beta_1\text{FIELD} + \beta_2\text{DEMONSTRATION} + \beta_3\text{FUNDING} + \epsilon, \quad (2)$$

where α is a constant, ϵ is a random error term, and β_n is the unknown coefficient attached to each explanatory variable. The dependent variable is the number of

³⁸ Note: "Funding means money made available for a particular purpose for which good or services are not received in return or for which repayment is not intended. Funding would include federal grants and non-repayable contributions, but repayable contributions, loans, loan guarantees, tax credits, remission orders and procurement contracts would not need to be reported" (Canada 1995: 10).

registrations for each actor in the sample. The explanatory variables are all categorical and the propositions predict that each coefficient will be positive. In other words, the number of registrations per private actor will rise for experience fields, for private actors relying on behavioural demonstrations of collective action, and for private actors receiving government funding. In addition, two other variables, LOBBYIST HIRED and REGISTERED CHARITY, are included in the model to control for the effect of lobbying resources on registration behaviour, as discussed below.

A random representative sub-sample for the regression was collected from the total population used in the Mann-Whitney test. The sub-sample of $n = 413$ private actors was collected such that the percentage distribution of private actors registered in each field by year in the total population was maintained in the sample. The sample contains 836 registrations by the 413 actors, representing 25% of the total number of registrations in the population. The data is presented in Appendix 4. Table 2 presents a descriptive summary of the data; Table 3 presents a correlation matrix. The results of estimating equation (2) using different subsets of the explanatory variables are shown in Table 4.

The regression reveals several important conclusions with respect to Propositions 3.1, 3.2 & 3.3, and 3.7. First, concerning Proposition 3.1, the number of registrations is significantly higher in experience fields than in search fields. This shows that registration behaviour is a positive function of field-type; individual actors register more frequently in experience fields. The implication of this is that exchange governed by policy network is more likely in experience versus search policy fields, as predicted by Proposition 3.1,

Table 2. Descriptive Statistics for Variables (First Regression).

Variable Name	n	Mean	Predicted Sign in Regression
Registrations per Actor	413	2.02	
Field 0 = Search 1 = Experience	413	0.78	> 0
Demonstration 0 = Technical (corporate) 1 = Behavioural (organization)	413	0.59	> 0
Funding by Government 0 = No 1 = Yes	413	0.019	> 0
Consultant Lobbyist Hired 0 = No 1 = Yes	413	0.12	?
Registered Charity 0 = No 1 = Yes	413	0.048	< 0

Table 3. Correlation Matrix of Variables (First Regression) – 413 Observations.

Variable						
Registrations	1.0000					
Field	0.15	1.0000				
Demonstration	-0.26	-0.051	1.0000			
Funding	-0.023	-0.096	0.12	1.0000		
Lobby	-0.080	0.016	-0.44	-0.052	1.0000	
Registered Charity	-0.14	-0.13	0.19	0.13	-0.084	1.0000
Variable	Registrations	Field	Demonstration	Funding	Lobby	Charity

Table 4. OLS Estimation of Equation (2) – Dependent Variable is Number of Registrations for each Private Actor Registered Under the LRA³⁹

Equation →								
Explanatory Variables ↓	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FIELD coefficient (t)	0.31 (2.699)*	0.34 (2.902)*	0.34 (2.863)*	0.34 (2.839)*	0.31 (2.662)*	0.31279 (2.628)*	0.32 (2.665)*	0.33 (2.878)*
DEMONSTRATION coefficient (t)	-0.73 (-6.646)*	-0.76 (-6.986)*	-0.53 (-5.349)*	-0.53 (-5.341)*	-0.72 (-6.623)*	-0.49945 (-4.956)*	-0.51 (-4.986)*	-0.75 (-6.985)*
FUNDING coefficient (t)	0.21 (0.6092)	0.15 (0.4315)	0.15 (0.4238)				0.21 (0.5966)	
LOBBYIST HIRED coefficient (t)	-0.76 (-4.701)*	-0.76 (-4.688)*			-0.76 (-4.705)*			-0.76 (-4.693)*
REGISTERED CHARITY coefficient (t)	-0.40 (-1.742)†				-0.38 (-1.690)†	-0.38 (-1.644)†	-0.40 (-1.695)†	
CONSTANT coefficient (t)	2.33 (18.09)*	2.31 (17.96)*	2.09 (17.05)*	2.09 (17.14)*	2.34 (18.17)*	2.11 (17.25)*	2.11 (17.17)*	2.32 (18.05)*
ADJUSTED R-SQUARE	0.13	0.12	0.079	0.081	0.13	0.085	0.083	0.13
SUM OF SQUARED ERRORS	379.96	382.79	403.41	403.59	380.30	400.94	400.59	382.96
n	413	413	413	413	413	413	413	413

Note: For *t* statistic in brackets: * Significant at 5%; † Significant at 10%.

Legend: **FIELD** (0=Search; 1=Experience); **DEMONSTRATION** (0=Technical; 1=Behavioural);
FUNDING (0=No; 1=Yes); **LOBBYIST HIRED** (0=No; 1=Yes);
REGISTERED CHARITY (0=No; 1=Yes)

³⁹ Note: Regression results for the square root of the number of registrations per private actor are shown in Appendix 5. There is no significant difference in the results.

even when the other factors in equation (2) affecting registrations are controlled for.

Second, concerning Proposition 3.7, the results show that FUNDING has an insignificant effect on registration behaviour in the sub-sample. However, the sign of the effect is positive, indicating a tendency towards more registrations when the private actor is funded by the legislator. Given that legislator-actor funding is characteristic of situations where the actor creates interest specific resources that must be traded informally, a positive effect (although insignificant in the sub-sample) between the number of registrations and funding is not surprising. It would appear then, that even though the results are insufficient to support Proposition 3.7 outright, a positive correlation between funding and exchange may exist. Further testing for this effect is required.

Propositions 3.2 & 3.3 imply that the organizational character of groups who attempt to engage legislators in productive exchange during policy-making affects lobbying strategy. Groups will demonstrate their ability to overcome collective action problems by referring either to technical or behavioural capacities. I earlier suggested that if these propositions hold true, one would expect to see a greater number of registrations for groups who have a less formalized structure and thus must appeal to behavioural demonstration as a guarantor of their ability to act collectively. If group structure plays some independent role in shaping collective action strategy as Propositions 3.2&3.3 suggest, then evidence of this should be apparent in the *Registry* between the types of lobbyist (organization, corporate and consultant). In particular, one would expect to see a greater number of multiple registrations for organizations which

depend on behavioural demonstration to illustrate their collective capacity, than for corporate and consultant lobbyists who have formalized market-based structures that by their very nature are indications of the technical ability to act collectively.⁴⁰

Unfortunately, the regression results indicate that there is a significant *negative* correlation between DEMONSTRATION and registrations. This does not mean, however, that the Propositions are necessarily incorrect. Instead, some other exogenous condition(s) could be affecting the results. In fact, two possible conditions might be affecting the results.

First, it is possible that corporate actors have a broader range of issues over which they will register. If conditions for new lobbying efforts change faster and more frequently for corporate and consultant actors than they do for organizational actors, then they would necessarily register more frequently and the results would indicate this. But while this is a possible explanation that deserves further investigation, the effect of being a consultant actor is to reduce registrations in the sub-sample. In other words, professional lobbyists register fewer times than their corporate and organizational counterparts, *ceteris paribus*. As Chapter 4 suggests, this is not surprising given that professional lobbyists may well have a comparative advantage in the ability to effect exchange relationships between private actors and legislators, based on their role as

⁴⁰ Note that this says nothing about whether any one type of group is more or less likely to be engaged in exchange or that its resources are more or less valuable. It is simply a test of the proposition that group type will result in different behavioural demonstrations in lobbying when registering to lobby is considered an indicator of the ability to act collectively. Whether a group is involved in exchange depends on the value of their resource(s) and the ability of trading partners to guard against opportunism.

“middlemen” in exchange.⁴¹

It would appear then that an additional condition is affecting the regression results pertaining to Propositions 3.2 and 3.3. Specifically, it is likely that the classification of private actors as being either ‘technical’ or ‘behavioural’ does not account for one important characteristic – private resources that are available to engage in lobbying. In other words, the pool of resources (including money and people) that are devoted to lobbying activity is likely to affect registration strategy in addition to the conditions discussed in the Propositions. Unfortunately, the *Registry* does not require actors to report the amount of resources that an actor dedicates to lobbying. As a result, controlling for ‘wealth’ in the regression model is difficult to do. One manner in which I made an attempt at control, however, was to include an actor’s classification as being a REGISTERED CHARITY. The rationale for this was that if one makes the reasonable assumption that charities will have relatively fewer lobbying resources than their corporate and group counterparts, one would expect to see them registered comparatively fewer times. In other words, I attempted to go one step further to control for organizations whose membership is not made up of profit maximizers (i.e., the definition of registered charity under Revenue Canada guidelines). The regression results for the sub-sample show that this is a significant argument (i.e., the coefficient is negative and significant at 10% confidence).

⁴¹ This is why there is confusion in predicting the expected sign of the effect of hiring a lobbyist. On the one hand hiring a lobbyist indicates access to lobbying resources/money (indeed the correlation between being an organizational actor or interest group and hiring a lobby is negative as shown in the correlation matrix). On the other hand, Sections 4.3 and 4.4 below suggest that lobbyists might be able to economize on the cost of network governance and thus might register fewer times.

To further explore whether lobbying resources affect registration strategy, an auxiliary regression analysis was completed in which groups in the sub-sample were categorized on the basis of whether they represent business or social concerns, with the assumption being that “richer” business groups would register more times than “poorer” social groups. The model is specified as follows:

$$\text{REGISTRATION} = \alpha + \beta_1\text{FIELD} + \beta_2\text{BUSINESS} + \beta_3\text{CHARITY} + \beta_4\text{LOBBY} + \epsilon, \quad (3)$$

where α is a constant, ϵ is a random error term, and β_i is the coefficient for each explanatory variable. As before, the explanatory variables are all categorical and the prediction is that based on access to resources, β_2 will be positive and β_3 will be negative.⁴² Access to resources should be independent of field-type, however, and β_1 will still be positive as predicted by Proposition 3.1.

Table 5 presents descriptive statistics and predicts the sign of the coefficients for the second regression. Table 6 presents a correlation matrix. The results of estimating equation (3) using different subsets of the explanatory variables are shown in Table 7.

The results of the second regression reveal that there does appear to be a positive correlation between access to lobbying resources and the number of times a group registers to lobby. Although not always significant, the sign of the effect for groups representing business versus social concerns is positive indicating support for the argument that lobbying resources matter; the significant negative correlation between

⁴² Note: The BUSINESS variable classifies organizational actors from the first regression sample on the basis of whether they represent business interests or non-business (i.e., social) interests. As a result, the sub-sample for the auxiliary regression excludes corporate actors from the first regression (and therefore n=240 for the second regression).

Table 5. Descriptive Statistics for Variables (Second Regression).

Variable Name	n	Mean	Predicted Sign in Regression
Registrations per Group	240	1.81	
Field 0 = Search 1 = Experience	240	0.78	> 0
Group representative of Business 0 = No 1 = Yes	240	0.72	> 0
Consultant Lobbyist Hired 0 = No 1 = Yes	240	0.038	?
Registered Charity 0 = No 1 = Yes	240	0.079	< 0

Table 6. Correlation Matrix of Variables (Second Regression) – 240 Observations.

Variable					
Registrations	1.0000				
Field	0.30	1.0000			
Business	0.21	0.16	1.0000		
Registered Charity	-0.25	-0.18	-0.47	1.0000	
Lobby	-0.012	0.05	-0.071	-0.058	1.0000
Variable	Registrations	Field	Business	Charity	Lobby

Table 7. OLS Estimation of Equation (3) – Dependent Variable is Number of Registrations for Non-Corporate Organizations Registered under the LRA.⁴³

Equation →	(1)	(2)	(3)	(4)	(5)
Explanatory Variables ↓					
FIELD coefficient (t)	0.35 (4.093)*	0.38 (4.354)*	0.35 (4.081)*	0.38 (4.357)*	0.36 (4.204)*
BUSINESS coefficient (t)	0.12 (1.351)	0.22 (2.709)*	0.12 (1.415)	0.22 (2.741)*	
LOBBYIST HIRED coefficient (t)	-0.085 (-0.4569)	-0.043 (-0.2287)			
REGISTERED CHARITY coefficient (t)	-0.35 (-2.366)*		-0.35 (2.337)*		-0.44 (-3.327)*
CONSTANT coefficient (t)	1.48 (14.66)*	1.36 (15.34)*	1.48 (14.74)*	1.36 (15.40)*	1.56 (20.05)*
ADJUSTED R-SQUARE	0.12	0.12	0.10	0.11	0.12
SUM OF SQUARED ERRORS	69.58	69.64	71.23	71.25	70.23
n	240	240	240	240	240

Note: For *t* statistic in brackets: * Significant at 5%.

Legend: **FIELD** (0=Search; 1=Experience); **BUSINESS** (0=Social; 1=Business);

LOBBYIST HIRED (0=No; 1=Yes); **REGISTERED CHARITY** (0=No; 1=Yes)

⁴³ Note: Regression results for the square root of the number of registrations per private actor are shown in Appendix 6. There is no significant difference in the results.

registration behaviour and charitable organizations lends further support. In addition, the field-type effect is once again significant, and the negative sign of the coefficient for hiring lobbyist appears to add further credence to the argument that lobbyists have a comparative advantage in policy network exchange – a topic I return to in the following chapter.

Overall then, additional exploration of the curious results for the test of Propositions 3.2 and 3.3 has suggested that an actor's access to lobbying resources needs to be controlled for in future research. And while there is initial evidence to indicate that the availability of resources is linked to whether a group represents business versus social concerns, further analysis must also attempt to control for the comparative importance of lobbying relative to other corporate or group activities in an effort to develop a more comprehensive index of the effect of lobbying 'wealth' on lobbying behaviour.

3.6 Conclusion

Examining the conditions under which one can expect the policy network form of governance mechanism to be chosen is important in that it offers the researcher a set of propositions about the effect that exogenous variables will have on contracting in policy-making. Whereas Chapter 2 set forth the argument about why contracting is the pertinent focal point of a study about policy-making and discussed the alignment of contractual relations with alternative governance mechanisms including the policy network, Chapter 3 has stepped outside the analysis of the bargain itself, introducing additional variables that affect when bargains arise, how the structure of governance is affected by the actor's

institutional position and their choice of guarantors of the bargain, and how the scope of the relationship affects governance structure. These propositions not only strengthen the transaction cost theory of policy-making, they present the researcher with keys for empirical examination.

The empirical tests using the *Lobbyists Registration Act* as the data source are important for three reasons. First, the LRA represents a new and exciting data-set that has not been investigated in a similar manner before. Part of the challenge facing empirical transaction cost analysis rests on the very nature of implicit contracting in the policy network where agreements are unwritten. Treating information contained in the *Registry* as a proxy for exchange has allowed for an important initial step towards further empirical testing.

Second, the Mann-Whitney test of Proposition 3.1 revealed that the search versus experience distinction is a valuable one. For the population of 10 policy fields representing over 3300 separate registrations investigated above, the results indicate that experience fields have a significantly higher median number of registrations than search fields. The implication of this is that the procurement of policy resources in experience fields is more likely to be governed by policy network than in search fields.

Third, the linear regression model used to jointly test Propositions 3.1, 3.2, 3.3, and 3.7 showed that individual registration strategy is positively and significantly affected by field-type, that government funding is positively (although insignificantly) related to registration behaviour, and that demonstration-type also has a significant effect on lobbying behaviour. Unfortunately, this last effect was in the opposite direction to that

predicted by Propositions 3.2 and 3.3 (namely that technical actors – corporations in the context of the LRA – registered significantly more times than their organizational/behavioural counterparts). However, the reason for this contradictory evidence would appear to be related to actors' access to lobbying resources as indicated by controlling for resources in the both the general and auxiliary regression models. Still, even given the difficulty associated with controlling for lobbying resources of private actors, the search versus experience distinction is central enough to registration strategy to carry through to the regression models.

Additional work, quite naturally, remains. In particular, testing the link between a legislator's electoral position and their desire to guarantee public support from interest groups (Proposition 3.4), establishing the importance of reputation in policy network exchanges (Proposition 3.5), and examining the tools available to groups as they try to demonstrate a credible commitment to contracting behaviour (Proposition 3.6), establishes an important set of research tasks that should form a considerable future agenda.

One possible manner in which empirical research could shed further light on the exogenous conditions of policy network governance is through the use of the case study approach. In fact, Chapter 5 of the current study reveals significant evidence that both governmental and non-governmental actors are concerned about reputation and the credibility of commitments in their dealings with each other, leaving Proposition 3.4 as the only empirically untested proposition.

Perhaps the most telling aspect of the lack of comprehensive empirical evidence

to test the arguments that emerge out of the transaction cost approach to the study of policy-making is that the research agenda is in its early stages. As the transaction cost approach gains a broader audience in both academic and practitioner communities, one might expect that sources of empirical evidence will follow. A similar conundrum faced early private sector studies of transaction costs (Shelanski and Klein 1995), and there is no reason to expect that public sector studies are any different. Indeed, one of the central goals of the current study is to establish that transaction cost methodology is a useful tool for students of policy-making. If this goal is secured, it is likely that further empirical treatments will follow.

The immediate next step, however, is to combine the approaches in Chapters 2 and 3 as I move to an examination of the specific structural arrangements that define different types of policy networks. Will a policy network that emerges for the exchange of experience goods between a group that represents itself imply a different structure than networks that emerge where groups hire consultant lobbyists to do their bidding (as the regression results suggest)? Will the legislator react differently to a single group than to a group of groups? How are the costs of network governance affected by network structure? In what follows, I develop a set of ideal-type policy networks to show that different arrangements of informal contracts can be expected to have different capacities in dealing with contracting costs, and thus in dealing with the total costs of policy-making.

Chapter 4

Structure, Commitment and the Self-Enforcing Range of Contracts in the Policy Network: Direct, Indirect and Complex Ideal-Types

4. Introduction

Policy network researchers have continually seen evidence of important activity and yet have been consistently baffled in their attempts to present meaningful theory about what it implies to have a network structure (see Dowding 1995). In previous chapters, I have shown how a transaction cost theory illuminates the conditions of exchange that develop between actors in the policy network environment. In this chapter I consider how policy network structure affects governance costs when the choice of policy and the level of resources is assumed to be held constant.

To examine how policy network structure affects the cost of exchange in policy-making I focus on the relationship between credible commitments and the self-enforcing range of contracts. The reader will recall from Chapter 2 that exchange in the policy network is defined, *ceteris paribus*, as informal or implicit. That is, formal contracts of the sort that rely on court orders to guarantee enforcement are not available to legislators and private actors in the policy network. Commitment relies instead on the ability of trading partners to enforce their own relationships through the use of private sanctions to punish defection.

The theory presented below illuminates how network structure changes the expectations that actors have about the costs of contractual enforcement. I work out of a probabilistic framework where actors consider their exchange opportunities prior to trade,

and then offer commitments to their partners based on the expectation that exchange will be (net) beneficial. I present a model of three ideal-type network structures – the direct, the indirect and the complex – and argue that the cost of governance will differ in each. By looking at individual strategies, I am able to suggest how different network structures affect the costs of commitment for legislators and private actors both *within* a given ideal-type network structure, and *across* ideal-types. The theory predicts that the costs of governance, given the interest specificity of the resources being exchanged, will therefore differ depending on network choice. As in Chapter 3, I test some of the theoretical propositions developed below against empirical evidence from the *Lobbyists Registration Act*. It must be noted, however, that testing here is necessarily of a more informal nature, as I discuss below.

Focusing on informal contracts in policy-making reveals that network exchange is fundamentally different than either the autonomy of the market or the principal-agent relationship of the bureau, even given consistent behavioural assumptions, and it is this difference that defines whether a given exchange will be characterized by network governance or not. I argue that the intrinsic character of network exchange depends on the creation of private enforcement mechanisms to enable gains-from-trade and not on the number of actors, or the linkages between them. As a result, some forms of the network will not be immediately apparent to all readers as *network* forms, perhaps appearing as simple cases of one-on-one exchange. However, being precise about the requisite condition of network exchange establishes the suitable focal point for the policy researcher – namely the character and organization of exchange.

The chapter proceeds by initially developing the commitment framework through an application of the trading game in the public sector (4.1). I then apply Klein's (1992; 1997; Klein et al. 1978; 1997) model of the effect that private enforcement capital has on the self-enforcing range of exchange (4.2), using this as a backdrop to present the theory of ideal-type policy networks (4.3), and the comparison between them (4.4). Next, the empirical test is developed and applied (4.5). Concluding remarks are offered (4.6).

4.1 Commitment and the Self-Enforcing Range of Contracts

Recent analysis has begun to treat the self-enforcing contractual range as particularly important, not only because new theoretical developments have led to a better understanding of the contractual world, but also because there is much empirical evidence that self-enforcing contracts play a vital role in real-world interactions between economic agents (see Chapter 2.7). As Klein (1992: 155) points out, "instead of relying on court enforcement of written contract terms, transactors can handle hold-up threats by relying on a private mechanism as a means of enforcing the unspecified, but understood, elements of the contractual agreement."⁴⁴

The vast majority of work completed on self-enforcing contractual relations has focused on the private marketplace where the appeal to private mechanisms is a reflection

⁴⁴ Klein (1992) reserves the term "hold-up" to refer to unanticipated *ex post* changes in the contracting/performance environment that threaten the meaning of the original bargain. He does this as a means to criticize Williamson's (1985) use of the term to refer to opportunistic behaviour as somehow "immoral". A careful reading of both author's work fails to find significance in this semantic difference. In fact, it would appear that both are correct and that each is simply providing a legitimate example of what the hold-up problem really entails, i.e., contractual challenges, for whatever reason, that are exacerbated as the condition of asset/interest specificity deepens.

of the efficiencies that are gained in comparison to the courts. Informal private rules are used *instead* of, or in addition to, formal legal rules. Implicitly, there is always a choice available between the two mechanisms.

For the policy network form of policy-making private rules are necessary *because* formal legal rules do not exist to govern exchanges between autonomous public and private actors. In other words, if expected vote maximizing legislators and self-interested groups are to both maintain their autonomy *and* still engage in productive exchange, they have no choice but to rely on self-enforcement to guarantee their bargains. Private enforcement thus becomes the only legitimate focal point of inquiry for analyses of policy network forms of exchange. Essentially, the condition of self-enforcing contracts is deepened in the public sector.

The rationale for self-enforcing contracts is relatively straightforward and can perhaps best be understood by appealing to a standard extensive form trading game (see e.g., Hindmoor 1998; Lyons and Mehta 1997). In this game, agents are faced with a set of private incentives (pay-offs) that change depending on their own actions and of others in the game. For a simple legislator-interest group exchange, the game is played as follows.

Consider a legislator (L) who decides to make some policy, X, that has a pay-off of 100 expected votes given that he or she makes policy X with exogenously defined policy resources. Consider also that the same legislator could make a 'better' policy, X', that would result in 200 expected votes if and only if the legislator is able to procure an additional policy resource, R. A surplus of 100 expected votes is created if L can procure

R. For sake of argument, I assume that R is not available on the market, nor is it feasible for the legislator to make R, although R can be procured if the legislator engages in an exchange with a private interest group (P). Such is the case of the policy network form of exchange established in Chapter 2.

The group will offer an exchange if it is able to guarantee a portion of the rent created and if both trading partners are assumed to be equally adept at bargaining over the surplus, one can expect the split to be fifty-fifty.⁴⁵ In the absence of pre-established institutions to guarantee contracts – such as the courts for third party enforcement or mechanisms such as trust, hostages or sunk investments for self-enforcement – and absent the expectation of future exchange, the trading game is treated as an isolated exchange. It is reasonable to suggest then that one or both of the parties faces the risk of opportunistic behaviour that would alter the pay-off structure for the exchange. For example, the legislator could promise to act in good faith, receive the group's resource, and then behave opportunistically by writing the policy in such a way as to redistribute the surplus rent in his or her favour, perhaps granting general policy prescriptions that benefit the group nominally but withhold targeted benefits that were agreed to *ex ante*.

Alternatively, the group could itself behave in bad faith by providing a less than optimal amount of the resource resulting in a policy that does not generate the same surplus, but still guarantees the group a higher pay-off than in the good faith scenario. Of course it is

⁴⁵ Note: I assume that the group values its portion of the surplus rent to the same extent as the legislator. In other words, the group treats each expected vote as an equivalent private benefit however defined (e.g., money in the form of subsidies, research grants, transfer payments, or the like). This abstraction is made simply to facilitate easier discussion, as it is the structure of the pay-off schedule that is important here, not its exact specification. The equal sharing of the gains-from-trade was developed by Nash (1953).

also possible that both parties behave opportunistically, again lowering the total surplus than would be generated by honest trading. The structure of this trading game is shown in Figure 2.

For the case of isolated exchange, the trading game takes the form of the familiar Prisoner's Dilemma and generates a Nash equilibrium where both parties will behave opportunistically. The result is a pay-off that is Pareto-inferior to the efficient solution of honest exchange. In the absence of self-enforcing governance for implicit exchange, the outcome will be inefficient.⁴⁶

Both parties to the bargain therefore have an incentive to establish rules of the game that will lead to the efficient outcome – namely a private enforcement mechanism to promote honest behaviour (or reduce opportunism). Private enforcement refers to tools or strategies that actors have at their disposal that alter the pay-off structure of the trading game. For instance, interest group protest might effect a change in the legislator's pay-off for opportunistic strategy; similarly, legislative sanctions could impose a new pay-off structure for the group that lessens the value of opportunistic behaviour. The use of private enforcement mechanisms effectively removes the Prisoner's Dilemma from the exchange.

As I argued above in Chapter 2, the policy network can be viewed as the governance structure within which such private enforcement mechanisms exist to guarantee productive informal exchange in policy-making. And while it is both

⁴⁶ It is important to note once again that the treatment of efficiency applies only to the interest group-legislator exchange. It is not a comment on the Pareto efficiency of the policy, or its outcome.

Figure 2. The legislator-group trading game.

important and interesting to outline specific mechanisms such as trust, public promises, investments in trial policy programs, demonstrations of collective action and so on, it is more important for the theoretical perspective I advance here to illustrate how it is that the general *structure* of self-enforcement affects exchange and the costs of guaranteeing success in the policy network.

Self-enforcement in implicit contracting implies that actors have at their disposal some means to impose losses on their trading partners in the event of opportunistic behaviour. Both parties to the bargain will thus analyze their contracting position with respect to the potential gains that could be had by behaving opportunistically against the potential loss that could be imposed upon them if they actually did engage in opportunism. Klein (1992; 1997) treats this trade-off as one between hold-up potential and the capital costs of private sanctions. In the event that the hold-up potential exceeds the sanctions that can be imposed, actors can be expected to behave opportunistically.

The self-enforcing range of contracting is therefore defined as that range where the partners to the bargain are able to credibly demonstrate that any gains that could be had from contractual breach will be offset by private sanction from the offended party. As Klein (1992: 157) argues:

Within the self-enforcing range, where each transactor's hold-up potential gain is less than the private sanction, neither party would attempt a hold-up. The transactors know they each have more to lose by holding-up the other party (and terminating the relationship) than they have to gain.

To see how the self-enforcing range might play itself out in the exchange between the legislator and the interest group, consider again the trading game introduced above.

In the original example, the assumption was that neither party had the ability to employ a private sanction for opportunistic behaviour. Consider now, however, that such sanctions are possible. For example, the interest group might be able to punish the legislator for breach of agreement by public protest. If such protest had a cost of say 100 expected votes, perhaps because the legislator loses credibility in the eyes of the electorate during protest, the legislator will consider this potential loss against the potential gain from opportunism. The reverse scenario is also true if the legislator has the means to impose a similar loss on the interest group, perhaps by barring them from future trades, by increasing their costs of collective action through public embarrassment, or by simply instituting some damaging policy. In this case, it is clear that neither party will gain from opportunistic behaviour, and we can expect the exchange to result in the efficient honest-honest outcome. The general argument is that if private sanctions can be imposed that outweigh the private benefit of dishonest contracting, the efficient solution becomes the Nash equilibrium.⁴⁷

It is important to emphasize that it is the interest specific character of the exchange in a positive transaction cost environment that necessitates the institution of self-enforcement mechanisms. Entering into a specific investment implies some degree of bilateral dependency that is caused by market conditions (or more precisely the lack thereof). In addition, neither party is ever able to fully anticipate the performance of the other with regards to honesty in contracting or, indeed, with respect to the credibility of

⁴⁷ The reverse argument of course is that if private sanctions are not costly enough, the Nash solution will be inefficient.

sanctions. It is also possible for conditions to change such that even if the *ex ante* contract was honoured completely, a hold-up might still occur *ex post* that works against the intent of the original agreement (Klein 1992). The most referred to example in the private sector of such a hold-up problem is the Fisher Body-General Motors case where unanticipated changes in the market for auto bodies allowed Fisher to gain additional rents at the expense of GM (see for example Williamson 1985; Rubin 1990; Klein 1992; Klein 1997). In policy-making, one could imagine that changes in exogenous conditions such as technology, interest rates, unemployment figures, tax revenue or the like, might alter the *ex post* effects of a given policy, resulting in opportunistic behaviour when compared to the intent of the original deal. For example, the legislator might no longer view the original policy as expected vote maximizing; the interest group might find new conditions unfavourable and withdraw support or resources.

Regardless of the specific manner in which any of the forms of opportunism or hold-up will occur, it is important to realize that actors will base their actions on expectations about the behaviour of other transactors. For the researcher, this means that the framework for analysis is probabilistic. Drawing on the model presented by Klein (1992), I outline the general strategy that actors will take to economize on the self-enforcing range of contracts in the policy network.

4.2 Commitment Strategies to Self-Enforcing Contracts in the Policy Network

I begin by providing stricter definitions of hold-up potential and private sanction capital in the policy network setting, starting with Klein's (1992) definitions for the

private sector. Here, hold-up potential, H , is a measure of the expected private rent that would be gained if opportunistic behaviour was engaged in. Private enforcement capital, E , is a capital cost that is defined as the “discounted value of the future cost that can be imposed on the transactor that violates the contractual understanding” (Klein 1992: 156). In an exchange between two actors, say L and P , each brings to the table his or her private enforcement capital and faces a hold-up probability function that weighs the expected net benefit of opportunism against the expected net benefit of contractual performance.⁴⁸ The net hold-up potential is the area under the probability distribution for hold-up that is greater than private enforcement capital (Klein 1992: 160). A situation where actor L has created a significant hold-up potential of actor P is shown below in Figure 3. In order to decrease the probability of the hold-up actually occurring, Klein (1992) argues that actors L and P will attempt to restrain total net hold-up potential through contractual terms so that the following expression is minimized:

$$[1 - F_L(E_L)] + [1 - G_P(E_P)] \quad (4)$$

where F_L and G_P are the respective probability distributions for engaging in hold-up of actors P and L , and E_L and E_P are the respective exogenously defined amounts of private enforcement capital owned by L and P . By setting contractual terms, equation (4) is minimized, effectively reducing the total hold-up potential faced by the contracting parties.

⁴⁸ In other words agents weigh their options and ask themselves “how is my position affected if I behave opportunistically by breaching contractual terms?” The answer depends not only on the hold-up potential (what one gets by behaving opportunistically), but also on the penalty that might be imposed through private enforcement (what one loses by behaving opportunistically). Positive transaction costs imply that this is viewed in probabilistic terms (i.e., “I can never be sure, but I expect that this will be the outcome”).

Figure 3. Reductions in hold-up probabilities.

The fundamental argument advanced by Klein (1992) is that each actor has an interest in decreasing the magnitude of the trading partner's hold-up potential. Given that *both* actors feel the same way, the result is that the *total* size of the hold-up potential is decreased, effectively limiting the probability that a hold-up will actually occur. In fact, as dealt with below, it is likely that agents will continue to invest in lowering the expectation of a hold-up until such time that each actor faces an equivalent penalty for behaving opportunistically.

In the private sector to which Klein (1992) refers, court-enforced contracts result in an additional hold-up potential that could arise from holding a trading partner to strict contractual terms, as in the Fisher-GM case. If court-enforced contracts can also be used as tools of opportunism, panel "b" in Figure 3 would have an elongated tail to the right of private enforcement. In the policy network, however, the courts play no role, and actors are unable to use court-enforced contracts as tools of opportunism. Actors in the policy network therefore must rely completely on their own private enforcement capital to ensure honest exchange in what amounts to a "do-it-yourself" approach to governance. The result is that if actors are unable to come to private terms to guarantee their bargain, it is likely that exchange will fall apart at the negotiation stage. This effectively deepens the condition of private enforcement in policy-making.

Assuming then that actors have been able to arrive at some agreed upon informal terms, it is important to outline the effect that private enforcement has on governance. In the private sector, Klein (1992) shows that formal contracts will be "thinner" (i.e., less specific or complete) where private enforcement capital is greater. In other words, as E

shifts to the right in panel “a” in Figure 3, net hold-up potential decreases. It is reasonable to assume that the same relationship holds true for exchanges in policy-making. When legislators and interest groups are able to rely on large amounts of private enforcement capital – that is they can make credible assertions about future courses of action – one expects to see exchange facilitated rather easily and at low cost. Of course the reverse is also the case. If one actor (or both) has limited private enforcement capital one would expect exchange to be difficult and costly. In fact, I argue below that it is the ability of actors in the policy network to credibly commit to future courses of action that results in successful exchange. As such, an analysis of credibility is the key factor in advancing a valuable investigation of the cost and structure of exchange in the policy network.

Before I move on to this examination, it is useful to point out that the self-enforcing range of contracts relies on the ability of the transactors to credibly commit to courses of action *relative* to each other. Private enforcement capital should not be viewed as a commodity that can be bought or sold on some market (for if it were its requirement would disappear). Instead, private enforcement capital is valuable only to the extent that the other trading partner is, in effect, ‘listening’ to what is being said. In the trading game reviewed above, private enforcement allows the partners to arrive at the efficient solution only if they *both* believe it to be in their best interest to do so. If only one partner is committed to private enforcement, the game quickly unravels to the inefficient equilibrium. In the legislator-interest group example given above, private enforcement will change the pay-off structure facing each actor only if the legislator believes in the

credibility of the group's claim that they will protest legislator opportunism, coupled with the group's belief that the legislator is credibly committing to punishing group opportunism.

The self-enforcing range of exchange to which the policy network refers is therefore preconditioned on a mutual recognition of private enforcement capital. Recognition is argued to be embedded in ongoing relationships (Granovetter 1985; Hindmoor 1998), built up over time through learning (Klein 1992), or transferred from certain settings to others (Axelrod 1984; Coleman 1990), with the key concept being that the structure of the relationship will affect the outcome of the bargain. The manner in which this structure has its effect in the policy network is argued below to be dependent on the cost of commitment under different ideal-type settings.

4.3 The Structure and Cost of Exchange: Defining Three Ideal-Types of the Policy Network – The Direct, Indirect and Complex

In order to advance a meaningful theory of the relationship between network structure and the cost of exchange in policy-making, the initial requirement is to define the key conditions. First, the transaction cost view of interest specificity reminds the researcher that only certain private actors can be expected to influence the outcome of exchange. This is simply a re-statement of the argument that not all private actors affect policy-making. Legislators interested in expected vote maximization will attempt to procure productive resources only from those groups who own them; the market for policy resources in the policy network is limited.

Second, exchange in the policy network is not costless for either the legislator or the private actor(s). Both sets of agents therefore have an incentive to economize on the costs of securing productive bargains. As a result, legislators are interested in procuring resources such that the net benefit of doing so is positive; the same is true for interest groups. The total cost of governance is thus a primary consideration in guaranteeing productive exchange.

Third, the reliance on a self-enforcing range of contracts in the policy network implies that not only must actors be able to offer each other a productive exchange, they must do so based on their consideration of the credibility of promised patterns of behaviour. It is not enough to be known as a potential trading partner that might be able to secure a productive exchange, one must also be able to demonstrate this probability. Implicit in this statement is the argument that actors will economize on private enforcement capital as suggested above. And given that the net benefit of exchange is also a valued consideration, commitment must be of a form that economizes on the total cost of organization. The structure of representation will thus enter the equation when the discussion focuses on network type.

Finally, it is useful to reiterate that it is the general form of commitment to govern implicit exchange that will lead to variable cost. Whereas Hindmoor (1998) argues that efficiency in policy networks requires the relationships to be embedded – that is for trust to have developed between actors – other more visible instruments will also be important. The argument here is that trust really works at two levels: not only must actors have a legitimate expectation about the positive behaviour of their trading partners (i.e., that they

will behave as promised), they must also have an expectation that enforcement instruments will be levied against them only under circumstances of contractual breach. It is the existence of damaging consequences to opportunistic behaviour that leads to an efficient outcome of the trading game. Trust therefore is a result of consistent behaviour that develops when both actors have access to enforcement mechanisms, but have no reason to use them.⁴⁹

Of course it will be interesting to distinguish which enforcement mechanisms are used at the case-specific level, as I do in the following chapter. For the general theory though, all that is required is a demonstration that given the existence of some governance mechanism, the cost of exchange will vary with network structure.

4.3.1 A General Model of Governance Cost in the Policy Network

I begin by establishing a general model of governance cost in the policy network. Whereas the model presented in Chapter 2.6 took the choice of governance mechanism as given, here I hold the choice of policy and resources constant, and allow for governance cost to change. The focus is exclusively on the policy network form.

The reader will recall from equation (1) that the legislator's total cost of obtaining

⁴⁹ Trust will act in different ways depending on the enforcement mechanism utilized. For example, bilateral exchange implies that the penalty for breach of the agreement is the loss of rent. In order to facilitate a productive bilateral exchange, I must trust that you will not behave opportunistically. However, private enforcement mechanisms will also work in circumstances where I do *not* trust that you will behave in good faith. Here, I will threaten you with a penalty that goes beyond the loss of the gains-from-trade precisely because I have some reason to distrust you. If you are the legislator and I don't trust you, we can still develop a successful trading relationship if you 'trust' that I will engage in damaging protest if you act in bad faith coupled with my understanding that you will punish me for similar behaviour. The overall range of private enforcement would appear to be broader than simple conditions of bilateral exchange and embeddedness that Hindmoor (1998) implies.

productive policy resources is the sum of procurement costs and governance costs.⁵⁰

Consider now that policy network governance cost, $C_2(g)$, is represented as:

$$H_L[1 - F_L(E_L - y)] + H_P[1 - G_P(E_P + y)] \quad (5)$$

where $H_L[1 - F_L(E_L - y)]$ is the adjusted expected value of the legislator's hold-up outcome, $H_P[1 - G_P(E_P + y)]$ is the adjusted expected value of private interest group's hold-up outcome, and y is the "clearing point" at which the legislator and the interest group agree to shift some specified amount of private enforcement capital between them such that the total expected hold-up outcome is minimized.⁵¹ The first order condition for y that minimizes $C_2(g)$ can be written as:

$$H_L \cdot f_L(E_L - y) = H_P \cdot g_P(E_P + y) \quad (6)$$

In other words, the cost of governance between two actors given their exogenously defined private enforcement capital will be minimized when the expected net hold-up is equal for both, as shown in Figure 4.

The cost of governance in the policy network is thus seen to be a function of the hold-up potential pay-off for cases of contractual breach, the available private enforcement capital that each transactor brings to the table, and the ability of the transactors to shift this enforcement capital between themselves. This last point is key, as it is the method by which actors with differing enforcement capitals are able to come

⁵⁰ $\max_{\{s, k, g\}} EV = B(s) - C_1(s, k) - C_2(g) \text{ s.t. } k = k(s, x)$

⁵¹ This is the structure of Klein's (1992: 162) argument for the private sector, e.g., for franchisor - franchisee relationships. I draw quite heavily on his suggestion that actors are able to shift private enforcement capital between themselves by reliance on formal contractual terms. However, as is evident below, I do change the application quite dramatically to that of the policy network setting.

Figure 4. Implicit contractual shifts of private enforcement capital in the policy network.

together and reap the gains from trade by “shifting reputational capital⁵² between transactors so that each party’s reputational capital coincides more closely with its potential expected gain from nonperformance” (Klein and Murphy 1997: 418). Essentially, a tit-for-tat scenario is created where the punishment for opportunistic behaviour is such that each party has as much to lose from opportunism.

In studies of the private sector, the self-enforcing range of contracts has been used to analyze relationships such as the franchisor-franchisee contract (Klein 1992), risk sharing in strategic business networks (Jarillo 1993), and vertical integration in the pharmaceutical and entertainment industries (Klein and Murphy 1997). The general argument advanced in each of these studies is that private enforcement capital is transferred from the partner with a greater *ex ante* share such that formal contractual terms economize on the self-enforcing range, effectively lowering the costs of governance for all parties combined. This is an important lesson for policy network governance in two respects. First, it suggests that the researcher should look for trade-offs in private enforcement capital in a particular direction – from those who have a larger *ex ante* share to those who have a smaller *ex ante* share. Second, in the public environment where implicit contracts cannot always be formalized, reliance on self-enforcement would appear to be more significant than in the private sector.

Consider the first implication of the analysis of privately enforced contracts in the policy network. Figure 4 shows that private enforcement capital is transferred from the legislator to the interest group. I argue that this will be the general case for the simple

⁵² Read “private enforcement capital”.

reason that the legislator ultimately has effective decision-making power over public policy. In the face of a given interest group's private enforcement capital, the legislator will always have as a reserve commitment (reserve private enforcement instrument) – the ability to impose state-directed changes to the interest group's environment that might impose significant losses. In other words, the legislator always has as his or her disposal an opposing policy that could significantly harm the interest group in circumstances of defection. Admittedly, in order for such a threat to be credible, the legislator would have to demonstrate that any such policy change would not result in a worse pay-off in expected votes. However, given the significant scope of policy options and instruments for private enforcement at the legislator's disposal – a reflection of the public/private division of labour for policy-making that I alluded to in Ferejohn's (1990) discussion – I suggest that the general trade-off in private enforcement capital for policy network exchange will be from the legislator to the interest group.

To illustrate this point further, take the example of the hypothetical access policy I spoke of in Chapter 2. In order to secure the gains from trade in an efficient manner, the current discussion suggests that the group and the legislator will want to economize on private enforcement capital in the face of each other's hold-up potential. The reader will recall that the rent generated from trade in this case was a "better" access policy leading to more expected votes for the legislator and private utility for the group. For sake of argument, let me suggest that the legislator's hold-up potential is the gain that would be had by writing a guideline policy demonstrating his or her general concern for access issues without actually having to institute specific requirements regarding access (given

that changing current real access is costly e.g., building access ramps); the group's hold-up potential is the electoral damage that they could impose on the legislator after a specific policy has been written by publicly supporting an opposition party (e.g., 'thanks for the policy, but we're going to vote for your competitor and let others know about it'). Absent a mechanism to impose sanctions for hold-up, it is easy to see that neither party would behave honestly and the exchange would unravel as in the inefficient trading game earlier. In order to avoid this solution, the actors will appeal to their private enforcement capital to secure a self-enforcing contract.

The enforcement capital that each transactor brings to the table is therefore important in determining the outcome of the exchange. If both the legislator and the group can credibly commit to punishing the offending party by an equivalent amount, the solution is straightforward: a simple exchange of equally valued hostages will take place and the bargain will be secured. If, as I argue, the legislator can generally punish the group to a greater extent than the group can punish the legislator, self-enforcement will require a transfer of enforcement capital. In this case, the legislator will be forced to transfer a more valuable hostage to the group, as could, for example, be accomplished by offering the group a block-grant; in the presence of the legislator's opportunism, the group would hence have more funds with which to launch a protest.⁵³ By moving private enforcement capital from the legislator to the group, the self-enforcing range for the original exchange is guaranteed and the efficient solution to the trading game can be

⁵³ This would be akin to acting opportunistically in the creation of new policy resources that was discussed in Proposition 3.7 in Chapter 3. A similar argument has been made by researchers investigating intergovernmental grants (see Brennan and Pincus 1990; Breton 1996).

established. It is important to note, however, that the transfer of hostages is itself costly – a point that Klein (1992; 1997), Jarillo (1993) and Klein and Murphy (1997) do not discuss. The result of this will be seen below when I discuss the cost of governance in ideal-type networks.

The foregoing adds support for the second argument about the significance of self-enforcing contracts in the public as opposed to private sector. Were the access policy made by two firms that could ultimately refer their disagreements to the courts, the terms of the formal contract could be used as a means to economize on private enforcement capital (see Klein 1992; Klein and Murphy 1997). In some senses then, the case of the policy network illustrates a ‘purer’ form of self-enforcing contracts that, in the broader context of both private and public sector studies, would appear to be a particularly fertile analytical field.

Overall, the general model of governance cost informs the specific study of the relationship between network structure and network cost that is developed below. In particular, three lessons need to be remembered as I move from the realm of the general case to that of defining the ideal-type(s) of the policy network:

1. The policy network is an exclusive domain of self-enforcing contracts;
2. The self-enforcing range of contracts is determined by the analysis of actors’ expected hold-up potentials and their access to private enforcement capital;
3. In the general case, an efficient solution to the policy network trading game will require a transfer of private enforcement capital from the legislator to the interest group.

4.3.2 The Direct Network

The most basic ideal-type network is what I call the direct network. Here, exchanges will occur directly between the legislator and the interest group(s), as represented in the schematic diagram below.

Figure 5. Schematic diagram of the direct network.⁵⁴

The direct network is characterized by separate exchanges between the legislator and the private actor(s), with the simplest form being the one-on-one case (where $n=1$). I assume that governance costs are a function of the sum of the costs associated with guaranteeing each individual exchange, that is as n increases so too do governance costs. If, for instance, the legislator requires three different resources from three different actors to make one expected vote maximizing policy, each exchange is treated in isolation where the private actors do not have contact with each other. It is up to the legislator and each actor to develop self-enforcing contracts. The total cost of securing productive resources in the direct network – that is the sum of procurement costs and governance costs – will therefore depend on the interest specificity of the resources (as developed in Section 2.6), the available private enforcement capital (as developed in Section 4.3.1), and the total number of exchanges required (as n increases).

⁵⁴ Note: The arrows in the schematic diagram(s) represent the requirement for self-enforcing mechanisms and the transfer of private enforcement capital.

It should be noted that some network researchers might be critical of my treatment of the direct ideal-type as a *network* because there are no connections between private actors. However, I have defined the policy network simply as an organizational form where informal exchanges for interest specific resources are secured. In other words, there is a fundamental organizational difference between network-type exchanges, when compared to those organized on the market or in the bureau. My definition attempts to avoid the trap that has plagued prior research – namely that the character of the groups, including their number, is the criteria by which policy networks are defined. I argue instead that it is the character of the exchange itself that determines whether a network is a network. The direct network is therefore typified by a cost structure that is based only on the legislator-private actor relationship. Adding linkages between private actors fundamentally alters the cost structure of the network and is hence defined as a different ideal-type (i.e., the complex network – see Section 4.3.4 below).

In the absence of interest specificity, the direct network would resemble a market for interest group lobbying like that analyzed by Dixit, Grossman and Helpman (DGH 1997). In a multi-principal/common agency analysis DGH argue that if the government has access to efficient lump-sum taxation as a means to distribute legislative favours in return for non-discriminate political contributions from lobby groups, the government will capture the total surplus from exchange. If efficient lump-sum taxation is not a viable policy instrument, the authors argue that lobbies will have power to extract rent due to the cost that distortionary instruments place on the government (DGH 1997: 767). This is a legitimate argument only if the resources that interest groups bring to the table

can be utilized effectively by the legislator *regardless* of which group makes the contribution (i.e., \$100 from group A is equivalent to \$100 from group B).

However, if resources are not transferrable – that is group A’s contribution is not the same as group B’s contribution – even given efficient lump-sum taxation, the legislator will be unable to reap the entire surplus from exchange. The reason for this is that interest specific resources, by definition, cannot be procured elsewhere. To this extent, the private group owning an interest specific asset will have power vis-à-vis the legislator.

The implication of this is seen by looking at how the gains-from-trade are distributed among the contracting parties. In the DGH model the legislator receives the entire benefit.⁵⁵ If group resources are interest specific however, rent will be distributed between contracting parties due to the requirement of the legislator to discriminate between groups. And while the distribution cannot be determined *a priori*, one can expect that it will relate to the relative bargaining power of the legislator and the group(s). Bargaining power, in turn, will be affected by the value of the interest specific resources exchanged, coupled with the availability of alternative governance mechanisms, and is a case-specific consideration. In general though, the distribution of rent in policy network trades will accrue to each party, reflecting the special character of exchange involving

⁵⁵ At this stage it is reasonable to question why groups would ever engage in an exchange if their trading partner reaps all the benefit. For DGH (1997), the answer rests on the use of tax instruments to be able to penalize non-contributors. Essentially, groups find themselves in a worse-off position if they don’t contribute, than if they do contribute and still get nothing in return.

interest specific assets.⁵⁶

In the direct network, private actors represent themselves and incentives are high-powered i.e., both positive and negative effects of action are felt directly. On the surface, this looks like a double-edged sword in that interest groups or firms might be viewed to have a greater incentive to behave opportunistically as they would gain all the benefits from doing so. However, the legislator will know this and the commitment problem inherent in self-enforcing contractual relationships can be dealt with directly in the trade; the enforcement and monitoring costs of the contract are direct. In essence, only one set of transaction costs must be dealt with – those that exist between the legislator and the private actor(s).

The transaction costs of which I speak here include the costs of negotiating the trade, monitoring the agreement and enforcing the contract. If these costs can be internalized through the utilization of the self-enforcing implicit contract, the gains from trade that allow for expected vote maximization on the legislator's side of the bargain and utility gains on the private actor side can be secured. It is the structure of the transaction costs as typified by their direct treatment between the contracting parties that defines the general structure of the direct network.

A final comment must be made regarding the interrelationship between interest specificity, which is ultimately the driving force for implicit exchange in the first place, and the treatment of governance costs in the self-enforcing contract. The legislator, it

⁵⁶ It is important to note that the *actual* distribution of rent may not necessarily correspond to the *agreed upon* distribution of rent. This, of course, is a function of opportunistic behaviour and is the reason why governance mechanisms are required in the first place.

must be remembered, enters into the bargain for reasons of expected vote maximization. In this respect, a trade-off is possible between the costs of procuring the interest specific resource(s) and the costs of designing self-enforcing contracts. In other words, situations may arise where the legislator could rely less on interest specific resources to maximize expected votes if the costs of self-enforcement were high (but still lower than market or hierarchy). The final identity of each ideal-type direct network (e.g., the number of private actors involved), is therefore a reflection of both the conditions of interest specificity and the efficiency of contractual governance.

4.3.3 The Indirect Network

The indirect network, as its name suggests, is structurally different from the direct network in that trades between the legislator and the owners of interest specific resources are mediated by a third party – the professional consultant lobbyist. In essence, the consultant lobbyist acts as a “hired gun” to represent the private actor’s interests before the legislator; the relationship between the “buyer” of the interest specific resource (the legislator) and the “seller” of the resource (the private actor) is distanced by the creation of second and third relationships, namely the legislator-consultant and consultant-actor links. The indirect network is at minimum a three member association with the schematic structure below.

The emergence of a tri-level relationship in the indirect network affects a cost structure that is analyzed by looking first at each individual link, and then looking at the overall effect or sum of these links. In Figure 6 it is easy to see that two independent

Figure 6. Schematic diagram of the indirect network.

relationships exist: the legislator-consultant (L-C) and the consultant-private actor (C-P). The legislator-consultant link is akin to the legislator-actor link in the direct network in that it is an informal or implicit arrangement. Simply because the consultant represents a point of view other than his or her own does not change the nature of the relationship; the consultant and legislator cannot appeal to court enforced contracts in policy-making anymore than could the legislator and private actor. At first glance it would appear that from the legislator's perspective the cost structure of doing business in the indirect network is similar to that of the direct network. However, as the complexity of procuring resources and designing self-enforcing contracts in the indirect network is considered further, a new interpretation is required.⁵⁷

The existence of the consultant-actor relationship deepens the complexity of the indirect network in comparison to the direct network. From the outset, the consultant-actor relationship will be subject to potential inefficiencies resulting from opportunistic behaviour that derive from the principal-agent problem. Even if one reasonably assumes that the consultant-actor contract is a formal one (i.e., the private actor formally hires the

⁵⁷ The reader will recall that empirical evidence uncovered in Chapter 3 would appear to support this claim.

consultant by paying money for services), the legislator can never be sure if the moral hazard problem inherent to principal-agent relationships has been overcome.⁵⁸ As such, the legislator faces an additional level of the commitment problem for self-enforcement – he or she must determine if the consultant is honestly representing the private actor’s position.

One interpretation of the tri-level relationship in the indirect network would be to assume that secondary cost-effects due to the consultant-actor contract raises the legislator’s overall cost of governance. This would be the result if the legislator met higher transaction costs in determining whether the consultant was honestly representing the private actor’s position, even if the private actor were honestly representing its own position to the consultant. In other words, if the legislator faced the principal-agent problem vicariously through the consultant, particularly under the general condition where the legislator transfers private enforcement capital to the group, the legislator would be unable to guarantee a pure exchange due to the existence of the consultant mediator. Two forms of enforcement would be required: one for the private actor and the sanctity of procuring the productive resource, and one for the sanctity of the legislator’s relationship with the consultant.

It is more likely, however, that the existence of the consultant as “middleperson” in the actor-consultant-legislator nexus actually lowers the cost of exchange for the legislator. Consider how this is possible. The professional consultant relies on his or her

⁵⁸ For a review of the principal-agent problem see for example Breton and Wintrobe (1982); Mueller (1989 Chapter 14).

ability to effect successful private actor-legislator trades in order to make money. As such, the consultant has a vested interest in maintaining a strong and credible reputation as an honest broker. Overcoming the principal-agent problem inherent in the consultant-actor relationship will therefore be a key consultant strategy, as reputational failures will result in lower future income. It is also probable that the consultant will have strong reputational capital, either due to repeated contact and ties with policy-makers or due to prior social links.⁵⁹ The result is a situation where the consultant's credentials are credible in the eyes of the legislator because of costly, irreversible investments in reputation that reveal competence and earning power (*cf.* Klein 1997b).

The legislator is therefore likely to face a lower set of transaction costs in dealing with consultants in the indirect network. Not only will consultants make significant investments in developing and maintaining private enforcement capital – most notably trust and reputation – they will also carefully screen their clients to ensure that they represent groups or firms who are unlikely to behave opportunistically. From the legislator's perspective then, the structure of exchange in the informal network enables a lesser requirement for the transfer of enforcement capital, and a correspondingly lower governance cost.

The structure of the indirect network will also have an effect on the distribution of the gains-from-trade, in that the money paid to the consultant by the private actor will come from the surplus generated in the exchange. The actor-consultant relationship is

⁵⁹ Prior "social links" will include the common situation where ex-Ministers, ex-Members of Parliament, or party members enjoy privileged access to legislators of the same political stripe.

therefore also an important consideration when it comes to determining whether an indirect network will emerge. For the group or firm, hiring a consultant will be rational when the rent generated in the indirect network is greater than that which could be generated in an alternative governance structure. If for some reason the group concerned with policy-making feels that it will be unable to secure a productive exchange directly with the legislator, perhaps for reasons of collective action discussed in Chapter 3, a consultant lobbyist might be hired to do their bidding, potentially resulting in an indirect network form. The group will therefore consider its own strategic position in policy-making relative to comparative organizational arrangements, choosing to hire a consultant only when there is an expectation that doing so will result in productive exchange.

4.3.4 The Complex Network

The final ideal-type network is the complex network where the intricacies of bargaining are increased by connections between groups and/or their consultants. The schematic representation of the complex network is shown below.

Figure 7. Schematic diagram of complex network types.

The ideal-type complex network simply refers to the additional relationship that exists between private actors – a relationship non-existent in the (in)direct form. As illustrated above, this link can be drawn between private actors, between consultant lobbyists, a consultant lobbyist and an actor, or any combination thereof. The fundamental structural consideration of the complex network is not the specific type or number of private actors, simply the fact that there is a relationship between them.

The complex network is perhaps the most fascinating form of the policy network due to the unique manner in which the legislator can treat the network as a site for procuring (multiple) policy resources and the way that governance is effected between actors. The emergence of multiple connections in the complex network implies that the treatment of interest specificity and governance is somehow different than for exchanges that are effectively independent as in the direct and indirect networks. To theorize about this difference, I begin by looking at the special treatment of interest specific resources in the complex network.

The reader will recall that exchanges governed by network form in policy-making will occur if and only if the legislator is unable to procure the resource(s) on the market or make the same resource hierarchically at lower cost. Membership in the network is reserved for those actors who can produce gains-from-trade through their ownership of vote productive policy assets, remembering that vote productivity is a function of interest specificity. The complex network is therefore one in which the legislator contracts for multiple resources from multiple sources to ensure expected votes.

I argued earlier that in contracting for multiple interest specific policy resources

the legislator will be unable to extract the entire surplus from the direct network as seemed possible in the model presented by Dixit, Grossman and Helpman (1997). From the legislator's perspective the same constraints are evident in the complex network and one can expect to see the structure of governance reflect this. And yet because private actors are in contact with each other in the complex network, I argue that the legislator is presented with a unique opportunity to economize on the self-enforcing range of contracts that is not possible in the (in)direct network form.

To illustrate the nature of the complex network I return to the example of the forest harvesting policy introduced in Chapter 2. If the legislator values both private actor's resources – that is he or she wishes to avoid protest from the environmental group *and* guarantee jobs created by the logging company – neither group will be able to engage in an exchange to the exclusion of the other.⁶⁰ Any rents generated from trade will therefore reflect some degree of attention to both groups' interest specific resource, as in the case when the policy is written to guarantee harvesting rights on the condition of reforestation.

The complex network presents the legislator with a unique opportunity to economize on private enforcement costs when compared to the other ideal-types of networks. Whereas in the direct and indirect network forms the cost of governance was resolved at the point of exchange between the legislator and the private actor (or its consultant), the complex network can act to facilitate an additional transfer of

⁶⁰ To simplify the discussion I assume that both groups represent themselves and do not hire consultant lobbyists to do their bidding.

enforcement capital between the actors/consultants. Each member of the network will have a stake in guaranteeing the sanctity of the exchanges. In the example above, the legislator wants the guarantee of jobs and the avoidance of protest to maximize expected votes, the environmental group wants to guarantee re-forestation given that it cannot force the legislator to exclude the logging company, and the company wants to generate net profits given that it cannot force the legislator to exclude the environmental group. The result is that incentives are created for all parties to ensure that opportunism does not occur.⁶¹

The complex network effectively generates a new actor-actor level at which self-enforcing contracts in policy-making can occur. For the legislator, this is an important point to the extent that actor-actor enforcement can decrease the legislator's cost of governance. Ultimately, it is in every actor's interest to avoid opportunism. As such, the legislator can effectively use the incentive that is created for each private actor to monitor the other's behaviour as a means to economize on governance costs. The extent to which this happens will be a reflection of the actors' incentive to monitor each other. Under circumstances where the actors have a common policy goal, the actor-actor incentive will be a measure of their expected loss from having the legislator withdraw the policy prescription; under circumstances where the private actors have differing policy goals, as in the harvesting case above, the actor-actor incentive will reflect not only the loss of the policy, but also the chance that any new policy that could be written might further

⁶¹ Underlying this discussion is the assumption that reverting to the status quo, as would happen if the network exchange were to unravel, is a worse state of the world for each party. Were this not the case, none of the parties would invest in the exchange in the first place.

damage private utility (i.e., favour the other actor's position fully).

The existence of a multiple tradeoff in private enforcement capital is different from Klein's (1992; 1997) one-on-one treatment and raises the important question about whether the complex network might lead to a secondary hold-up problem. Because the private actors are in contact with each other it seems reasonable to suggest that a potential for collusion exists that could damage the legislator – perhaps to the point where the private actors could gain the entire network surplus to the exclusion of the legislator. In order for the complex network trading game to be efficient, it is therefore imperative from the legislator's perspective that this second hold-up problem is dealt with.

The potential for a second hold-up problem at the actor-actor level can be dealt with in three ways. First, the legislator may have the ability to threaten private actors that he or she will simply 'make' the productive resources by moving into a hierarchical governance mode.⁶² In this scenario private actors would lose any share of surplus rent and collusion would be an irrational strategy. Second, if the legislator faces perfect competition in the marketplace for votes, he or she can credibly suggest to private actors that no additional rent is available for hold-ups arising from collusion. In political equilibrium, the actor-legislator trades will be necessarily efficient given that any moves to secure additional rents would result in the legislator's defeat at the ballot-box.

In the absence of perfect political competition – a case that is seemingly more realistic to the real world of politics – avoiding collusion and the second potential hold-up

⁶² It is important to remember that the threat of hierarchical governance may not always be credible. Please see again Section 2.3-2.4.

problem will rest on the effectiveness of governance in the network. Here, it is the very nature of the network form of exchange that results in efficiencies in the trading game. One must consider that the complex network creates rent in the form of expected votes for the legislator and benefits for private actors only if the total vector of exchange is internally consistent. Jarillo (1993: 143) argues that the essence of networks is such that “the whole system is self-reinforcing, for every characteristic of the network builds on the others: adaptation, specialization, trust, long-term outlook, internal consistency *vis-a-vis* the outside world, etc., which provide efficiency and flexibility.”⁶³ The sanctity of the complex network is thus a reflection not only of actors’ ability to govern against opportunism in productive exchanges, but also of the effectiveness with which governance structure is able to protect against possible group collusion.⁶⁴

Overall, the general argument is that the legislator will choose to govern the procurement of resources in a complex network if group-group enforcement incentives are created such that the legislator can economize on overall costs.⁶⁵ I argue that this will

⁶³ I find Jarillo’s (1993) argument persuasive, although it is somewhat tautological in that he gives the impression that networks exist because they are efficient and then their very existence deepens the efficiency. While I think he is probably correct in his assertions *given* that the network exists in the first place, I encourage the reader to remember that the emergence of network forms of organization need not be predicated only on conditions of internal consistency. Networks are more appropriately viewed as emerging when the self-enforcing range of contracts is established through the use of both relational instruments such as trust and reputation, and more impersonal instruments such as sunk investments and hostages.

⁶⁴ My assertion that the complex network relies on governance mechanisms and not political competition to prevent group collusion is a useful one as it maintains the general focus being advanced in the dissertation. Still, future research will be instructive to elaborate on the relationship between network forms of policy-making and the broader concerns of political competition. Such an examination, while clearly useful, is beyond the scope of the current study.

⁶⁵ Implicitly this conclusion suggests that there is an optimal size of the network that will be determined by the point at which the legislator’s expected marginal benefit of policy-making is equal to marginal cost. This can be seen by looking at the effect that adding another network member has on the benefit of

likely be the case when the required resources must be generated from multiple sources and the structure of the exchange allows for actor-actor interactions. The corollary to this argument is that under circumstances where actor-actor transfers in private enforcement are not possible, the network is more likely to be of direct or indirect form.

4.4 Comparison of Network Types

The theory presented above suggests that network structure has an independent effect on the total cost of policy-making when legislators engage in implicit exchanges for vote productive resources characterized by a non-market, non-hierarchical range of interest specificity. Further, the theory develops three ideal-type network structures, the direct, indirect and complex, and argues that the cost of governance in each will differ. This argument is illustrated in Figure 8.

The illustration implies that for some policy, s^* , requiring resources of level k^* , the legislator faces three network cost curves that will vary with respect to the costs of governance as outlined in the theory above. All other things being equal, I argue that the legislator will choose to govern resource procurement given that the alternative cost structures of the ideal-type networks is: Complex < Indirect < Direct.⁶⁶ Proposition 4.1

receiving another resource that might lead to a more vote-productive policy, compared to the procurement and governance costs associated with doing so. Network size is therefore a function of the legislator's expected vote maximizing strategy.

⁶⁶ Note: This assumes that all three ideal-type networks exist. They may not. As a result, if there is a capital cost associated with creating ideal-types, the legislator may find it more beneficial to work with network types that presently exist. This argument suggests in particular that further research on interest group strategies associated with when they would want to 'talk' with other groups or not, when they will hire consultant lobbyists and so on, is required. For my purposes here, however, the conclusion is important in that it isolates the legislator's general choice in cost discriminating terms.

Figure 8. Cost of governance in the complex, direct and indirect network forms.

summarizes:

Proposition 4.1: For policy-making governed by policy network, the legislator faces a lower governance cost function when the network is of the complex ideal-type when compared to the direct and indirect ideal-types.

Holding other factors constant then, I argue that from the legislator's perspective the choice between network types will reflect the alternative cost structures inherent to each type. The structure of the network has a direct effect on the structure and cost of exchange. As such, the expected vote maximizing legislator will choose the least-cost network to govern the procurement of productive policy resources when exchange is limited to the informal or self-enforcing range.

At the same time, however, this choice will be a reflection of the total net benefit in terms of expected votes. Of fundamental importance then is the position of governance cost relative to procurement cost and the productivity of the policy and the resource(s); governance costs do not alone affect the legislator's choice and governance mechanisms must be viewed in relation to the best-available alternatives. The implication of this is that the legislator may not always be faced with a situation where choosing potentially less costly governance mechanisms is an available option.

This is an important conclusion because it suggests that while it is useful to theorize about the comparative advantages of feasible alternative governance mechanisms, the total range of options may not always be available. For instance, different groups will choose different representation strategies – some choosing to hire consultants, others choosing to represent themselves. In turn, this choice affects the

structure of exchange in the policy network and the governance options available to the legislator. In addition, there may be cases where higher governance costs are offset by a higher number of expected votes, or where expected votes can be secured with fewer resources leading to lower governance costs, and so on. Having said this, it is clear that the legislator's strategy will be a reflection of their concern with the *overall* effect of choosing which policy, which resources and which form of governance are required to maximize expected votes. Transaction cost theory predicts that given the range of feasible options for some policy-making situation, the legislator will choose to align expected vote maximizing behaviour with the appropriate governance mechanism. For the self-enforcing range of contracts, this choice will be between the direct, indirect and complex ideal-type networks.

4.5 Empirical Evidence on the Choice of Network Type: *The Lobbyists Registration Act* Revisited

Once again, I turn to the *Lobbyists Registration Act* (LRA) to find empirical support for the argument that there should be evidence of the cost-superiority of governing informal exchange by complex network – that is one should see empirical evidence of a greater number of complex networks as compared to either the indirect or direct types. As in Chapter 3, the data found in the registry is treated as a proxy for exchanges of the type that would occur in the policy network, given that no data set exists that compiles a list of actual trades. Therefore, I treat the number of lobbyist registrations as a measure of exchange potential. No assertion is made that a lobbyist who registers

will necessarily engage in an exchange; instead, I assert that if exchanges were to take place the shape of the registry would reflect the shape of the network.

It is important to stress, therefore, the necessarily informal nature of the evidence which precludes a more rigorous empirical test than the one presented below. As I have discussed throughout this chapter, the character of governance in the policy network setting will depend on the transfer of private enforcement capital between actors in an informal, self-enforcing exchange. Presenting a more formal test of the effect of private enforcement capital on ideal-type network choice – perhaps in a regression analysis as in Chapter 3 – would require a database linking actual exchange(s) to actual transfers of private enforcement capital. Unfortunately, such information is currently unavailable (and the search for it may well lead to future empirical research as I discuss in Chapter 6). And yet even given the acknowledged limitations of the data analyzed below, I argue that a preliminary correlation can be drawn between the distribution of the number of actor registrations for a given legislative decision, and the expected ideal-type form of the network that would govern self-enforcing exchange.

Registrations under the LRA are compared for the twenty-six government bills that have been passed by the House of Commons in the (current) 36th Parliament. The choice of comparing government bills as opposed to orders-in-council or decisions made under delegated statutory authority is made simply because the list of bills is easy to obtain, it is publicly visible, and the passing of bills is clearly the responsibility of legislators and is thus a choice consistent with the theoretical arguments in the dissertation.

A simple examination of the contingency table is used to test the argument that one would expect to see more complex ideal-type networks than either direct or indirect forms based on their cost-advantages for governance. Ideal-type form is viewed as a reflection of the number and structure of lobbyist registrations. Multiple registrations – i.e., multiple actors – for a given bill is assumed to represent evidence that a complex network is likely to exist. Of course it is impossible to determine whether the registered lobbyists are actually engaged in transfers of private enforcement capital as argued for the complex network. I therefore assert a ‘cut-off’ number of five registrations as the point at which the legislator is likely to be able to economize on private enforcement due to network structure. Five is strictly an arbitrary choice, although recent arguments have been made that suggest that network efficiency/cost is a function of density (see Arrow 1998). If it is conceivable that the legislator could economize on enforcement facing two additional network members (as in Section 4.3.4 above), then choosing five as the arbitrary cut-off point will actually underestimate the evidence of complex network cost advantages (in fact, the “cut-off” number could range between 3 and 9 and not affect the results).

Table 8 presents the shape of the lobbying activity regarding those bills passed to date in the 36th Parliament.⁶⁷ Field-type is controlled for based on the conclusion from Chapter 3 that there are likely to be a significantly greater number of lobbyist registrations in experience fields. This reduces the possibility that the results are a function of field-type as opposed to network type. In fact, experience fields in the sample

⁶⁷ Note: The chapter was written during the summer of 1998, and thus “to date” is “up to August 1998”.

Table 8. Ideal-type Network by Number of Registrations per Bill⁶⁸ by Field-type

Policy Field-Type †	Number of Registrations for DIRECT Network	Number of Registrations for INDIRECT Network	Number of Registrations for COMPLEX Network	Totals
Search	6 (C-11, C-16, C-18)	n/a	22 (C-19, C-28)	28
Experience	n/a	1 (C-5)	83 (C-4, C-9, C-15, C-17, C-21, C-26)	84
Totals	6	1	105	112

† Field-type was defined as in Chapter 3.

⁶⁸ Note: Of the 26 Bills passed in the 36th Parliament, 14 had no lobbyist registrations. This of course should not be surprising as the legislator has three basic institutional options for resource procurement, only one of which is the network.

do constitute a significantly larger proportion of registrations than the search fields as would be expected according to Proposition 3.1 (see Appendix 7). This indicates that not only is policy network governance affected by exogenous conditions as shown in Chapter 3, but that policy network *type* will also be affected.

The registration evidence supports the argument that complex networks are more likely than either indirect or direct forms. Unfortunately, the numbers of direct and indirect ideal-type networks prevents a statistical analysis of the contingency table such as a Chi-square test because some of the cell proportions are too low.⁶⁹ Still, the distribution of registrations is obviously not uniform with respect to network type: it does appear that the complex network is utilized more often than either the direct or indirect networks.

In the future, what is required is an in-depth examination of how network actors facilitate the transfer of private enforcement capital in an effort to secure gains-from-trade in policy-making. In the absence of a “private enforcement” database, the case-study approach affords the researcher with a good opportunity to trace strategic behaviour in the informal network setting. Not only is such an exercise useful from a theoretical perspective, it also illuminates the challenges facing both legislators and private actors alike in the real world of policy-making. In the following chapter, I examine the transacting behaviour evident in the case of rbST regulation in Canada.

⁶⁹ As Sincich (1985: 630) states: “Because it is widely used, the Chi-square test is also one of the most abused statistical procedures...the chi-square test should be avoided when estimated expected cell counts are small, for it is in this instance that the chi-square probability distribution gives a poor approximation to the sampling distribution of the χ^2 statistic.”

4.6 Conclusion

The Chapter argues that contracting in the public sector is fundamentally different than it is in the private sector, or in public sector settings where resources do not vary in their interest specificity, for two reasons. First, there are often no courts to resolve contract performance difficulties, and thus dealing in the self-enforcing range of contracts is fundamentally more important in the public sector. This is particularly true when resources are in the non-market/non-hierarchy range of specificity. In fact, the policy network setting would appear to be an ideal situation in which researchers can examine what Klein (1992) has referred to as the economy of private enforcement capital.

Second, the nature of what is being exchanged – interest specific assets – implies that the distribution of rent in the policy network is different than would be expected if resources from different groups are perfectly substitutable. In other words, the policy network is not an arena where legislators can capture all the gains-from-trade, as might be the case in a non-discriminate lobbying market like that analyzed by Dixit, Grossman and Helpman (1997). Instead, the policy network must be viewed as a response to legislators' requirement to procure *different* resources from *different* sources in order to maximize expected votes.

In addition, I have argued that comparing between ideal-types suggests that from the legislator's perspective, the cost of contracting will be lowest in the complex network. Empirical evidence has supported the theory, and leads to the conclusion that in a positive transaction cost environment of policy-making the legislator who faces the task of procuring resources by network form will do so in a manner that economizes on the self-

enforcing range of governance. The cost of different sorts of informal contractual arrangements are seen to be a function not only of the interest specific nature of the policy resources, but also of the structure of the network.

Overall, the importance and complexity of exchanges governed by the policy network bares witness to the special nature of contracting in policy-making. Whereas dealing with opportunism is seen to be as important as it is in the private sector, organizational responses would appear to rely more heavily on the ability of actors to enter into self-enforcing contractual relationships. Indeed, it is by looking through the lens of transaction cost theory that the independent role of the policy network as a mechanism for the governance of trades in policy-making is established.

Chapter 5

Market, Policy Network and Hierarchy in the Regulation of Scientific Milk

5. Introduction

The transaction cost theory of policy-making advanced in the dissertation argues that the primary focal point of research is the organization of contractual relations between governmental and non-governmental actors as each attempts to secure gains from exchange in a cost-economizing manner. Expected vote maximizing legislators and utility-seeking private actors behave strategically in an effort to guarantee their self-interested positions in an environment characterized by positive transaction costs, interest specific policy resources and the requirement to institute governance mechanisms to guard against opportunistic behaviour. The result, is a special public sector game where the range of contractual relations and the corresponding choice between alternative governance structures is seen to affect the overall costs of policy-making.

The transaction cost researcher will therefore be interested in examining cases where the tenets of theory find their empirical reflection in the real world of policy-making. Studying the contracting strategies of a specific set of actors who coalesce around a given issue in an attempt to secure efficient trades is a vital task for the student of public policy. Indeed, one of the strengths of transaction cost theory is its ability to uncover the rationale for actor strategies in the intricate policy-making process. By looking through the transaction cost lens, one is able to emphasize why it is that variable contracting and organizational choices are evident in the observed patterns of policy-making.

In what follows, I trace the policy process that has surrounded – and continues to surround – the regulation of recombinant bovine somatotropin (rbST) in Canada. I argue that the rbST case is a particularly good one for the transaction cost researcher in that multiple policy resources are being contracted for and multiple governance arrangements are evident including the market, policy network and hierarchy; both formal and informal processes are at play. Furthermore, the policy-making process for rbST is a case where the required resources are interest specific, where the credibility of commitments and actor strategies are reflected in governance structure, and where the private enforcement of informal contracts is a key consideration – all central aspects of the transaction cost approach. The rbST case reveals patterns of behaviour that not only shed important light on the manner in which the issue itself is being dealt with, but also places the rbST case within the broader arena of science-based policy-making, and affords the researcher valuable evidence to support the transaction cost theory of policy-making.

The case study is important for the dissertation in that it represents a further empirical examination of the manner in which policy actors organize to control the cost of policy-making. At the case level, actor strategies can be seen in terms that have a direct impact on the course of a given policy. In other words, the theoretical constructs developed in the previous chapters are set in motion by placing them directly in a real-world context. And while it is important to remember that the specific characteristics of the rbST case will be unique, I argue that key principles of organization and contracting evident in the case, can be applied more generally to the transaction cost theory of policy-

making.

The chapter proceeds by telling the various stages of the story in transaction cost terms. I begin with an examination of the issues and controversy surrounding the licensing of rbST in Canada (Section 5.1). I then present an argument about why the rbST case as an example of science-based decision-making should be viewed in transaction cost terms (Section 5.2). A brief chronology of events is traced (Section 5.3), and a transaction cost analysis of key actor positions is presented (Section 5.4). I then investigate the response to the controversy, showing that by looking at the dynamics between the formal and informal sides of the policy process, the organizational response to contracting for required resources matches that which is informed by transaction cost theory (Section 5.5). I rely not only on published sources to support the examination, but also on information gathered through interviews with the various players.⁷⁰ I conclude with a comment on what the rbST case reveals for the transaction cost view of policy-making, and for the possible future of biotechnology regulation in Canada (Section 5.3).

5.1 The Issue

The potential use of rbST in the Canadian dairy industry has stimulated considerable debate over the past decade with battles being waged over the science of rbST, the socio-economics of rbST, and the process by which rbST is regulated (Powell

⁷⁰ Note: I was given permission by Mr. Réjean Bouchard of the Dairy Farmers of Canada, Ms. Chris Mitcheler of the Consumers' Association of Canada, and Mr. Timothy Finkle of the National Dairy Council to quote comments made by them in personal interviews. Other individuals, most notably officials at Health Canada and Industry Canada, granted interviews conditional on anonymity.

and Leiss 1997; Mills 1996). As one of the first veterinary drugs to enter the Canadian regulatory food process that is manufactured using biotechnology, rbST has generated significant concern amongst a variety of actors who argue that they have a vested interest in the outcome of the regulation of rbST. As such, regulators have been faced with a difficult task in balancing the formal scientific criteria by which rbST will ultimately be judged, against the socio-economic concerns raised by producers, dairy processors and consumer advocates.

From a regulatory perspective the rbST case is, on the surface, seen as a strictly scientific issue. The Bureau of Veterinary Drugs at Health Canada is charged with the responsibility to govern the licensing of rbST in Canada under the *Food and Drugs Act*; Canada has an established, formal, science-based regulatory process and there appears to be little room for debate. However, a closer examination of the case reveals that extra-scientific concerns – mainly socio-economics – can be shown to have had an informal effect on the decisions made in the debate over regulating rbST in Canada. I argue that this should come as no surprise and, in fact, the rbST case may well have set the stage for a new comprehensive Canadian biotechnological regulatory strategy in which both science and socio-economics play a key and legitimate role.

Bovine somatotropin (bST)⁷¹ is a naturally occurring protein growth hormone that stimulates milk production in cows. Without it, cows would be unable to produce milk at all (Peel and Bauman 1987). Recombinant bovine somatotropin is a man-made, genetically engineered, copy of the natural protein and represents one of a growing

⁷¹ Bovine somatotropin is sometimes also referred to as bovine growth hormone (BGH).

number of biotechnology products that can be produced efficiently, easily, and safely by utilizing the well-established processes of recombinant DNA technology. Recombinant DNA techniques are currently used to manufacture a wide variety of important human and animal health products, including insulin and calcitonin (Agriculture Canada 1993).

rbST leads to a potential increase of 10-25% in milk production from a corresponding 5-15% increase in feed. It has been estimated that this increased efficiency in milk production could lead to as much as a 17.5% boost in average annual returns on dairy quota values for Canadian farmers (Stennes *et al.* 1990). As such, proponents of the drug argue that rbST could play an important role as a new and efficient dairy-farm management tool. Critics, on the other hand, are worried about the effect that adverse consumer reaction to the introduction of what some have labeled as “genetically engineered milk” could have on the safety of the milk supply and the economic viability of the Canadian dairy industry.

The licensing of rbST in Canada has become a controversial issue for policymakers mainly due to questions about the criteria by which rbST specifically, and biotechnology products in general, are deemed to be acceptable for introduction into the marketplace. And while the current federal regulatory system has a well-defined testing process for new animal products based strictly on scientific analysis (Doern and Sheehy 1997), the rbST issue has witnessed the introduction of extra-scientific concerns about the socio-economic impact that biotechnology raises for consumers (Speller 1994). At its base, the debate is about the extent to which scientific information alone is used as the standard to judge the public desirability of products like rbST.

From a social perspective, this debate is particularly important given the fact that with current analytical techniques it is impossible to detect differences in milk from treated and untreated cows. On the market, this means that there is no way to test for milk from rbST-treated and untreated cows, which potentially impinges on the freedom of market choice. Indeed, additional controversy over the labeling of milk and milk products has been led by industry and consumer advocates who claim a strong desire for freedom of choice. Further exacerbating this difficulty is the fact that milk marketing in Canada is the jurisdiction of both the federal and provincial governments, and each province can legally have different requirements with respect to labeling, including mandatory labeling for rbST. Even voluntary labeling – either positive “does contain” or negative “does not contain” – is difficult to manage given that there is no scientific technique to detect whether claims are legitimate. And while some have suggested that an affidavit system might be developed whereby farmers and milk pools register their use of rbST, critics are still arguing that if an effective second market for milk and milk products from treated and untreated cows cannot be established, Canadians do not either need or want rbST.

The controversy about rbST in Canada is therefore seen to boil down to three general concerns: 1) human and animal health safety; 2) freedom of industrial and consumer market choice; and 3) controversy about the regulatory process itself. From a public policy perspective the controversy over the regulatory system raises questions about institutional design. Primarily, the policy researcher will be interested in determining if current formal decision-making processes are suitable for conflict

resolution, or, whether alternative or additional mechanisms are also required in controversial situations such as those which surround rbST. Stated another way, the central issue is really one of whether current organizational design facilitates the procurement of *all* productive policy resources, and if not, how will legislators respond.

In transaction cost terms, the rbST case is therefore seen as one where contracting for multiple resources is required to make vote-productive policy. The conflict that has emerged is viewed as a dispute between groups who support the legitimacy of relying only on scientific policy resources to judge the acceptability of rbST for the Canadian marketplace, versus those actors who argue that socio-economic concerns must also play a key role in the regulatory process. Legislators are therefore faced with a difficult task in designing appropriate mechanisms to govern the procurement of all productive resources required to make vote-maximizing policy choices.⁷²

5.2 The Transaction Cost Nature of Science-Based Decision-Making

The arena of science-based policy-making is rife with difficulties in resolving conflict between scientists, lay advocate and politicians, particularly when “scientific criteria of truth clash with legal standards of evidence and with political notions of what

⁷² It is important to note that I treat the rbST issue as a “policy case” as opposed to a “decision-making case” for two reasons. First, I suggest that while the “policy” versus “decision” distinction is a useful one when discussing the impact or scope of a given case on broader issues such as the role of science in regulation (see Doern 1998), the fundamental requirement for actors to govern contractual relations – both formal and informal – will not change whether a case is viewed as a “decision” or a “policy”. Second, and perhaps more importantly for my purposes here, it can reasonably be argued that the rbST case represents a fundamental challenge in the process of biotechnology regulation, potentially effecting lasting regulatory policy change. In other words, even given that the issue has been regarded by some as just another product “decision”, in truth, it is an issue about policy-making.

constitutes sufficient ground for action” (Majone 1989:4). These difficulties are particularly crucial when the issue at hand is contentious or involves some factor of risk assessment for human safety (Irwin 1987; Throgmorton 1991). Organizational design is therefore an important consideration in determining how debates over science and its implications are resolved in the regulatory process.

Issues regarding the appropriate design of the decision-making process become increasingly important as conceptual arguments are waged over the “correct” criterion for reconciling debates. Primarily, the battle here is between those who view the public with contempt regarding their ability to understand or engage in rational decision-making (e.g., Lewis 1990), those who support the notion that the public will better understand decisions taken on their behalf if regulatory agencies undertake risk communication (e.g., Powell and Leiss 1997), and an increasingly accepted view that even though the non-expert public might not fully understand the science of risk, risk is also socially constructed and the non-expert view must play a vital role in the politicization of risk decision-making (e.g., Cutter 1993). Essentially, there is a call for the pluralization of science-based decision-making, in addition to what can be seen as the pluralization of science itself (Doern 1998).

The pluralization of science-based decision-making is particularly important given that legislators generally view the advice of experts as much, if not more, as political information rather than ‘neutral’ or ‘objective’ analysis; they “do not understand analysis, policy studies, and other forms of expert information in isolation from their understanding of the people who have produced it” (Bimber 1996: 5). Science-based

information is viewed as being group-specific. The implication of this is that as more groups make legitimate claims for entrance into the decision-making arena, more 'types' of information are likely to be introduced as well, with science potentially taking a back seat to other concerns. This will be particularly true in fields such as biotechnology where science is only the enabling discipline behind the creation of technologies whose use is intended to be applied solely for economic gain, rather than as "pure science". Indeed, some argue that "the creation of wealth through biotechnology firmly places (it) within the industrial sector and it is to the business community that one must then look to discern how (it) is to be applied and ultimately used" (Ratledge 1992: 1). The organization of decision-making must therefore be judged primarily by looking at the manner in which different groups are seen to affect the nature of the resources that are required to draw appropriate public conclusions.

For legislators, science as a policy resource can be viewed as being interest specific. This is for two reasons. First, as a policy resource science has two components; its basic informational quality (i.e., is a drug safe, efficacious and effective?), and its credibility quality (i.e., will the public *trust* claims of scientific safety, efficacy and effectiveness?). This implies that science in policy-making has a political dimension that is not easily redeployed. Science for policy is different from science as 'pure' research. Second, the political dimension of science in policy-making suggests the group-specific dimension introduced above. This means that in contracting for science, legislators are not only concerned about informational qualities, but also about who conveys this information. Sources of science for public policy are not ubiquitous, and science

therefore has a non-market character.⁷³

In policy-making then, legislators face the ‘make’ or ‘buy’ decision for scientific policy resources which implies an organizational choice. In Canada, the organizational response to resolving conflict over science-based policy decisions in the case of products such as rbST is governed by the *Food and Drugs Act* (Section C.08.002), which stipulates that a drug manufacturer must submit information and materials to support claims of efficacy and effectiveness to the body in charge of governing the *Act*. For rbST, the Bureau of Veterinary Drugs in the Health Protection Branch of Health Canada is responsible for the review. The drug company in question, Monsanto, must provide scientific information to demonstrate that their product is safe for animals, that milk and milk products from treated cows is safe for human consumption, and that all requirements for the safety of the manufacturing process have been met under the regulations set forth by the *Act*. Once the review has been completed and all requirements of the *Act* have been stipulated to, a Notice of Compliance (NOC) is given that can only be revoked by order of the Minister (Health Canada 1995).

Legislators, in this case led by the Minister of Health, ostensibly rely solely on the formal regulatory process to resolve conflict. In other words, the procurement of resources is governed hierarchically; Health Canada scientists are charged with the responsibility to review industry submissions, and base their decisions only on science.

⁷³ Scientists are not typically concerned about the political use and consequences of scientific information. As a result, the ‘science market’ – for instance that which might be found in the university setting – is viewed by legislators as being incomplete. As I argue below, however, circumstance may arise when legislators will be interested in scientific information that has no political dimension.

For the transaction cost theorist, this process is understood as one where legislators deem that public confidence is best guaranteed by hiring their own experts to determine the credibility of scientific information. Bureaucrats do not complete the basic research, but rather interpret the credibility of the results and the experimental methodology. Legislators hire officials to do this in order that they can convey public confidence in the informational qualities of science for political ends. It is the interest specific character of science-based policy resources that leads to this organizational response.⁷⁴

The rationale for 'making' scientific resources can also be uncovered by looking at the alternative arrangements that could be made – either 'buying' the scientific information directly from the drug company on the market, or engaging in an informal exchange of information for approval in the policy network. Either solution would require that the legislator him or herself is able to determine the credibility of the submission, and that drug companies are willing to divulge valuable information about their products. Both conditions are unlikely to be met: legislators are rarely scientific experts (and even if they were political questions about credibility would certainly still arise), and drug companies jealously guard product information from the market to protect research investments (arguing strenuously for long-term patent protection). As a result, legislators who have an interest in science-based policies hire experts to interpret

⁷⁴ Legislators institute a 'science bureau' in response to the interest specific character of the policy resource, with the implication being that contractual disturbances are more easily dealt with by authority than in a network or on the market. In addition, the repeated requirement for scientific policy resources likely leads to efficiencies of scale in the bureau.

information for them, and they write legislation that protects the confidentiality of drug company submissions to the regulatory process. The dual aspects of hiring bureaucrats to ‘make’ scientific information by reviewing industry and published data, coupled with writing legislation to define specific limitations on the acceptable range of that information (i.e., science only), indicates a formal contractual response to policy-making for products like rbST. Of course it is this formal contractual arrangement that is also seen to prevent the inclusion of extra-scientific concerns, such as socio-economics, into the policy-making arena.

The formal regulatory process and its hierarchical organization can be viewed as a legislative response to the costs of potentially making a “bad decision” in science-based fields. In other words, there is a strong desire on the part of legislators to avoid opportunism in the procurement of science-based policy resources. Take the rbST example as the case in point. The Minister of Health, whomever it is at the time that rbST is licensed in Canada, is clearly interested in ensuring that the regulatory decisions that are made with respect to health safety are the correct ones. The cost of making a bad decision, both in real safety and political terms, would be enormous.⁷⁵ From the Minister’s perspective, the important question then becomes “how do I make decisions of this nature? Do I rely on the information presented to me by drug companies? Or, do I hire a group of scientists who essentially make my experience with the drug for me?” Clearly, the result is that the regulatory system is designed such that the Minister

⁷⁵ One could imagine the fall-out if rbST became a “tainted milk scandal” in a manner anywhere similar to the recent “tainted blood scandal”.

effectively hires people to generate public scientific experience and information.

But what happens when *all* vote-productive resources cannot be secured in a formal science-based regulatory process organized by hierarchical governance? That is, how are important extra-scientific concerns dealt with in a manner that both guarantees adherence to science-based regulation to determine the “technical” viability of a product, while at the same time resolving conflicts about the extra-regulatory socio-economic impacts of a given technology like rbST? The answer lies in determining the manner and extent to which additional legitimate policy resources are procured.

5.3 The rbST Chronology

To contextualize the discussion of how extra-scientific actors have been able to influence the rbST issue in Canada, it is useful to begin by presenting a brief chronology of events.

Monsanto made its application to regulators at the Bureau of Veterinary Drugs in 1990 after a three year preparation period, during which time, officials at Monsanto worked with Health Canada regulators to establish the precise requirements that the submission would have to meet for successful review. Also in 1990, Health Canada officials confirmed the human safety of rbST as have several other groups since, including the Canadian Medical Association and the Canadian Paediatric Society (Senate of Canada 1998).

Under growing public scrutiny in Canada – due partly to the much publicized approval and subsequent sale of rbST in the United States beginning in February 1994 –

the Standing Committee on Agriculture and Agri-Food Canada heard representations from interested groups including the Dairy Farmers of Canada (DFC), National Dairy Council (NDC), Consumers' Association of Canada (CAC) and Monsanto, during early March 1994. The Standing Committee released its report in April 1994, and included a list of seven recommendations which touched on issues such as economics, animal welfare, consumer acceptance, and the nature and status of the regulatory process for biotechnology products (Speller 1994). Among these recommendations was a call for a one-year moratorium on the use of rbST in Canada during which time a government-industry rbST task force would be struck to further examine issues of concern regarding health safety issues, the potential impact for the Canadian dairy industry, and U.S. consumer reactions; the one-year moratorium was voluntarily accepted by Monsanto, and the rbST Task Force was established with representatives from Agriculture Canada, Industry Canada, Monsanto, Provel (the other drug company that had a submission under review in 1994), the DFC, the NDC and the CAC as members. The task force reported in May 1995 (rBST Task Force 1995).

Subsequently, Health Canada has continued its review of rbST. And with the exception of increased media coverage in response to the expiration of the voluntary moratorium in July 1995 (see Powell and Leiss 1997), this review had been relatively quiet. However, in late-May 1997 a *Globe and Mail* story reported that several Health Canada employees at the BVD had concerns about "persistent and repeat harassment by Health Canada management due to coercion to approve veterinary drugs of questionable safety", with the implication being that Monsanto's submission with respect to rbST was

not being adequately investigated (Eggertson 1997). The harassment complaints are being heard by the Public Service Staff Relations Board (Canadian Broadcasting Corporation 1998). However, in response to what Dr. George Paterson, Director General, Foods Directorate, Health Canada, has termed “allegations that our internal review process is flawed; that is has not, shall I say, been democratic”, an internal review panel was struck to address the concerns (Senate of Canada 1998: 24). In addition, Health Canada has created two external review panels to investigate the human health safety and animal health safety of rbST, stating that “it is essential that public confidence in the safety of the milk supply be assured at all times. In cases where scientists within the Health Department lack consensus on matters of drug safety and where there is substantial controversy in the international scientific community about the safety and efficacy of a veterinary drug, then, the creation of external expert advisory committees to provide independent advice to Health Canada is appropriate” (Health Canada 1998). The panels are expected to submit their reports in the late fall of 1998.

Finally, the Standing Senate Committee on Agriculture and Forestry has recently held meetings similar to those held by the Standing Committee on Agriculture and Agri-Food Canada in order to address where the rbST review is in terms of proximity to a potential offer of a Notice of Compliance, and the extent to which all safety concerns have been dealt with. It is acknowledged that several senators have been pushing for a further moratorium on rbST use in order that all concerns that Canadians might have are properly addressed (Eggertson 1998).

As I have already intimated, the key to understanding the chronology of events

regarding the review of rbST in Canada requires that one understand the effect that all interested groups have had on the review process, particularly through their ability to mobilize policy resources outside the formal regulatory process. Doing so essentially answers the important question raised by Powell and Leiss (1997) as to why rbST is apparently “lost in regulatory space”.

5.4 The rbST Actors

The central question for policymakers in the rbST case is the extent to which groups other than Monsanto are allowed to affect the course of the regulatory process. Put another way, the fundamental concern of decision-makers is to avoid making a “bad decision”. As a result, they must carefully gauge both the nature of the required resources and the identity of the groups who have access to them. A brief outline of the positions of the key actors is important to analyze what it is about their organizational character and the nature of their resources that affords them an opportunity to enter the rbST process: Monsanto (industry); Dairy Farmers of Canada (producers); National Dairy Council (processors); Consumers’ Association of Canada (consumers); and the Council of Canadians (activists).⁷⁶

⁷⁶ Note: Other groups than the ones reviewed below have had a role in the rbST debate at one time or another including the Canadian Animal Health Institute, the Consumers Policy Institute, and the Federation nationale des associations de consommateurs du Quebec. However, it is understood by the key rbST actors that those presented herein are the only ones who have had an effect on changing the government’s policy response.

5.4.1 Monsanto

The Monsanto Company is currently the only drug manufacturer with an rbST product before Health Canada.⁷⁷ Since their submission to the Bureau of Veterinary Drugs in 1990, Monsanto's position has been consistent: the product should be approved based on the scientific evidence that rbST is effective, efficacious and poses no health safety risks for animals or humans. In addition, Monsanto has been strongly supportive of the science-based regulatory process and has argued strenuously that it is the only legitimate process by which products like rbST can credibly be judged. As Ray Mowling, Vice President, Government and Public Affairs, Monsanto, has stated:

(T)he science-based regulatory process must be allowed to continue until it reaches a science-based conclusion. Sound, extensive, in-depth research into the safety and efficacies of BST must be the basis for the decisions to be made by Canadian reviewers in deciding whether they will approve BST for sale and use in Canada. Should the product be registered, farmers and veterinarians can clearly voice their thoughts by either buying it or not. If there is no demand, the product will not be used. Any other approach may set an unacceptable precedent, implying that approval of human or animal products is not based on scientific findings (Senate of Canada 1998: 6).

The rationale for Monsanto's position is clear. First, they have a marketable product that they would like to sell for economic gain. Second, and perhaps more importantly, Monsanto has a vested interest in maintaining the current regulatory process whereby their products are judged only on scientific criteria. Not only do they have significant experience with the science-based system and design their in-house development of new products accordingly, departures from science would effectively

⁷⁷ Note: The Provel division of Eli Lilly also had an rbST product before the review process but withdrew it in 1996 due to patent difficulties in the United States.

raise the cost of getting products approved by introducing a non-scientific “fourth hurdle” to the regulatory process.

This “fourth hurdle” is understood by industry officials to be associated with the inherent economic, political and social “need” for products like rbST. And even though Monsanto has engaged in disseminating information about the potential benefit to the dairy sector that introducing rbST would have, they disregard notions put forth by other actors – most notably consumer advocates and dairy processors – that socio-economic concerns are equally important as criteria by which rbST should be judged. Monsanto’s bottom-line is that they are interested in creating a market for their product, and the most efficient way of doing this is to ensure that the regulatory status quo is maintained.

This is not to say, however, that Monsanto is ignorant of consumer concerns about rbST. In fact, they have considerable experience with the important impact that scientific post-approval monitoring programs (PAMP) can play in alleviating consumer concerns about the continued safety of rbST. In Canada, Monsanto has offered to institute a similar voluntary PAMP as they have in the United States and to engage in consumer education about the health safety of milk and milk products from rbST-treated cows. After all, an approved product that nobody buys is as useful as a product that has not been approved. Monsanto does stress, however, that the ultimate worth of the product, given that it passes the formal regulatory tests for human and animal health safety, should be determined on the market.

Monsanto thus enters the decision-making process with clearly defined interests about rbST and the regulatory process. The strength of their position rests on an ability to

credibly maintain a purely science-based approach to the submission of their product for review before the Bureau of Veterinary Drugs, and engaging in the dissemination of what they understand to be the scientific facts about rbST while at the same time rebuking the criticisms of other groups – both scientific and otherwise.

5.4.2 Dairy Farmers of Canada

The Dairy Farmers of Canada (DFC) hold a more neutral position on rbST. In particular, the DFC supports the notion that individual farmers will ultimately be responsible for determining whether rbST is a suitable herd management tool, and understand that some farmers would like access to cost saving technologies. At the same time, however, the DFC is also concerned about the impact that rbST could have on consumer demand for milk and has a stake in ensuring that the product is approved only after sufficient scientific review. Their policy position reflects this attention to science-based regulation of rbST, but argues that Health Canada's credibility to complete the review is in question. In a recent press release the DFC's position was clearly stated: "DFC is neither for nor against rbST. At this time, we simply want to ensure that rbST is approved for use *only* after the current credibility issue surrounding Health Canada's approval process is fully addressed" (DFC 1997).

The Dairy Farmers of Canada are seeking a delay in the licensing of rbST in Canada until such time that an independent audit of the Health Canada process can be performed by the Auditor General, that the United Nations Codex Alimentarius

Commission rules on the safety of rbST,⁷⁸ and that Health Canada publicly informs consumers about the risk assessment process and rationale it will use in the evaluation and approval of rbST (DFC 1998). The DFC's position is based on their concern for maintaining consumer trust in the Canadian dairy industry. As Barron Blois, President of the DFC suggested, "Canadians know that milk and dairy products they consume every day are pure, safe and nutritious. Canadian dairy farmers have built a relationship of trust with the Canadian consumer that they do not wish to see jeopardized" (DFC 1997).

There is a strong link between the livelihood of dairy farmers and consumer confidence and demand – a link that the DFC does not want weakened. As a result, the DFC, like Monsanto, has a stake in the credibility of the regulatory process. Ensuring a credible science-based decision is vital to the interest of farmers who rely heavily on the perception of complete safety in the milk industry. Credibility, from the DFC's position, therefore requires not only "good science", but a publicly transparent policy-making process.

The strength of the DFC's position as a legitimate voice in the rbST debate rests on two important factors. First, rbST will be used by dairy farmers if it is licensed. It only stands to reason that if political actors are interested in assessing the potential impact that rbST might have on the dairy producing sector in Canada, that the DFC would be the group approached for such information. Second, and perhaps even more importantly

⁷⁸ The Codex Alimentarius Commission is likely to rule favourably on the safety of rbST. A sister organization, the *Joint Food and Agriculture Organization of the United Nations and the World Health Organization Expert Committee on Food Additives*, recently concluded that rbST was safe for both human and animal health (JECFA 1998).

from the policy analysis perspective, the DFC has the ability to affect the positioning of the rbST debate at the political level. As the national group representing some 25,000 dairy farmers in Canada, the DFC is in a credible position to threaten legislators with political protest should their views go unaccounted for – a threat that has been carried through in the past. In fact, as is shown below, it is this consideration that can be seen to have facilitated their place as a legitimate influence over the informal aspects of the rbST case.

5.4.3 National Dairy Council of Canada

The National Dairy Council (NDC) has consistently been opposed to the use of rbST in Canada. As the representative of the dairy producing industry, the NDC views the introduction of rbST as a significant threat to milk and milk product sales due to consumer concerns about health safety and the effect that changed perceptions about the natural production of milk might have on consumer demand. The NDC holds the view that there is no visible benefit for the processing industry or for consumers to the use of rbST in Canada, and is worried that their processors will be held responsible for decisions that alter the manner in which milk is produced at the farm level. The NDC is steadfast in its position that rbST approval would be without the agreement of the dairy processing industry (NDC 1998).

The NDC's position is based on the potential effect that changes in consumer demand would have on the costs of milk processing. It is thought that consumers would demand a choice between milk from rbST-treated cows and untreated cows, which would

de facto require the creation of a segregated processing capacity to match the emergence of a dual market for milk. The NDC's concern is that it will have to bear the costs of the creation of new processing techniques that would rely on "auditing procedures to ensure product integrity and both farmer and processor compliance with product segregation requirements" (NDC 1998). One of the reasons for this view is the simple fact that rbST labeling is such a difficult technical issue.

In principle, the NDC is opposed to the regulatory process that stipulates the Minister of Health is required to issue a Notice of Compliance for rbST if the product meets the requirements of the *Food and Drugs Act*, without recourse to a legal ability to respond to consumer concerns. This is not to say that the NDC is opposed to science-based review of health safety, but rather that science is the only measure of a product's viability for introduction to the market. Their policy response has been to appeal for protection from bearing what they expect to be increased processing costs as a result of consumer demand for two "types" of milk. In particular, the NDC has requested that the milk marketing boards and milk control agencies make available a choice of milks, both from rbST-treated cows and those not treated, to ensure that processors can request at no additional cost that segregated milk is delivered along with appropriate guarantees and government approved audits (NDC 1998).⁷⁹

The NDC enters the policy arena armed with two similar tools to the DFC's that make their position credible: they are the national voice for the dairy processing industry,

⁷⁹ Essentially, the dairy processing industry is concerned that it will be unable to fully shift the cost of two milk supplies on to consumers.

and they have a history of being able to influence politicians' view of the political landscape. In real terms, it is these organizational characteristics that have allowed them a place at the rbST table. However, as shown below, the NDC has found itself in a "middle" position with respect to farmers and consumers regarding rbST and, as such, their influence over the informal side of the rbST debate has been accordingly limited.

5.4.4 Consumers' Association of Canada

The Consumers' Association of Canada (CAC) views the possible introduction of rbST to the Canadian marketplace primarily as a consumer issue. As the only national group representing Canadian consumer rights, the CAC's interest lies in the regulation of rbST such that human safety is secured, product quality, value and choice is preserved, and that the consumer is represented in the decision-making process (CAC 1994). The CAC's vision of the federal government's role in the regulatory process is not only to ensure that information about health safety is communicated fully, but that the composition and nutritional value of milk and milk products is not compromised, and that guarantees against increased milk prices are established.

From the CAC's perspective, there is a dichotomous relationship between the safety of a product like rbST and consumers' acceptance of such products in the marketplace: safety and acceptability are not equivalent. The major issue then, is the extent to which consumers will be able to distinguish between milk and milk products from rbST-treated and untreated cows. The call is for the creation of a second market for milk in Canada if rbST is approved for use in the dairy industry, either through labeling,

or through an affidavit system. In a position that is similar to that of the National Dairy Council, the CAC views this second market as the only means by which consumers will have the freedom to demonstrate their demand for alternative products in the marketplace. With no direct or visible link between rbST use at the farm level and consumer benefit at the market level, the CAC is worried that rbST use in Canada will place an unnecessary restriction on consumer choice.

The rationale for this standpoint rests on the CAC's position as representative of consumer concerns in the broader policy-making process. The CAC itself has no direct interest in the regulation of rbST in the same way that Monsanto, the Dairy Farmers of Canada and the National Dairy Council do; rather, their interest lies in protecting the credibility with which they can represent the voice of consumers in public decision-making. Fundamentally, the CAC views itself as a protector of the Canadian consumer market. When issues such as rbST pose potential threats to the freedom of choice, the CAC positions itself to argue for the maintenance of markets, without necessarily taking a stand on the product itself. Indeed, for the rbST case, the CAC has maintained that as long as the health safety of Canadians is not jeopardized, the central concern for consumers is the right to market choice. And yet even given the absence of a direct interest in the rbST case, the CAC is viewed as a credible player for similar reasons that the DFC and NDC are: they have a history of being able to affect the politics of consumer issues.

5.4.5 Council of Canadians

The Council of Canadians (COC) is the final group that can be seen to have had an impact on the issues surrounding the regulation of rbST in Canada, although as argued below, this impact is indirect. Still, the COC has played a significant role in couching the rbST debate in much broader terms about the legitimacy of introducing biotechnology to the Canadian food industry and its position deserves some attention.

The COC takes what can only be described as a very negative view of the possible introduction to rbST in Canada. To some extent, this view rests on the perception that consumers reject biotechnology for religious or ethical reasons, and that regulatory agencies disregard such concerns in the policy-making process. Perhaps more fundamentally though, the COC is opposed to the appearance that regulatory processes favour “transnational drug companies who want to push recombinant bovine growth hormone onto Canadians”, and that such a “push” will have negative implications for the health of Canadians (COC 1998). In addition, the Council is concerned that current decision-making represents a step in the erosion of citizens’ trust in democracy (COC 1998a). As an activist group, the COC’s rationale for its position is to “keep big business out of Canadian milk” (COC 1998), and to protect democratic rights for an accessible regulatory process. And while their role vis-a-vis any direct influence on the regulation of rbST is questionable, they have arguably been successful in raising some consumer concerns that can be seen to have had a secondary effect as mediated through other groups such as the DFC, NDC and CAC.

5.5 The Controversy, the Actors and the Response: The Result of Procuring Additional Policy Resources in the rbST Complex Network

The groups introduced above have all been able to affect the regulatory process by appealing to legislators on the basis that their voices are important to the broader issue of whether rbST is expected to be a valuable addition to the Canadian dairy industry. This appeal, in turn, has been predicated on two important and fundamental aspects of informal contracting in policy-making: the groups have productive resources from a political perspective, and each has the ability to credibly engage in exchange. It is by demonstrating to legislators the legitimacy of group positions, coupled with the credible commitment to affect the legislators' bottom-line – votes – that the groups in question have been afforded the opportunity to affect the policy choices about rbST that have been made.

As for the science-based rbST policy resources, the socio-economic resources of the pertinent groups are interest specific. It is only as a result of experience with their constituents' interests that the DFC, NDC and CAC are able to demonstrate the importance of their inclusion in the policy process; there is no market for the views and experience of dairy producers, dairy processors and consumer advocates. Such experience, in turn, is not easily redeployed to an alternative use (for example, the dairy farmer's experience with dairy farming is not equivalent to the dairy processor's experience with dairy processing). As a result, when legislators find it necessary to incorporate group-specific resources in policy-making, their only viable recourse is to deal directly with the groups.

The effect of dealing with the interest specific resources of the DFC, NDC and CAC can be seen as an organizational one: the contracts for experience are informal and must therefore be governed in the policy network.⁸⁰ The implication is that appropriate mechanisms to guarantee the network exchange must be designed to secure gains-from-trade. In fact, I argue below that a complex policy network emerged when the Minister of Health deemed it necessary to procure socio-economic resources in an informal exchange, the result of which can be seen in the response to regulating rbST in Canada.

The federal government's response to the rbST issue can be broken down into three time-frames: the early 1990-1993 stage, the 1994-1997 stage, and the post-1997 period. What is interesting about such a classification is that it matches the corresponding changes in organizational response.

5.5.1 1990-1993: The Regulatory Status Quo

The early stages of the rbST regulatory process can be viewed very much in terms of maintaining the status quo. Upon the submission of Monsanto's product for review by the Bureau of Veterinary Drugs (and Provel's submission earlier), the formal regulatory system established by the *Food and Drugs Act* took over. As a result, the public debate about rbST was very limited, and Health Canada firmly believed that a standard science-based review of the safety and efficacy of the submission would be sufficient grounds on which to make the "correct" rbST decision.

⁸⁰ Note: I simply assert that 'making' experience with dairy farming, dairy processing and consumer advocacy is not an expected vote maximizing strategy for legislators.

In late 1993 however, the nature of the debate over rbST changed. Largely in response to anti-rbST campaigns being waged in the United States and the subsequent approval of rbST in the US in November of 1993, the coverage of rbST in Canada not only increased, it became increasingly negative. The result was the beginning of what Powell and Leiss (1997) have characterized as a significant “risk information vacuum”. This vacuum effectively opened up an opportunity for actors such as the Dairy Farmers of Canada, the Consumers’ Association of Canada and the National Dairy Council to enter into the debate over rbST. Health Canada’s response to questions about the legitimacy of regulating rbST solely based on science has always been to rely only on the formal rules, and their public statements have reflected this position (House of Commons 1994; Senate of Canada 1998). However, the nature of the evidence suggests otherwise – namely that informal extra-regulatory concerns can be seen to have had an effect on the formal process in the period after late 1993.

5.5.2 1994-1997: Initial Stages of Informal Influence

The increasingly controversial nature of public debate on rbST was met with a response from the Standing Committee on Agriculture and Agri-Food, which held hearings in March of 1994 to address group concerns about the potential impact of rbST on the Canadian dairy industry. Subsequent to this set of meetings and those of the associated rbST Task Force, the one-year voluntary moratorium was instituted. And even though the moratorium expired in the summer of 1995, rbST had still not been approved by 1997.

The important thing about the 1994-97 period is that it represented the birth of an informal process with no legal bearing on the Health Canada decision, that was able to affect a delay in the regulation of rbST. As already intimated, this delay was the result of *informal* influence over the Health Canada system. In fact, senior Health Canada officials acknowledge that the political debate stimulated by the rbST Task Force had a “slow-down” effect on the regulatory process with regulators “not being in a hurry” to license rbST. Moreover, the “slow-down” of the regulatory process is a result of legislators who were able to voice political opposition to rbST on the grounds that they were representing voters. As one Standing Committee member suggested, “we do live in a democracy...and my farmers unanimously voted against – and wanted me to vote against – the use of rbST, so I stand here democratically representing my constituents” (House of Commons 1994: 37).

In reality, the events of 1994-97 made legislators realize that strictly scientific resources were insufficient to make a decision on rbST. Policy resources that were based on socio-economic concerns were also important, not because they had a bearing on the issue of safety of rbST, but because they had a bearing on the political cost of making the decision. And even though the formal regulatory process did not change, there is evidence to support the conclusion that informal influence was beginning to be brought to bear on the regulation of rbST.

5.5.3 Post-1997: The Emergence of the rbST Complex Policy Network

The rbST policy network emerged as a result of efforts on the part of the key

players to have their interests accounted for. From the groups' perspective, the network is seen as the only mechanism available to them by which they can influence the rbST outcome, and they enter with a desire to have their individual interests guaranteed. From the political perspective, the network is seen as the mechanism by which extra-regulatory policy resources can be procured. The exchange then, is predicated on the belief that gains-from-trade can be secured such that each actor is in a better position vis-à-vis their individual wants after the exchange than before it. Indeed, this is the central role of policy networks in policy-making.

The rbST policy network membership consists of the Dairy Farmers of Canada, the National Dairy Council of Canada, the Consumers' Association of Canada, and the office of the Minister of Health.⁸¹ In addition, the Council of Canadians is viewed to be a secondary actor; that is, while it is not engaged in exchange as a member of the network itself, it has had an influence over the positions taken by the central participants. The key to uncovering the role that the rbST network has played is to look at *what* is being exchanged, at *how* the exchange has been organized, and at the *effect* that network exchange has had on the rbST decision-making process.

It is difficult to pin-point the exact time at which the rbST network emerged, however the groups indicate that it was during the summer of 1997 when the reports of

⁸¹ Note: I treat the office of the Minister of Health as the conduit of informal exchange in the policy network. The reason for this is based on information gathered through interviews with the associated groups who each indicated to me that while they are ultimately interested in affecting the Minister's position on rbST, the Minister's schedule is such that the vast majority of contact is actually with the office and not the Minister per se. Still, the groups were certain that ministerial staff members were able to credibly represent the views of the Minister to them, while at the same time credibly representing their views to the Minister.

internal difficulties at Health Canada were disclosed in the media that they began to detect from the Minister's office that their concerns about guaranteeing the safety of rbST were receiving attention. In a sense, conditions changed in the decision-making environment and opened up a new opportunity for groups to approach Health Canada. Whereas previous attempts to sway the policy process had been limited to participation in the rbST Task Force governed by Agriculture Canada, new public challenges about the legitimacy of the Health Canada review process afforded groups with a stronger position on which to approach the Minister.

The media reports questioning the credibility of the drug review process at Health Canada fundamentally changed the political position of the Minister with regards to the rbST issue. With Health Canada legally bound by the *Food and Drugs Act* to offer a Notice of Compliance after a successful science-based review, the Minister had previously had only one legitimate source for policy resources, i.e., the Bureau of Veterinary Drugs. However, with claims that the Bureau was no longer credible, an opportunity presented itself for groups to approach the Minister armed with new public concerns about Health Canada's position as a neutral regulator for rbST. From the Minister's perspective, new policy resources were required to make a credible decision about rbST. Circumstances therefore emerged whereby the DFC, the NDC and the CAC had a stronger bargaining position with respect to getting Health Canada to effectively change the licensing process for rbST in Canada. Essentially, concerns about the internal review process presented the groups with the necessary ammunition to attack the rbST issue on science-based terms, and additionally on socio-economic concerns.

The requirement for new policy resources can be seen as a response to what amounted to a contractual breakdown in the formal regulatory process. The public disclosure by a few Health Canada scientists of their concerns with the review process and the safety of rbST, was regarded by senior Health Canada management as a problem of opportunistic behaviour in the principal-agent relationship – the response to which can be seen in three regards.

First, the creation of internal review panels in Health Canada can be viewed as an attempt to use authoritative mechanisms to quell public concern about the review process. However, continuing public disclosure of difficulties at Health Canada in the media suggest that internal mechanisms alone have been insufficient to (re-)establish the credibility of the regulatory process (see Bueckert 1998).

Second, the establishment of external review panels governed by the Canadian Veterinary Medical Association (CVMA) and the College of Physicians and Surgeons (CPS) can be seen as an appeal to market mechanisms to procure more science-based resources to dispel public concern. Essentially, Health Canada has contracted further scientific review on animal and human health safety from independent sources. The panels are made up of research scientists who have no connection to Health Canada, and the review is governed entirely by the CVMA and the CPS (Health Canada 1998). Additional scientific resources are being procured from sources that are not under authoritative control, precisely because their political and policy independence is viewed as being valuable.

Finally, the public disclosure of internal problems at Health Canada has once

again stimulated considerable debate about the socio-economic ‘need’ for rbST in Canada. In the CAC’s words, “safety does not equal acceptability”. Exogenous conditions have changed such that in order to arrive at an expected vote maximizing decision, extra-scientific resources are required. It is this necessity that has opened up the opportunity for the Dairy Farmers, the Dairy Council and the Consumers’ Association to affect the policy process.

The groups have approached the new decision-making environment with two important tools: the ability to credibly represent their constituents’ views about rbST, and the ability to credibly threaten the government’s political position if group concerns were or are not addressed. Fundamentally, these tools are a function of group organizational capabilities and deserve further elaboration.

When a group approaches a legislator with a concern about a given policy issue, they do so successfully only if they can both demonstrate the legitimacy of their information, and support this demonstration by their behaviour.⁸² In the rbST case, each of the groups’s organizational characteristics facilitate such a demonstration – each is a national organization with a history of representing their constituents in the policy-making process (i.e., if you want to know what dairy farmers are thinking you talk to the Dairy Farmers of Canada). Even more importantly, each of the groups also has a history of being able to enforce their positions, most notably by appealing to public protest either directly (e.g., marching on Parliament Hill or engaging in public education campaigns),

⁸² The reader will recall that Propositions 3.2 3.3 and 3.6 discuss the importance of collective action and commitment in informal exchange.

or through disclosures to the media. Effectively, it is the combination of a group's information credibility coupled its ability to strategically enforce its position to politicians that allows it to potentially affect policy-making.⁸³

The dynamic of the rbST network pits credible national organizations – the DFC, NDC and CAC – both against each other and against the office of the Minister of Health. Fundamentally, the Minister wants to procure information on the potential effect of rbST introduction to the Canadian marketplace, while at the same time avoiding group protest. The groups on the other hand, want to ensure complete credibility in scientific information, and a delay in the regulatory process. An opportunity for exchange existed with interesting results.

First, none of the groups have yet been able to secure a policy response that can be viewed to correspond directly to their desired position. In large part, this is due to restrictions placed on the Minister with respect to affecting fundamental changes to the drug review process that would allow for socio-economic variables to influence decision-making. For instance, the NDC's opposition to rbST based on economic concerns has not had a direct effect on the Health Canada position. What has been effectively achieved in the network, however, is an implicit 'bottom-line' for an independent assessment of the BVD's regulatory review to ensure the full public disclosure of the scientifically determined safety of rbST. In fact, Health Canada officials understand that interest group pressure at the political level was one of the major reasons for the creation of the external

⁸³ As Réjean Bouchard of the Dairy Farmers of Canada put it: "Our organization represents the views of 25,000 dairy farmers in Canada – all of whom vote" (Personal interview, August 14, 1998).

review panels.⁸⁴ Essentially, network actors have been able to secure this response by establishing that their membership will accept nothing less than a full safety guarantee for rbST, and that they were willing to publicly enforce their position(s). It is important to note, however, that the Minister's legal position regarding the formal regulatory process can be seen as an exogenous condition that prevents a complete exchange from the group perspective.

The second interesting aspect of the Health Canada response to the network is the extent to which it is understood by the groups and some government officials that socio-economic factors have played an important role in the continuing review of rbST. It is clearly apparent to all those concerned – particularly at the Ministerial level – that the rbST issue is politically charged. The catch, of course, is that the politics of rbST do not “jive” with the regulatory process, and in fact contrast significantly with the currently available scientific information. Still, the extra-scientific concerns that are raised by the political aspects of rbST do appear to have had an effect on the length of time of the review, and Health Canada officials concede that one of the central reasons for this has been the continuing (and successful) call for delays by the DFC, NDC and CAC.

Here, the Council of Canadians' position has also been seen to play a role in creating a significant public confidence issue that is based primarily on the “quantity” of the response in terms of letters to members of parliament, rather than the “quality” of the response. And while none of the network actors acknowledge that the Council's position

⁸⁴ An employee of the Bureau of Veterinary Drugs suggested that the Bureau is “not ignorant” of the fact that interest group pressure at the political level “certainly had a hand in” the decision to establish the review panels (Personal interview, August 18, 1998).

is based on any legitimate claim for inclusion in the decision-making process, they all acknowledge that its “scare tactics” have certainly played a role in determining the extent to which the public views rbST as a “technical” versus an “emotional” issue. They can be viewed as part of what Paul Pross would call the “attentive public” (Pross 1991). Furthermore, each of the network members appealed to the COC’s stance as a means to demonstrate that Canadians are truly concerned about rbST. As a result, it is important to consider that an indirect input from the COC does appear to have played at least a secondary role in affecting the rbST network.

Finally, the rbST network must be seen in terms that the office of the Minister of Health finds favourable. Here, an implicit understanding has been established between all actors concerned that once or if the unequivocal safety of rbST is established, groups will not engage in public enforcement of opposition positions, or, in other words, opportunistic behaviour. There is an understanding that the groups will not renege on the transfer of the agreed upon policy resources – namely their views on the potential introduction of rbST in Canada . Vital to securing this agreement has been the notion that the groups themselves will be responsible for engaging in positive public education – for example risk communication – and will do so in such a manner that allows them to monitor and enforce each other’s position. Essentially, the crux of the agreement rests on the fact that each group, regardless of the fact that they have different ideal solutions to the rbST issue, has a vested interest in establishing the safety of rbST. As a result, if or when that safety is established, a group who still publicly protests will have their own credibility questioned and punished by the other groups public action. The other groups

are willing to engage in such enforcement precisely because *not* doing so, could damage their own interests.

This last point is key because it goes to the heart of the *complex* form of the rbST network. A network structure was feasible due to two important factors. First, all of the actors involved entered the process knowing that they were regarded as being credible, honest policy groups. Furthermore, each of the groups makes investments in their individual reputation and are careful not to tarnish it by engaging in opportunistic behaviour unless the benefit of doing so far outweighs the cost.⁸⁵ In addition, it is as a result of good reputations and a history of trustworthy behaviour that the groups were able to overcome *ex ante* commitment problems easily and at low cost i.e., they were regarded as being trustworthy from the outset.⁸⁶

Second, and perhaps even more importantly, reputation alone was insufficient to organize the rbST network – a fact that is regarded by the groups as being true in other policy cases as well. Here, the groups view the Minister of Health as wanting to establish a situation where the groups themselves will monitor each other. Transfers of what can

⁸⁵ Réjean Bouchard of the DFC told me that they use the threat of protest as a tool to facilitate easy exchange. However, when it comes to actually protesting, the decision is made only after a careful analysis of the costs and benefits to DFC members of doing so because the DFC's reputation is a valuable commodity. A rational group response to informal relationships was acknowledged. In fact, because of the costly nature of trying to influence policy, the DFC only enters the policy arena after deciding that there is an expectation that doing so will lead to a positive net outcome. (Personal interview, August 14, 1998).

⁸⁶ Chris Mitchler of the CAC stated: "Policy-makers like us because we have a good reputation and a long history of acting responsibly as consumer advocates. We are mainly a voluntary organization and our reputation is one of the keys that gets us in the door and allows us to be a player in the policy process. We go to substantial lengths to protect this reputation. Of course another key is that you cannot make idle threats. If people abuse our position, we have to back it up." (Personal interview, August 24, 1998).

be viewed as private enforcement capital therefore occur at two levels.

Group-Minister transfers are regarded as being threats of certain patterns of behaviour in the event of contractual non-performance. Essentially, the legislator transfers a promise of a certain policy response in return for the required information. The penalty that can be imposed on groups is some different policy, potentially a damaging one; the penalty that can be imposed on the legislator is damaging protest, but damaging protest of a specific kind. The legislator's agreement to listen to the groups in policy-making, effectively gives groups more leverage in protest i.e., the groups have a *specific* point of reference that they can use.⁸⁷ In the case of rbST, the transfer is the promise to establish an independent assessment of scientific safety, coupled with an implicit understanding that socio-economics concerns need to be addressed (although none of the actors quite know how this will play out).

Group-Group transfers of private enforcement capital are also established at the bequest of the Minister. Both for rbST, and for other cases in general, the groups indicate that policy-makers are interested in getting the groups to do as much monitoring of each other's behaviour as possible. They suggest that the reason for this is because it decreases the time that public officials will have to spend monitoring i.e., it lowers governance cost. In fact, as Timothy Finkle of the NDC and Réjean Bouchard of the DFC suggest, they have a long history of monitoring each other's position. The result is

⁸⁷ One can imagine that from the legislator's position a group who protests seemingly on the basis of a general concern or just for the sake of protesting (e.g., the COC), is different from a group who protests with specific knowledge of some type of promised behaviour. When the legislator promises a particular policy action, the promise can be used to develop 'better' protest, and can be viewed as a form of private enforcement capital.

that there is an implicit transfer of private enforcement capital between the groups that can be viewed both in reputational terms and policy ones. If any one group engages in opportunistic behaviour, other groups will expose this behaviour to the legislator at reputational cost to the offending group. In addition, it is understood that opportunistic behaviour might result in what would amount to a redistribution of rent in the form of a new policy prescription that would exclude the offending party's position.⁸⁸ And while there have yet to be examples in the rbST case where private enforcement tools have been used, it is the threat of their use that facilitates exchange.

The distribution of rent as measured by the rbST policy response also corresponds to what can be expected from a complex network form. As indicated above, none of the groups were able to guarantee their own specific interests. Instead, the policy response can be viewed as one that represents a combination of their interests: establishing a full safety guarantee for rbST, coupled with the implicit understanding that socio-economics are important and need to be considered further. Overall then, the complex rbST network can be seen to have emerged as an effort on the part of the Minister of Health to secure further policy resources that could not be 'made' in the formal regulatory process through the use of private enforcement mechanisms to govern the exchange.

⁸⁸ For example, the NDC and DFC have a long history of monitoring each other mainly because they are often involved in the same policy issues (i.e., the dairy sector). The result of this monitoring is that each knows the "other is watching", and as a result, if they behave opportunistically they effectively do so against both the legislator and the other group(s). The prompting of group-group transfers in private enforcement capital by the legislator raises the cost of opportunistic behaviour, effectively decreasing its probability. As Tim Finkle of the NDC implied, groups are very careful not to renege on bargains too often because the costs associated with doing so are high, and have consequences for future possible trades. (Personal interview, August 27, 1998).

5.6 Conclusion: Implications of the rbST Case for Transaction Cost Theory and Biotechnology Regulation

The rbST case has implications for the broader transaction cost study of policy-making. This is seen in two important ways. First, transaction cost theory predicts that alternative mechanisms for the procurement of valuable policy resources will be seen in the public sector, and that the choice between mechanisms is based on the different costs associated with the appropriation of interest specific resources. The rbST case shows evidence of this prediction: the procurement of public scientific information is governed by hierarchy (i.e., the Bureau of Veterinary Drugs); the procurement of private scientific information has a market-like governance structure that was instituted when it became apparent that the BVD's science was potentially corrupt; and the procurement of informal policy resources such as experience with the dairy industry – namely interest specific resources – was governed by the complex policy network.

Second, the interviews that I conducted with the network members indicated strong appeal to the tenets of the policy network theory introduced in previous chapters. In particular, the nature of informal exchange is affected by transfers of private enforcement capital through mutual monitoring. Now, obviously none of the actors spoke in these terms, but each was aware that legislators (either the office of the Minister of Health in this case or others more generally) have an interest in getting groups to monitor each other's behaviour. Furthermore, group reputation and the ability to demonstrate an historical pattern of credible commitment is a key to successful inclusion in the policy process (which the CAC views as the main reason why the Council of

Canadians is unable to effect any legitimate policy influence – they have a reputation for opportunistic behaviour). In addition, it was understood by all groups that their position at the policy network table was, at the bottom-line, a function of their ability to affect the electoral position of the government actors. This was seen both in terms of the ability to behave opportunistically, and a function of the fact that group resources are interest specific, and cannot be easily procured elsewhere if at all.

Overall then, the rbST case illustrates further how transaction cost theory illuminates the essence of public policy-making. By looking at the rationale for actor positions, the strategies they employ and the design of alternative governance mechanisms for the procurement of policy resources, the study of policy-making is made more clear. Indeed, it can be argued that in order to better understand policy-making in the real world, a focus on the organization of contractual relationships – both formal and informal – is required.

Finally, the rbST network must be viewed in the broader context of what it indicates about the possible future of the science-based regulatory process in Canada. The case-study reveals that extra-regulatory concerns can, and perhaps should, have a legitimate place in regulatory policy-making. The argument here boils down to the analysis of the entire range of policy resources – both scientific and non-scientific – that are required to make publicly acceptable decisions about technologies such as rbST. It would appear that under conditions of uncertainty about the introduction of controversial products to the Canadian marketplace, that disembodied science alone is insufficient as a

basis on which to make decisions.⁸⁹

In organizational terms, this is really an argument that current formal regulatory processes are incomplete. What is required then, is an appeal to all of the necessary and legitimate policy resources that go into making an acceptable decision. While science is clearly the best criteria by which to judge human and animal health safety, health safety is apparently not the only criterion that determines product viability. Socio-economic concerns also appear to play an important role, as witnessed by the evidence of informal influence over the formal regulation of rbST. This conclusion would seem to suggest that the key question is not so much whether rbST is “lost in regulatory space” as Powell and Leiss (1997) imply, but rather what the definition of the “regulatory space” entails for public decision-making.

The current climate for regulatory review of biotechnological products has appeared to pit science *against* socio-economics. One of the results of this has been the inability of the formal regulatory process to resolve public conflict over issues that arise when controversial products such as rbST appear for review. By focusing specifically on the rbST case, I have examined why this is, and what the organizational response has been, showing that an opportunity for informal influence emerged in response to an apparent void in the formal system. The key question for the future is whether this informal response itself is sufficient as a means to resolve the rbST conflict specifically,

⁸⁹ At a recent conference on *Science, Government and Global Markets: The State of Canada's Science-Based Regulatory Institutions* held in Ottawa, October 1-2, 1998, Professor Albert Teich of the American Association for the Advancement of Science even went so far as to suggest that science alone will *never* be able to resolve policy conflicts where socio-economic concerns are viewed as being legitimate.

and controversy over biotechnology more generally.

It must be remembered that legislators view decisions about products like rbST in political terms. As such, they have a vested interest in the design of credible mechanisms through which they can procure required policy resources in a manner that guarantees their own ends, while at the same time ensuring public confidence. Informal mechanisms are therefore likely to be formalized in an effort to establish public transparency and credibility in decision-making.

The release of the new federal *Canadian Biotechnology Strategy* appears to be a response to precisely this concern by integrating social, ethical, health, economic, environmental and regulatory considerations; addressing public information and participation; establishing a balanced, broad-based advisory committee; providing the context for strengthening the business, regulatory and investment climate; and improving the government's ability to manage horizontal issues (Industry Canada 1998). And while it is impossible to conclude that the rbST controversy is directly responsible for the design of the new *Strategy*, it is reasonable to suggest that it had a key role in the government's desire to ensure that biotechnology regulation will guarantee that "social and ethical considerations are fully addressed" (Industry Canada 1998). Indeed, the legacy of rbST may well be that it initiated what could amount to a formal review process where science is viewed in *addition* to socio-economics.

Chapter 6

A Transaction Cost Theory of Policy Networks: Conclusions and Key Questions for Future Research

6. Contributions and Conclusions

By way of conclusion, I wish to re-visit the central theoretical and empirical arguments presented in the dissertation by addressing how they can be viewed to make ten significant contributions to the literature(s):

1. The policy network literature has identified exchange as the underlying rationale for the existence of networks in policy-making. However, the literature does not take an *exchange* approach where transaction costs matter (with the notable exception of Hindmoor's (1998) work focusing on implementation, not on policy-making). By viewing the policy network through the lens of transaction cost theory – that is by taking an explicitly exchange-oriented approach where transaction costs are positive – I offer an important conceptual advancement in the study of exchange in policy-making.
2. Current policy network analysis takes the existence of networks as given. They are *exogenously* defined. My own work establishes a concrete rationale for network emergence as one possible solution to the legislator's general problem of procuring vote-productive policy resources for expected vote maximizing policy-making. In this context, the policy network is viewed in comparative organizational terms, and its existence can be shown to arise *endogenously* in the framework.
3. I develop a set of testable propositions about the exogenous conditions that affect informal exchange in policy networks. By doing this, I am able to suggest a range of independent variables that can be shown to affect the structure of exchange in policy-making. This is an important advancement in that it establishes a link between network governance and variables that are not necessarily tied directly to the actors involved in exchange.
4. The classification of ideal-type policy network models establishes a concise treatment of how network structure affects network exchange. The structure of exchange is related to the cost of governance and the distribution of rent in a manner that has not previously appeared in the literature. It is this work that most clearly answers Dowding's (1995) criticism that network *actors* have been viewed to condition exchange. Instead, I argue that network *structure* conditions

exchange. The implication is that consistent behaviour to guarantee the sanctity of exchange through the transfer of private enforcement capital will lead to different governance costs depending on whether the network is direct, indirect, or complex.

5. The empirical work in Chapters 3 and 4 indicates that the *Lobbyists Registry* can be used as a database to test propositions developed out of transaction cost methodology. This is a unique treatment of empirical evidence in the study of policy networks. In addition, it establishes that the *Lobbyists Registration Act* can be used as a database to reveal patterns of behaviour in policy-making, a suggestion that had not previously been uncovered.
6. The rbST case-study not only contributes to the relative paucity of policy research completed on this interesting and important issue, it also establishes that transaction cost methodology can explain organizational responses that are observed in the actual policy-making setting. The case advances the research agenda of both the policy network literature and the transaction cost literature.
7. The application of private sector transaction cost theory to public sector problems is shown to be fruitful. In particular, I argue that assets must be viewed not only in economic terms, but in political ones as well (i.e., asset versus interest specificity). The implication of this is that as transaction cost research is developed further, it is important to account for distinctions between private and public sector contracting.
8. The current literature on self-enforcing contracts has dealt specifically with cases of one-on-one trades in an environment where court-enforcement is always a last resort. The dissertation deals with situations in the policy network where courts do not play a role, and with cases of multi-party exchange in which transfers of private enforcement capital can occur between more than two actors. The implication is that the condition of self-enforcement is deeper in certain public sector settings than they are in the private sector, and research must account for this difference.
9. Current models of common agency relationships in lobbying indicate that under some circumstances, legislators can capture all of the rent created in exchange. I argue that when multi-party trade is predicated on the exchange of interest specific resources, rent will not accrue to one party, but rather will be distributed amongst the parties. The significance of this is that future research on common agency problems in the public sector will have to account for interest specificity and its effect on rent distribution.

10. Overall, the dissertation augurs well for the future of transaction cost theorizing about policy-making and the policy network. It offers a strong starting point for a continuing research agenda on the conditions, parameters, and implications of exchange in the public sector. Notwithstanding the other contributions made, I suggest that by simply furthering the transaction cost approach, the dissertation makes a fundamental submission to the policy network and transaction cost literatures.

6.1 Key Questions for Future Research

As the last point above suggests, the potential exists for a rich and varied research agenda stemming from the transaction cost theory of policy networks I have presented in the dissertation. To develop a first initial link between the dissertation and future directions for research, I wish to briefly outline five ways in which I think my work could be used as both a theoretical and empirical point of departure towards an even more comprehensive transaction cost theory of policy networks and policy-making.

6.1.1 Formalizing the Choice Between Ideal-Type Networks

A significant goal of future research will be to formalize the legislator's choice between ideal-type networks. As has been established elsewhere, one possible tool that researchers have at their disposal is to treat coordination in policy-making as a common agency problem. As I outlined above, however, this work has yet to deal with the implication of bargaining over interest specific resources, i.e., actors are treated as being homogeneous. Formalizing network activity by accounting for interest specificity would likely lead to a further revelation of the effect that treating actors heterogeneously has on the cost of resource procurement and the distribution of rent in policy-making.

In addition, formalizing the solution to the procurement problem in each ideal-type network could establish the conditions of network equilibrium. Given my argument that each ideal-type has a different cost structure, it is likely that equilibrium outcomes would also be different. The implication of such a finding would be to afford researchers with an opportunity to reveal how network structure affects actor strategies and the distribution of rent in a network equilibrium.

6.1.2 Further Empirical Work on the Choice Between Ideal-Type Networks

A related direction that future research should take will be to develop more rigorous empirical tests about the legislator's choice between ideal-type networks. As I indicated previously, one of the central tasks of this work will be to investigate the link between the conditions of transferring private enforcement capital between actors, and the structure of self-enforcing exchange in the policy network setting. Completing this research will require the development of some form of "private enforcement index", which would then be used to further illuminate the positive relationship between the structure and cost of informal exchange in policy-making.

One manner in which this empirical work might proceed would be to design a sophisticated survey that could be completed by public and private actors involved in policy-making, ultimately providing researchers with a new database with which to test organizational choices. Not only would such survey research allow one to measure the effect of private enforcement capital on exchange, additional variables to control for things like the intrinsic value of lobbying to a given private actor, or the amount of

private resources dedicated to lobbying, could also be measured. The overall result of this further empirical work would be to strengthen our understanding of the conditions for, and the effects of, self-enforcing exchange in policy-making.

6.1.3 Policy Networks and the Historical Arc of Governance in Policy-Making

The work completed in the dissertation might also inform a broader contextual study of the role of policy networks in the historical cycle or arc of governance in policy-making. Issues regarding the appearance of policy networks over time, the effect of emerging factors such as technology or globalization, or even the consequences of changing institutional or electoral systems, might be investigated by illuminating their effect on the transaction costs associated with exchange in the public sector.

One immediate way that this research could proceed would be to explore what, in recent years, political researchers have increasingly identified as the impact that the ‘information superhighway’ is having on the formation and implementation of public policy. The advent of new technologies that promote communication are thought to have had technical as well as symbolic impacts on policy-making. If this is true, research could be completed on the effect that new communication technology has had, and will to continue to have, on the costs of governance in policy-making. In doing so, the research would uncover whether a specific link exists between technology as a transaction cost reducing innovation, and the efficiency of organizational forms in policy-making over time.

6.1.4 Combining Supply- and Demand-Side Studies of the Policy Network

Another of the key issues that remains to be addressed is how the demand-side study of policy networks that I have developed in the dissertation corresponds to the supply-side model. Clearly, the concerns of legislators while *making* public policies are related to their concerns in *implementing* the policies once written; expected vote maximizing behaviour in competitive electoral systems requires this to be true. As a result, it will be interesting to demonstrate the link that exists between the input and output sides of the policy process.

In particular, at least three questions need to be dealt with. First, research should distinguish whether the costs associated with governance in the formulation of policy are of the same form as those confronted at the implementation stage. In policy-*making*, the legislator's primary goal is to procure productive resources. This entails establishing informal contracts and suitable tools of private enforcement to ensure the efficient transfer of resources. From the legislator's perspective, transaction costs at the front-end are associated with determining whether resources of the desired *type* are transferred at the desired *level*; from the group perspective, transaction costs are associated with receiving private benefits from a suitably written policy prescription, independent of how that policy is delivered (given that it is delivered).

At the back-end however, both legislators and private actors will be concerned with the costs of implementation. If groups involved in the design of a policy are in a sense 'hired' to aid in its delivery through a network organization, a different set of transaction costs will emerge, most notably associated with an informal 'principal-agent'

problem. Legislators would therefore be concerned not only with procuring group resources, but also with monitoring group implementation behaviour; a new source of potential opportunism is created. A key question then, revolves around the issue of whether or not private enforcement tools that enable efficient resource procurement for a given policy, are equivalent to those that would enable the efficient delivery of that same policy.

Second, it is not immediately apparent whether group strategies will be consistent depending on whether they are involved in exchanges for the creation of policy or its delivery. One can imagine a situation where a group might have the necessary resources and organizational capability to affect policy design, but not the required capacity to implement policy, or even the desire to do so. It is thus important that future researchers identify if the exogenous conditions that influence the use of policy networks in policy writing are the same as those for policy administration, and if not, what the differences are and how they affect the policy process.

Finally, a combined supply- and demand-side transaction theory must establish the role of the policy network in a comparative institutional framework. Above, I argued that the policy network emerges as only one possible governance mechanism in the procurement of resources when compared to the market and the bureau. It has also been argued that networks will emerge as delivery mechanisms when the market or hierarchy are unsuitable. What needs to be developed, is an examination of how organizational choices correspond between the two sides. Primarily, the question is whether a correlation exists between the legislator's choice to govern resource procurement by a

network organization and his or her choice to deliver the policy by a similar mechanism: will a policy network in policy-making precipitate a policy network in administration, or will policy-making and policy delivery systems be mixed?

6.1.5 The Social Welfare Effects of Policy Networks in Policy-Making

Throughout the dissertation I have been careful not to ascribe any normative conclusions to the role of the policy network in policy-making. A positive theory has been developed in which I offer no remarks on whether the policy network should be viewed as having a positive or negative effect on social welfare (however one would define social welfare). And yet notwithstanding the important contribution that I believe this theory makes to the study of policy networks, one obvious path that future research could travel down would be to treat social welfare as an explicit target of inquiry.

Here, the goal of research would be to determine if the procurement of policy resources in the policy network leads to socially efficient public policies (again, however one would define socially efficient). Are policies that emerge out of policy network governance more or less socially efficient than those written with resources procured on the market or in the bureau? What are the distinguishing characteristics of alternative governance mechanisms in welfare terms? Does the requirement for group organizational capacity that is inherent to policy network governance preclude certain groups in a manner that might be detrimental to social welfare? Or rather is this requirement socially efficient?

One manner in which research might address these important questions would be

to place the legislator's procurement choice in the broader context of political competition. I have asserted throughout the dissertation that procurement decisions are made on the basis of an expected vote maximizing strategy, without discussing how expected vote maximizing behaviour affects social welfare. It stands to reason, however, that the system of political competition will in fact have welfare effects. Indeed, under conditions of pure political competition expected vote maximization could be argued to be necessarily socially efficient. A research project could thus be devised that would treat the system of political competition as an independent variable, in an effort to determine the link between macro-political institutions, the organization of procurement, and social welfare.

6.2 Summary

Through its examination of the legislator's general problem in policy-making, the dissertation has argued that procurement decisions are affected by the interest specific nature of policy resources, the availability of private enforcement capital in self-enforcing exchange, and the comparative ability of alternative governance mechanisms to guard against contractual opportunism. I have applied these arguments empirically to reveal that they are substantive in the real-world of policy-making, and a rich and exciting theory has been uncovered that I feel confident will appeal to policy network and transaction cost researchers alike. Indeed, regardless of the immediate next step that transaction cost research of the policy network and policy-making will take, I submit that the dissertation represents a valuable point of departure.

Appendix 1

Categories of Lobbyists for the *Lobbyists Registration Act*

There are three categories of lobbyist (Canada 1995: 2):

Consultant lobbyists. These are individuals who, for pay, lobby for clients. They must complete and file the Consultant Lobbyists Registration form when they begin lobbying for a client, when information previously submitted changes, and when the lobbying activity terminates or is completed.

In-house lobbyists (corporate). These are employees who, as a significant part of their duties, lobby for an employer that carries out commercial activities for financial gain. These employees must complete and file the In-House Lobbyists (Corporate) Registration form when they begin to lobby for their employer and thereafter annually. They must also report any changes to information previously submitted, or report if they have ceased their lobbying activities or have ceased to be employed by the employer.

In-house lobbyists (organizations). These are not-for-profit organizations in which one or more employees lobby, and the collective time devoted to lobbying amounts to the equivalent of a significant part of one employee's duties. The senior officer of the organization must complete and file the In-House Lobbyists (Organizations) Registration form when the organization begins to lobby and semi-annually thereafter.

Appendix 2

Distinction between Search and Experience Policy Fields

The distinction between search and experience policy fields is made by looking at the organizational mandate of the lead federal agency as defined in Part II of the *Government Expenditure Plan and the Main Estimates 1998-99*. A search field is defined as one where fulfilling the mandate requires very little if any appeal to external actors (e.g., citizens, clients, groups), particularly in decision-making. Experience fields, in contrast, have a mandate that explicitly calls for such appeal. The pertinent aspects of agency mandate are listed below and explained for each case.

Mainly Search Fields

Employment & Labour (Human Resources Development Department) – To promote and sustain stable industrial relations and a safe, fair and productive workplace within the federal labour jurisdiction; and more generally to collect and disseminate labour and workplace information and to foster constructive labour-management relations.

Employment & labour is defined as a search field due to the nature of the federal government's role in securing safe and fair industrial relations as ostensibly an independent third party. Labour market information is readily available and by definition is a market, implying low levels of interest specificity.

Finance (Department) – Appropriate policies and sound advice with respect to economic, social and financial conditions and to the government's agenda; responsible administration of international financial obligations and subscriptions; economic financing of domestic coinage costs; responsible financing of special projects; effective and efficient corporate administration.

Finance is in large part an internal service for the government. In other words, it is unlikely that many external resources will be required to affect departmental policy.

Immigration (Citizenship and Immigration Department) – To ensure that the movement of people into Canada and membership in Canadian society contribute to Canada's social and economic interests and the protection of the health and safety of Canadians, and that Citizenship and Immigration policies and programs are managed consistent with Canada's domestic needs and capacities, and international commitments and responsibilities.

Immigration is defined as a search field because resources required to make immigration policy are likely to be available on the market e.g., number of applications, effect of immigration on economic performance etc.

Justice (Department) – To provide the Government of Canada and federal departments and agencies with high-quality legal services, have superintendence of all matters connected with the administration of justice in Canada which are not within provincial or territorial jurisdiction and to propose policy and program initiatives in this context with a view to ensuring that Canada is a fair, just and law-abiding society with an accessible, equitable, efficient and effective system of justice.

Justice is defined as a search field because policy resources are easily compared against standards set by law. For example, it is generally not necessary to actually feel the effect of crime in order to write policies on crime.

National Defence (Department) – To protect Canada, contribute to world peace, and project Canadian interests abroad.

National defence is a search field based on the argument that defence policy requires little input from those who experience it.

Mainly Experience Fields

Agriculture (Agriculture and Agri-Food Department) – Our objective is to promote and support, in a sustainable manner, a growing, competitive, market-oriented agriculture and agri-food industry and to promote rural community economic development. While some of the activities of the business line are accomplished in house...others are accomplished through partnerships and agreements with provinces, universities, communities and the private sector.

The partnership oriented focus of the department requires input, or experience, from non-governmental actors for policy success.

Environment (Department) – To make sustainable development a reality in Canada by helping present and future generations of Canadians live and prosper in an environment that needs to be respected, protected and conserved.

Environmental policy resources include to a large extent those associated with the experiences and effects of environmental conditions on economic and political behaviour.

Health (Department) – To help the people of Canada maintain and improve their health...(including) contributing to the generation, provision and use of health information, taking into account the roles of our health information partners.

Health policy is really only measured by experiencing the true effect of resources. Partnerships and inputs from non-governmental actors are therefore instrumental in policy-making.

Industry (Department) – To promote international competitiveness and excellence in industry, science and technology in all parts of Canada,...to promote fair and efficient operation of the marketplace in Canada, and to establish the rules of the marketplace and ensure that they are effectively implemented and enforced...this is accomplished through the development and implementation of strategies in cooperation with major partners and stakeholders for the advancement of trade, investment, technology, youth opportunity, information technology and telecommunications and human resource development.

Partnerships in industrial policy-making are required to gain resources about the marketplace that can only be established by actually being active in the market.

Transport (Department) – To ensure high standards for a safe transportation system; to contribute to Canada's prosperity; to protect the physical environment; to work with partners and clients; to strengthen services; and to provide a challenging and supportive work environment.

Transport policy resources are experience resources because it is only through the actual use of the transportation system that partners and clients are able to generate information and experience about the effectiveness of transportation policy.

Appendix 3

Mann-Whitney U Test for Market Density in Experience vs. Search Fields

The following are the calculations for the Mann-Whitney test discussed above. Note that the results are identical for 1996-97, 1997-98, and combined, as well as when the number of registrations is adjusted for policy field budget size. The calculations shown correspond to the ranks in Table 3.1. See Sincich (1985: Chapter 15) for a review of the Mann-Whitney test.

Variable Values:

$$n_1 = 5; n_2 = 5; T_1 = 38; T_2 = 17$$

Calculating U_1 :

$$U_1 = n_1 n_2 + n_1(n_1 + 1)/2 - T_1$$

$$= 25 + 15 - 38$$

$$= 2$$

$$\therefore \text{p-value} = P(U \leq 2) = 0.0159$$

The test can also be completed on the square roots of registrations to remove any bias due to the dispersion in the sample. Table 9 shows the ranks. The results are identical to those above.

Table 9. Square Root of Lobbyist Registrations and Ranks by Policy Field for 1996-97 and 1997-98

Policy Field	Square Root Registrations 1996-97	Rank 1996-97	Square Root Registrations 1997-98	Rank 1997-98
Expenditure Fields				
Agriculture	10.440306	5	8.7177978	5
Environment	11.661903	6	12.369316	6
Health	19.026297	9	18.11077	9
Industry	22.293496	10	21.18962	10
Transport	15.842979	8	15.231546	8
Search Fields				
Defence	7.2801098	2	6.0827625	2
Employment & Labour	12.64911	7	13.266499	7
Finance	9.591663	4	7.6811457	4
Immigration	8.0622477	3	7.1414284	3
Justice	5.9160797	1	5.9160797	1

Appendix 4

OLS Regression Sub-Sample by Fiscal Year and Field-Type

1. 1996-97 Search Registrations

Actor Name	Registrations	Field	Organization Type 0 = Technical 1 = Behavioural	Funding 0 = No 1 = Yes
ATLANTIS AEROSPACE CORPORATION	3	DEFENCE 1	0	
BOEING CANADA LTD.	1	2	0	
LANVISTA CORPORATION	2	3	0	
AIR CADET LEAGUE OF CANADA	1	4	1	1
CANADIAN ASSOCIATION OF FIRE CHIEFS (CAFC)	1	5	1	
EUROCOPTER CANADA LTD.	1	6	0	
RAILWAY ASSOCIATION OF CANADA (THE) (RAC)	2	EMPLOYMENT & LABOUR 1	1	
CANADIAN TRUCKING ASSOCIATION	2	2	1	
ONTARIO NURSES' ASSOCIATION	1	3	1	
ONTARIO HYDRO	3	4	0	
CANADIAN TECHNOLOGY HUMAN RESOURCES BOARD	1	5	1	
CANADIAN COUNCIL OF TECHNICIANS AND TECHNOLOGISTS	1	6	1	
MANITOBA POOL ELEVATORS (MPE)	4	7	0	
CANADIAN PACIFIC RAILWAY COMPANY	2	8	0	
AIR TRANSPORT ASSOCIATION OF CANADA (ATAC)	3	9	1	
CANADIAN HORTICULTURAL COUNCIL	1	10	1	
DYLEX LIMITED	4	11	0	
ALBERTA POOL	3	12	0	

BUSINESS COUNCIL ON NATIONAL ISSUES	3	13	1	
CANADIAN ASSOCIATION OF FIRE CHIEFS (CAFC)	1	14	1	
FIRE PREVENTION CANADA (FIPRECAN)	1	15	1	
SHOE MANUFACTURERS' ASSOCIATION OF CANADA	1	16	1	
VINCOR INTERNATIONAL INC.	1	17	0	
UNITED PARCEL SERVICE CANADA LTD	2	18	0	
BUSINESS COUNCIL OF BRITISH COLUMBIA	1	19	1	
INSURANCE COUNCIL OF CANADA	2	FINANCE 1	1	
MUTUAL LIFE ASSURANCE COMPANY OF CANADA (THE)	3	2	0	
ASSOCIATION OF UNIVERSITIES AND COLLEGES OF CANADA (AUCC)	1	3	1	
B.C.FEDERATION OF AGRICULTURE	1	4	1	
CAPITAL ONE FINANCIAL CORPORATION	1	5	0	
RETAIL COUNCIL OF CANADA	1	6	1	
FORD CREDIT CANADA LIMITED	1	7	0	
IMASCO LIMITED	1	8	0	
CIVIL SERVICE CO-OPERATIVE CREDIT SOCIETY LTD (THE)	1	9	0	
CANADIAN INSTITUTE OF CHARTERED ACCOUNTANTS (CICA)	2	10	1	
CANADIAN DEPOSITORY FOR SECURITIES LIMITED (THE)	6	11	0	
BOARD OF TRADE OF METROPOLITAN TORONTO	1	IMMIGRATION 1	1	
CANADIAN REAL ESTATE ASSOCIATION (THE) (CREA)	1	2	1	

BLUE WATER BRIDGE AUTHORITY	2	3	0	
MENNONITE CENTRAL COMMITTEE CANADA	1	4	1	
MONTREAL BASEBALL CLUB INC.	2	5	0	
CANADIAN AIRLINES INTERNATIONAL LTD.	4	6	0	
BOYS' AND GIRLS' CLUBS OF GREATER VANCOUVER	2	7	1	
NORTH WEST CRUISESHIP ASSOCIATION (NWCA)	1	8	1	
INSURANCE COUNCIL OF CANADA	1	JUSTICE 1	1	
MENNONITE CENTRAL COMMITTEE CANADA	1	2	1	
CANADIAN FEDERATION OF HUMANE SOCIETIES	1	3	1	
CANADIAN JEWISH CONGRESS	1	4	1	

2.

1997-98 Search Registrations

Group Name	Registrations	Field	Organization Type 0 = Technical 1 = Behavioural	Funding 0 = No 1 = Yes
SIERRA LEGAL DEFENCE FUND	1	DEFENCE 1	1	
BOEING COMPANY (THE)	1	2	0	
PARADIGM PROPERTIES INC	2	3	0	
PRATT AND WHITNEY CANADA INC.	1	4	0	
ONTARIO / TORONTO AUTOMOBILE DEALER ASSOCIATIONS	2	EMPLOYMENT & LABOUR 1	1	
CANADIAN PACIFIC RAILWAY COMPANY	4	2	0	
MANITOBA POOL ELEVATORS (MPE)	3	3	0	
CANADIAN FOUNDRY ASSOCIATION (CFA)	2	4	1	

HORTICULTURAL HUMAN RESOURCE COUNCIL	2	5	1	
CANADIAN CONSTRUCTION ASSOCIATION	1	6	1	
RAILWAY ASSOCIATION OF CANADA (THE) (RAC)	2	7	1	
CANADIAN APPAREL MANUFACTURERS INSTITUTE (CAMI)	1	8	1	
WORKING VENTURES CANADIAN FUND INC.	1	9	0	
CANADIAN TRUCKING ASSOCIATION	2	10	1	
ONTARIO NURSES' ASSOCIATION	2	11	1	
ONTARIO HYDRO	3	12	0	
CANADIAN PULP AND PAPER ASSOCIATION	1	13	1	
CANADIAN COUNCIL OF TECHNICIANS AND TECHNOLOGISTS	3	14	1	
CHAMBER OF SHIPPING OF BRITISH COLUMBIA	1	15	1	
ECHO BAY MINES LTD.	2	16	0	
CANADIAN COMMUNITY REINVESTMENT COALITION (CCRC)	1	17	1	
AIR TRANSPORT ASSOCIATION OF CANADA (ATAC)	3	18	1	
BUSINESS COUNCIL ON NATIONAL ISSUES	3	19	1	
CANADIAN LABOUR CONGRESS (CLC)	3	20	1	1
UNITED TRANSPORTATION UNION	1	21	1	
INSURANCE COUNCIL OF CANADA	1	FINANCE 1	1	
CANADIAN REAL ESTATE ASSOCIATION (THE) (CREA)	2	2	1	
DEMOCRACY WATCH	1	3	1	
VANCOUVER STOCK EXCHANGE	1	4	0	
CIBC INSURANCE MANAGEMENT COMPANY LIMITED	1	5	0	

CANADIAN DEPOSITORY FOR SECURITIES LIMITED (THE)	4	6	0	
GE CANADA	1	7	0	
CANADIAN TRUCKING ASSOCIATION	2	IMMIGRATION 1	1	
CHAMBER OF SHIPPING OF BRITISH COLUMBIA	1	2	1	
CANADIAN COUNCIL FOR REFUGEES	2	3	1	1
CHAMBRE DE COMMERCE DU MONTREAL METROPOLITAIN	1	4	1	
CANON U.S.A. INC	1	5	0	
CANADIAN JEWISH CONGRESS	2	6	1	
CANADIAN COMMUNITY REINVESTMENT COALITION (CCRC)	1	JUSTICE 1	1	
ONTARIO FEDERATION OF ANGLERS AND HUNTERS	2	2	1	
CANADIAN CRIMINAL JUSTICE ASSOCIATION	1	3	1	1
WORLD VISION CANADA	2	4	1	

3. 1996-97 Experience Registrations

Group Name	Registrations	Field	Organization Type 0 = Technical 1 = Behavioural	Funding 0 = No 1 = Yes
NIAGARA FALLS BRIDGE COMMISSION	2	AGRICULTURE 1	0	
AGRICULTURAL GROUPS CONCERNED ABOUT RESOURCES & ENVIRONMENT (AGCARE)	2	2	1	
CHAMBER OF SHIPPING OF BRITISH COLUMBIA	2	3	1	
CANADIAN PRODUCE MARKETING ASSOCIATION	2	4	1	
DAIRY FARMERS OF CANADA (DFC)	2	5	1	
MENNONITE CENTRAL COMMITTEE CANADA	2	6	1	1
ALBERTA POOL	5	7	0	

WYETH-AYERST CANADA INC.	2	8	0	
CANADIAN SEED TRADE ASSOCIATION (CSTA)	3	9	1	
RECKITT & COLMAN	2	10	0	
STONE-CONSOLIDATED CORPORATION	2	11	0	
SANDOZ CANADA INC.	2	12	0	
ALLIANCE FOR RESPONSIBLE ENVIRONMENTAL ALTERNATIVES (AREA CANADA)	2	13	1	
INCO LIMITED	6	ENVIRONMENT 1	0	
CANADIAN ENDANGERED SPECIES COALITION	3	2	1	
HONDA CANADA INC.	1	3	0	
AVENOR INC.	2	4	0	
CANADIAN LIFE AND HEALTH INSURANCE ASSOCIATION INC.	2	5	1	
PACKAGING ASSOCIATION OF CANADA	1	6	0	
ASSOCIATION OF CONSULTING ENGINEERS OF CANADA	3	7	1	
AIR CADET LEAGUE OF CANADA	2	8	1	
STELCO INC.	2	9	0	
CANADIAN CARPET INSTITUTE	2	10	1	
MOORE CORPORATION LIMITED	2	11	0	
MINING ASSOCIATION OF CANADA (THE)(MAC)	3	12	1	
TEA ASSOCIATION OF CANADA	2	13	1	
CANADIAN ENVIRONMENT INDUSTRY ASSOCIATION (CEIA)	2	14	1	
ONTARIO MINING ASSOCIATION	2	15	1	
CANADIAN ENVIRONMENTAL LAW ASSOCIATION	2	16	1	
CANADIAN LIBRARY ASSOCIATION (CLA)	2	HEALTH 1	1	
INCO LIMITED	8	2	0	

MUTUAL LIFE ASSURANCE COMPANY OF CANADA (THE)	4	3	0	
ANDEAN ALPACAS LTD.	1	4	0	
SCHERING CANADA INC.	1	5	0	
NATIONAL ASSOCIATION OF WOMEN AND THE LAW	1	6	1	
ROTHMANS, BENSON & HEDGES	3	7	0	
SAFE DRINKING WATER SYSTEMS COALITION	1	8	0	
ASTRA PHARMA INC.	3	9	0	
CANADIAN LUNG ASSOCIATION	2	10	1	
CANADIAN PUBLIC HEALTH ASSOCIATION (CPHA)	2	11	1	
HEALTH BENEFITS COALITION	2	12	0	
DAIRY FARMERS OF CANADA (DFC)	2	13	1	
CANADIAN ASSOCIATION OF FIRE CHIEFS (CAFC)	1	14	1	
CANADIAN PHARMACISTS ASSOCIATION(CPHA)	1	15	1	
MENNONITE CENTRAL COMMITTEE CANADA	1	16	1	
NU PHARM INC.	2	17	0	
ONTARIO DENTAL ASSOCIATION	1	18	1	
GLAXO WELLCOME INC.	2	19	0	
ALFRED DUNHILL LIMITED	2	20	0	
SANOFI WINTHROP (SANOFI CANADA INC.)	1	21	0	
CANADIAN ASSOCIATION OF FILM DISTRIBUTORS AND EXPORTERS (CAFDE)	2	22	1	
APOTEX INC.	3	23	0	
BOEHRINGER INGELHEIM (CANADA) LTD.	7	24	0	
BUSINESS COUNCIL OF BRITISH COLUMBIA	2	25	1	
CANADIAN SEED TRADE ASSOCIATION (CSTA)	3	26	1	
CANADIAN RED CROSS SOCIETY (THE)	2	27	1	

MERCK FROSST CANADA INC	5	28	0	
AIR CANADA	3	29	0	
CANADIAN IMPORTERS ASSOCIATION INC.	2	30	1	
ELI LILLY CANADA INC.	4	31	0	
CANADIAN PHYSIOTHERAPY ASSOCIATION (CPA)	2	32	1	
MINING ASSOCIATION OF CANADA (THE)(MAC)	2	33	1	
CANADIAN DENTAL ASSOCIATION	2	34	1	
TEA ASSOCIATION OF CANADA	2	35	1	
INDUSTRIAL BIOTECHNOLOGY ASSOCIATION OF CANADA	2	36	1	
IMPERIAL TOBACCO LIMITED	1	37	0	
MICROCELL TELECOMMUNICATIONS INC.	2	38	0	
CANADIAN FEDERATION OF HUMANE SOCIETIES	1	39	1	
CANADIAN TEACHERS' FEDERATION	2	40	1	
CANADIAN SOCIETY FOR INTERNATIONAL HEALTH	2	41	1	
EVANGELICAL FELLOWSHIP OF CANADA	1	42	1	
HEART AND STROKE FOUNDATION OF CANADA	2	43	1	
NEWBRIDGE NETWORKS CORPORATION	4	INDUSTRY 1	0	
CANADIAN COMMUNITY NEWSPAPERS ASSOCIATION	1	2	1	
COUNCIL OF FOREST INDUSTRIES	2	3	1	
MUTUAL LIFE ASSURANCE COMPANY OF CANADA (THE)	3	4	0	
CANADIAN ASSOCIATION OF FISH EXPORTERS	2	5	1	1
CANADIAN MUSIC PUBLISHERS ASSOCIATION	2	6	1	
CANADIAN TRUCKING ASSOCIATION	2	7	1	

AQUATEX CORPORATION	2	8	0	
HONGKONG BANK OF CANADA	2	9	0	
TECHNOLOGY HUMAN RESOURCES BOARD	2	10	1	
FISHERIES COUNCIL OF CANADA	2	11	1	
BC TEL	1	12	0	
OSHAWA GROUP LIMITED (THE)	1	13	1	
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)	2	14	1	
ONTARIO MOTOR COACH ASSOCIATION	2	15	1	
CANADIAN INSTITUTE OF PUBLIC REAL ESTATE COMPANIES (CIPREC)	2	16	1	
ASSOCIATION OF CANADIAN PUBLISHERS	1	17	1	
CANADIAN HORTICULTURAL COUNCIL	2	18	1	
VINCOR INTERNATIONAL INC	4	19	0	
SELECTVIEW CABLE SERVICES	1	20	0	
COM DEV INTERNATIONAL	2	21	0	
URBAN DEVELOPMENT INSTITUTE	2	22	1	
CAMPBELL SOUP COMPANY LTD	1	23	0	
PANCANADIAN PETROLEUM LIMITED	5	24	0	
FOOD & CONSUMER PRODUCTS MANUFACTURERS OF CANADA (FCPMC)	2	25	1	
ASSOCIATION OF CONSULTING ENGINEERS OF CANADA	3	26	1	
COALITION FOR BIOMEDICAL AND HEALTH RESEARCH (CBHR)	2	27	1	
MIDLAND WALWYN	5	28	0	
CANADIAN MANUFACTURERS OF CHEMICAL SPECIALTIES ASSOCIATION	2	29	1	

BAKING ASSOCIATION OF CANADA	2	30	1	
CANADIAN SPHAGNUM PEAT MOSS ASSOCIATION	2	31	1	
NORTHERN FOREST PRODUCTS ASSOCIATION	2	32	1	
CANADIAN RENEWABLE FUELS ASSOCIATION	2	33	1	
TELEGLOBE CANADA INC.	5	34	0	
CANADIAN ELECTRICITY ASSOCIATION	2	35	1	
GLAXO WELLCOME INC	6	36	0	
CANADIAN CATTLEMENS' ASSOCIATION	1	37	1	
VINYL COUNCIL OF CANADA	3	38	0	
WORLD MEDIA BROKERS INC.	1	39	0	
BELL HELICOPTER TEXTRON (A DIVISION OF TEXTRON CANADA	1	40	0	
CANADIAN SUGAR INSTITUTE (CSI)	2	41	1	
CANADIAN ASSOCIATION OF BROADCASTERS	2	42	1	
CANADIAN FILM AND TELEVISION PRODUCTION ASSOCIATION (CFTPA)	2	43	1	
CANADIAN FEED INDUSTRY ASSOCIATION	2	44	1	
MINING ASSOCIATION OF CANADA (THE)(MAC	2	45	1	
CANADIAN IMPERIAL BANK OF COMMERCE (CIBC)	2	46	0	
BREWERS ASSOCIATION OF CANADA	2	47	1	
CANADIAN PACIFIC RAILWAY COMPANY	2	48	0	
SHIPPING FEDERATION OF CANADA (THE)	3	49	1	
ASSOCIATION OF CANADIAN COMMUNITY COLLEGES (ACCC)	2	50	1	
CANADIAN TOBACCO MANUFACTURERS' COUNCIL	2	51	1	

INDUSTRIAL BIOTECHNOLOGY ASSOCIATION OF CANADA	2	52	1	
CANADIAN SCHOOL BOARDS ASSOCIATION (CSBA)	2	53	1	
CANADA PORK INTERNATIONAL	2	54	1	
CANADIAN BANKERS' ASSOCIATION (THE)	2	55	1	
BALLARD POWER SYSTEMS	2	56	0	
IBM CANADA LIMITED	5	57	0	
CANADIAN FOREST INDUSTRIES COUNCIL	1	58	0	
NOVA CORPORATION	2	59	0	
SPAR AEROSPACE LIMITED	1	60	0	
CANADIAN ASSOCIATION OF CHIEFS OF POLICE (CACP)	2	61	1	
NONPRESCRIPTION DRUG MANUFACTURERS ASSOCIATION OF CANADA	2	62	1	
AEROSPACE INDUSTRIES ASSOCIATION OF CANADA	2	63	1	
NORTH WEST CRUISESHIP ASSOCIATION (NWCA)	2	64	1	
WESTEL TELECOMMUNICATIONS LTD.	2	65	0	
CAVALIER TEXTILES	1	66	0	
ALLIANCE OF MANUFACTURERS & EXPORTERS CANADA	2	67	1	
ALLIANCE FOR RESPONSIBLE ENVIRONMENTAL ALTERNATIVES (AREA CANADA)	2	68	1	
CANADIAN SOFT DRINK ASSOCIATION	2	69	1	
TOURISM INDUSTRY ASSOCIATION OF CANADA	2	70	1	
CANADIAN LABOUR CONGRESS (CLC)	2	71	1	
CANADIAN SOCIETY OF ASSOCIATION EXECUTIVES	1	72	1	

AUTOMOTIVE INDUSTRIES ASSOCIATION OF CANADA (AIA)	2	73	1	
INNISKILLIN WINES INC	1	74	0	
INCO LIMITED	5	TRANSPORT 1	0	
RAILWAY ASSOCIATION OF CANADA (THE) (RAC)	2	2	1	
MANITOBA POOL ELEVATORS (MPE)	5	3	0	
INLAND CEMENT LIMITED	3	4	0	
DELTA AIR LINES INC.	1	5	0	
SUZUKI CANADA INC.	1	6	0	
CENTRA GAS ONTARIO INC.	1	7	0	
MALTING ASSOCIATION OF CANADA	1	8	0	
COAL ASSOCIATION OF CANADA (THE)	2	9	1	
AIR CANADA	5	10	0	
LABATT BREWERIES OF CANADA	2	11	0	
TERMINAUX PORTUAIRES DU QUEBEC	3	12	0	
FOOTHILLS PIPE LINES LTD.	3	13	0	
NORTHERN FOREST PRODUCTS ASSOCIATION	2	14	1	
UNITED PARCEL SERVICE CANADA LTD.	2	15	0	
VIA RAIL CANADA INC.	5	16	0	
LAFARGE CANADA INC.	3	17	0	
CANADIAN BUSINESS AIRCRAFT ASSOCIATION (CBAA)	2	18	1	
CANADIAN ASSOCIATION OF PETROLEUM PRODUCERS (CAPP)	2	19	1	
CANADIAN FOREST INDUSTRIES COUNCIL	1	20	0	
ASSOCIATION OF CANADIAN TRAVEL AGENTS - ACTA	2	21	1	
STONE-CONSOLIDATED CORPORATION	1	22	0	
LAIDLAW INC	2	23	0	
ABITIBI-PRICE INC.	1	24	0	

UNITED TRANSPORTATION UNION	2	25	1	
B.C. FEDERATION OF AGRICULTURE	1	26	1	
CANADIAN NATIONAL	6	27	0	
CANADIAN SOFT DRINK ASSOCIATION	3	28	1	
JAPANESE AUTOMOBILE MANUFACTURERS ASSOCIATION OF CANADA (JAMA)	2	29	1	
SUPERIOR PROPANE INC	3	30	0	

4. 1997-98 Experience Registrations

Group Name	Registrations	Field	Organization Type 0 = Technical 1 = Behavioural	Funding 0 = No 1 = Yes
CANADIAN POULTRY AND EGG PROCESSORS COUNCIL	2	AGRICULTURE 1	1	
CANADIAN VETERINARY MEDICAL ASSOCIATION	2	2	1	
CANADIAN PRODUCE MARKETING ASSOCIATION	3	3	1	
CANADIAN PRODUCE MARKETING ASSOCIATION	2	4	1	
CANADIAN SPHAGNUM PEAT MOSS ASSOCIATION	1	5	1	
CANADIAN PULP AND PAPER ASSOCIATION	2	6	1	
CREDIT UNION CENTRAL OF CANADA	2	7	0	
CANADIAN ASSOCIATION OF AGRI-RETAILERS	1	8	1	
CANADIAN FEDERATION OF INDEPENDENT BUSINESS (CFIB)	2	9	1	
INSURANCE COUNCIL OF CANADA	1	ENVIRONMENT 1	1	
CANADIAN PULP AND PAPER ASSOCIATION	2	2	1	
AVENOR INC.	1	3	0	
BUSINESS COUNCIL ON NATIONAL ISSUES	2	4	1	

CANADIAN ENDANGERED SPECIES COALITION	1	5	1	
CANADIAN WATER AND WASTEWATER ASSOCIATION	2	6	1	
NOVA CORPORATION	1	7	0	
INCO LIMITED	5	8	0	
CANADIAN LABOUR CONGRESS (CLC)	2	9	1	
ONTARIO MOTOR COACH ASSOCIATION	2	10	1	
PLACER DOME NORTH AMERICA LIMITED	2	11	0	
SIERRA CLUB OF CANADA	2	12	1	
ONTARIO FEDERATION OF ANGLERS AND HUNTERS	2	13	1	
CANADIAN CHEMICAL PRODUCERS' ASSOCIATION (THE) (CCPA)	2	14	1	
MACMILLAN BLOEDEL LIMITED (MB)	1	15	0	
CANADIAN ENVIRONMENT INDUSTRY ASSOCIATION (CEIA)	2	16	1	
CANADIAN FEDERATION OF AGRICULTURE	2	17	1	
FORD MOTOR COMPANY OF CANADA LTD.	2	18	0	
INSURANCE COUNCIL OF CANADA	1	HEALTH 1	1	
CANADIAN FOUNDRY ASSOCIATION (CFA)	2	2	1	
CANADIAN AIDS SOCIETY (CAS)	1	3	1	
KODAK CANADA INC.	2	4	0	
MONSANTO COMPANY	1	5	0	
CANADIAN ANIMAL HEALTH INSTITUTE (CAHI)	3	6	0	
CANADIAN VETERINARY MEDICAL ASSOCIATION	2	7	1	
PFIZER CANADA INC	2	8	0	
ROTHMANS, BENSON & HEDGES	4	9	0	
PHYSICIANS FOR A SMOKE-FREE CANADA	2	10	1	
CHAMBER OF SHIPPING OF BRITISH COLUMBIA	1	11	1	

CANADIAN LIFE AND HEALTH INSURANCE ASSOCIATION INC.	2	12	1	
CANADIAN HORTICULTURAL COUNCIL	1	13	1	
DAIRY FARMERS OF CANADA (DFC)	2	14	1	
CANADIAN PHARMACISTS ASSOCIATION(CPHA)	2	15	1	
COUNCIL FOR HEALTH RESEARCH IN CANADA	2	16	1	
MERCK FROSST CANADA INC	3	17	0	
APOTEX INC.	2	18	0	
BOYS' AND GIRLS' CLUBS OF GREATER VANCOUVER	2	19	1	
MICROCELL CONNEXIONS INC.	2	20	0	
ELI LILLY CANADA INC.	2	21	0	
CANADIAN WHOLESALE DRUG ASSOCIATION	2	22	1	
CANADIAN ASSOCIATION OF OCCUPATIONAL THERAPISTS	3	23	1	
EDIBLE OIL FOODS ASSOC. OF CANADA	2	24	1	
PASTEUR MERIEUX CONNAUGHT CANADA (CONNAUGHT LABORATORIES LIMITED)	2	25	0	
CAMPAIGN LIFE COALITION	1	26	1	
CANADIAN TOBACCO MANUFACTURERS' COUNCIL	2	27	1	
CANADA PORK INTERNATIONAL	2	28	1	1
NESTLE CANADA INC.	1	29	0	
NOVARTIS CROP PROTECTION CANADA INC.	1	30	0	
CANADIAN ASSOCIATION OF CHAIN DRUG STORES	2	31	1	
ALLELIX BIOPHARMACEUTICALS INC.	1	32	0	
PHARMACIA & UPJOHN INC.	3	33	0	

CANADIAN JEWISH CONGRESS	1	34	1	
ONTARIO MINING ASSOCIATION	2	35	1	
ONTARIO NURSES' ASSOCIATION	2	36	1	
PHARMACEUTICAL MANUFACTURERS ASSOCIATION OF CANADA	2	37	1	
INCO LIMITED	1	38	0	
CANADIAN NURSES ASSOCIATION/ASSOCIATION	2	39	1	
CANADIAN POULTRY AND EGG PROCESSORS COUNCIL	2	INDUSTRY 1	1	1
MUTUAL LIFE ASSURANCE COMPANY OF CANADA (THE)	2	2	0	
RAILWAY ASSOCIATION OF CANADA (THE) (RAC)	2	3	1	
CANADIAN MUSIC PUBLISHERS ASSOCIATION	2	4	1	
CANADIAN APPAREL MANUFACTURERS INSTITUTE (CAMI)	2	5	1	
AQUATEX CORPORATION	2	6	0	
HONGKONG BANK OF CANADA	2	7	0	
ASSOCIATION OF COMPETITIVE TELECOMMUNICATION SUPPLIERS	2	8	1	
CANADIAN TECHNOLOGY HUMAN RESOURCES BOARD	2	9	1	
MEDICAL DEVICES CANADA (MEDEC)	2	10	0	
FISHERIES COUNCIL OF CANADA	2	11	1	
CANADIAN OIL HEAT ASSOCIATION	3	12	1	
CENTRE PATRONAL DE L'ENVIRONNEMENT DU QUEBEC (CPEC)	2	13	1	
PHARMACIA & UPJOHN INC.	2	14	0	
SPECIALTY AND PREMIUM TELEVISION ASSOCIATION	2	15	1	

CANADIAN BUS ASSOCIATION	2	16	1	
GLAXO WELLCOME INC	3	17	0	
BREWERS ASSOCIATION OF CANADA	3	18	1	
URANERZ EXPLORATION & MINING LTD.	2	19	0	
ABITIBI-CONSOLIDATED INC.	3	20	0	
AIR TRANSPORT ASSOCIATION OF CANADA (ATAC)	3	21	1	
CANADIAN EGG MARKETING AGENCY	1	22	1	
PEACE BRIDGE DUTY FREE	1	23	0	
CANADIAN ANIMAL HEALTH INSTITUTE (CAHI)	3	24	0	
CANADIAN PORTLAND CEMENT ASSOCIATION	2	25	1	
CANADIAN CABLE TELEVISION ASSOCIATION (CCTA)	3	26	0	
WYETH-AYERST CANADA INC	2	27	0	
IBM CANADA LIMITED	3	28	0	
CANADIAN ASSOCIATION OF INTERNET PROVIDERS	2	29	1	
CANADIAN ELECTRICITY ASSOCIATION	2	30	1	
CANADIAN CATTLEMENS' ASSOCIATION	1	31	1	
CANADIAN COSMETIC, TOILETRY AND FRAGRANCE ASSOCIATION	2	32	1	
CWT POWER INC	1	33	0	
CANADIAN SUGAR INSTITUTE (CSI)	2	34	1	
NATIONAL DAIRY COUNCIL OF CANADA	2	35	1	
CANADIAN ASSOCIATION OF CHIEFS OF POLICE (CACF)	2	36	1	
CANADIAN AIRLINES INTERNATIONAL LTD.	4	37	0	
LOEWS CINEPLEX ENTERTAINMENT	2	38	0	
AGT LIMITED	1	39	0	

CANADIAN SHIPOWNERS ASSOCIATION	3	40	0	
CANADIAN STEEL TRADE AND EMPLOYMENT CONGRESS	1	41	1	
CANADIAN OCCIDENTAL PETROLEUM LTD	2	42	0	
SUN LIFE ASSURANCE COMPANY OF CANADA	4	43	0	
TEA ASSOCIATION OF CANADA	2	44	1	
CANADIAN RETAIL HARDWARE ASSOCIATION	3	45	1	
WIC WESTERN INTERNATIONAL COMMUNICATIONS LTD	1	46	0	
AEROSPACE INDUSTRIES ASSOCIATION OF CANADA	2	47	1	
CHRYSLER CANADA LTD.	2	48	0	
CANADIAN NUCLEAR ASSOCIATION	2	49	1	
SEAFOOD PRODUCERS ASSOCIATION OF NOVA SCOTIA	2	50	1	
FOREST ALLIANCE OF BRITISH COLUMBIA	1	51	1	
ASSOCIATION OF CANADIAN DISTILLERS	2	52	1	
VINCOR INTERNATIONAL INC.	2	53	0	
CANADIAN TRUCKING ASSOCIATION	2	TRANSPORT 1	1	
STRAIT CROSSING JOINT VENTURE (SCJV)	1	2	0	
CANADIAN PACIFIC RAILWAY COMPANY	3	3	0	
CANADIAN INDUSTRIAL TRANSPORTATION LEAGUE (CITL)	2	4	1	
CENTRA GAS ONTARIO INC.	1	5	0	
UNION GAS LIMITED	2	6	0	
AIR TRANSPORT ASSOCIATION OF CANADA (ATAC)	3	7	1	
ALBERTA POOL	3	8	0	
VIA RAIL CANADA INC	2	9	0	

UNITED PARCEL SERVICE CANADA LTD.	1	10	0	
CANADIAN NATIONAL	3	11	0	
TOURISM INDUSTRY ASSOCIATION OF CANADA	2	12	1	
GE CANADA	2	13	0	
CANADIAN SOCIETY OF CUSTOMS BROKERS	2	14	1	
AGRA MONENCO INC.	2	15	0	
JAPANESE AUTOMOBILE MANUFACTURERS ASSOCIATION OF CANADA (JAMA)	1	16	1	
CELANESE CANADA INC	2	17	0	
CANADIAN AIRLINES INTERNATIONAL LTD.	2	18	0	
COUNCIL OF FOREST INDUSTRIES	2	19	1	
MANITOBA POOL ELEVATORS	3	20	0	
CANADIAN ARCTIC RESOURCES COMMITTEE	1	21	1	
RAILTEX SERVICE COMPANY INC.	2	22	0	
ONTARIO / TORONTO AUTOMOBILE DEALER ASSOCIATIONS	1	23	1	
CANADIAN BUSINESS AIRCRAFT ASSOCIATION (CBAA)	2	24	1	
CANADIAN SHIPOWNERS ASSOCIATION	2	25	1	
UNITED TRANSPORTATION UNION	1	26	1	
VERSAFLOW INC.	1	27	0	
AIR CANADA	3	28	0	

Appendix 5

OLS Estimation of Equation (2) – Dependent Variable is Square Root of Number of Registrations for each Private Actor Registered Under the LRA

Equation →	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Explanatory Variables ↑								
FIELD coefficient (t)	0.12 (3.381)*	0.13 (3.624)*	0.14 (3.570)*	0.13 (3.542)*	0.12 (3.335)*	0.12 (3.288)*	0.13 (3.332)*	0.13 (3.595)*
DEMONSTRATION coefficient (t)	-0.20 (-5.736)*	-0.21 (-6.119)*	-0.14 (-4.466)*	-0.14 (-4.442)*	-0.20 (-5.698)*	-0.13 (-4.007)*	-0.13 (-4.054)*	-0.21 (-6.104)*
FUNDING coefficient (t)	0.082 (0.7320)	0.057 (0.5125)	0.057 (0.5033)				0.082 (0.7171)	
LOBBY coefficient (t)	-0.24 (-4.600)*	-0.24 (-4.578)*			-0.24 (-4.603)*			-0.24 (-4.582)*
REGISTERED CHARITY coefficient (t)	-0.16 (-2.143)*				-0.15 (-2.080)*	-0.15 (-2.026)*	-0.16 (-2.088)*	
CONSTANT coefficient (t)	1.45 (35.11)*	1.44 (34.90)	1.37 (34.95)	1.37 (35.11)*	1.45 (35.23)*	1.38 (35.27)*	1.37 (35.14)*	1.44 (35.04)*
ADJUSTED R-SQUARE	0.12	0.11	0.070	0.072	0.12	0.079	0.078	0.12
SUM OF SQUARED ERRORS	38.74	39.18	41.19	41.22	38.79	40.81	40.76	39.21

Notes: *t significant at 5%; n = 413.

Legend: **FIELD** (0=Search; 1=Experience); **DEMONSTRATION** (0=Technical; 1=Behavioural);

FUNDING (0=No; 1=Yes); **LOBBYIST HIRED** (0=No; 1=Yes);

REGISTERED CHARITY (0=No; 1=Yes)

Appendix 6

OLS Estimation of Equation (3) – Dependent Variable is Square Root of the Number of Registrations for Non-Corporate Organizations Registered under the LRA.

Equation →	(1)	(2)	(3)	(4)	(5)
Explanatory Variables ↓					
FIELD coefficient (t)	0.15 (4.568)*	0.16 (4.543)*	0.17 (4.862)*	0.17 (4.855)*	0.16 (4.653)*
BUSINESS coefficient (t)	0.039 (1.093)	0.042 (1.181)	0.086 (2.691)*	0.087 (2.737)*	
LOBBYIST HIRED coefficient (t)	-0.052 (-0.6943)	-0.031 (-0.4086)			
REGISTERED CHARITY coefficient (t)	-0.17 (-2.928)*		-0.17 (-2.878)*		-0.20 (-3.819)*
CONSTANT coefficient (t)	1.19 (29.56)*	1.19 (29.71)*	1.13 (31.74)*	1.13 (31.87)*	1.22 (39.13)*
ADJUSTED R-SQUARE	0.15	0.15	0.12	0.13	0.15
SUM OF SQUARED ERRORS	11.06	11.09	11.47	11.47	11.15
n	240	240	240	240	240

Note: For *t* statistic in brackets: * Significant at 5%.

Legend: **FIELD** (0=Search; 1=Experience); **BUSINESS** (0=Social; 1=Business);

LOBBYIST HIRED (0=No; 1=Yes); **REGISTERED CHARITY** (0=No; 1=Yes)

Appendix 7

Test of Difference in Complex Network Registration Proportions per Field-Type

The appropriate test statistic between cell proportions is $z = (p_1 - p_2)/[pq(1/n_1 + 1/n_2)]^{1/2}$. At a significance level of 95%, the z-score is 1.645.

For the test of difference in complex network registration proportions per field-type:

$z = (0.7904761 - 0.2095238)/0.0690065 = 8.42$. Therefore experience fields have a higher proportion of registrations.

Reference List

- Agriculture Canada, *Biotechnology in Agriculture: General Information*, (Ottawa: Minister of Supply and Services, 1993).
- Arrow, K.J., "What Has Economics to Say About Racial Discrimination?", *Journal of Economic Perspectives*, 12(2), 1998: 91-100.
- Atkinson, M.M., W. D. Coleman, *The State, Business, and Industrial Change in Canada*, (Toronto: University of Toronto Press, 1989).
- Atkinson, M.M., W.D. Coleman, "Policy Networks, policy Communities and the Problems of Governance", *Governance*, 5(2), 1992: 154-180.
- Atkinson, M.M., W.D. Coleman, "Policy Networks, Policy Communities, and the Problems of Governance" in Dobuzinkis, L., M. Howlett, D. Laycock, eds., *Policy Studies in Canada: The State of the Art*, (Toronto: University of Toronto Press, 1996): 193-218.
- Axelrod, R., *The Evolution of Cooperation*, (New York: Basic Books, 1984).
- Barzel, Y., *Economic Analysis of Property Rights, 2nd Edition*, (Cambridge: Cambridge University Press, 1997).
- Börzel, T.A., "Organizing Babylon – on the Different Conceptions of Policy Networks", *Public Administration*, 76, 1998: 253-273.
- Becker, G.S., "A theory of competition between interest groups for political influence", *Quarterly Journal of Economics*, 98, 1983: 371-400.
- Bimber, B., *The Politics of Expertise in Congress*, (Albany: State University of New York Press, 1996).
- Brennan, G., J.M. Buchanan, "Voter Choice: Evaluating Political Alternatives", *American Behavioral Scientist*, 28, 1984: 185-201.
- Brennan, G., J. Pincus, "An Implicit Contract Theory of Intergovernmental Grants", *Publius: The Journal of Federalism*, 20(4), 1990: 52-65.
- Breton, A., R. Wintrobe, *The Logic of Bureaucratic Conduct*, (Cambridge: Cambridge University Press, 1982).

Breton, A., *Competitive Governments: An Economic Theory of Politics and Public Finance*, (New York: Cambridge University Press, 1996).

Buchanan, J.M., "An Economic Theory of Clubs", *Econometrica*, 32, 1965: 1-14.

Bueckert, D., "Scientists claim management interference in drug reviews", *Canadian Press*, September 16, 1998.

Clavert, R., *Models of Imperfect Information in Politics*, (Chur: Harwood Academics, 1986).

Canada (Industry Canada), *Lobbyists Registration Act: A Guide to Registration*, (Ottawa: Minister of Supply and Services, 1995).

Canada (Office of the Ethics Counsellor), *Informal Version of the Lobbyists Registration Act*, (Ottawa: Lobbyists Registration Branch, Industry Canada, 1996).

Canadian Broadcasting Corporation, "World Report", CBC Radio One, September 16, 1998.

Chiang, A.C., *Fundamental Methods of Mathematical Economics*, 3rd Edition, (New York: McGraw-Hill, 1984).

Coase, R.C., "The Problem of Social Cost", *Journal of Law and Economics*, 3, 1960: 1-44.

Coates, D., M. Munger, "Legislative Voting and the Economic Theory of Politics", *Southern Economic Journal*, 61(3), 1995: 861-872.

Coleman, J.S., *Foundations of Social Theory*, (Cambridge: The Belknap Press, 1990).

Coleman, W.D., G. Skogstad, eds., *Policy Communities and Policy Networks: A Structural Approach*, (Mississauga: Copp Clark Pitman, 1990).

Consumers' Association of Canada, "Policy Position on Recombinant Bovine Somatotropin (rbST)", Ottawa, June, 1994.

Coughlin, P.J., *Probabilistic Voting Theory*, (Cambridge: Cambridge University Press, 1992).

Council of Canadians, "Back off BGH: Keep Canadian Milk Safe", Ottawa, 1998.

Council of Canadians, "Genetically Engineered Food – Concealed and Dangerous", Ottawa, May 26, 1998a.

Cutter, S.L., *Living with Risk: The Geography of Technological Hazards*, (London: Edward Arnold, 1993).

Dahl, R.A., *Who Governs? Democracy and Power in an American City*, (New Haven: Yale University Press, 1961).

Dairy Farmers of Canada, "Dairy Farmers of Canada Seek Strong Government Assurances on Safety of rbST", *Canada NewsWire*, July 14, 1997.

Dairy Farmers of Canada, *1998 Dairy Policy: Adopted January 22, 1998*, (Ottawa: Dairy Farmers of Canada, 1998).

Dixit, A.K., *The Making of Economic Policy: A Transaction-Cost Politics Perspective*, (Cambridge: Massachusetts Institute of Technology, 1996).

Dixit, A., G.M. Grossman, E. Helpman, "Common Agency and Coordination: General Theory and Application to Government Policy Making", *Journal of Political Economy*, 105(4), 1997: 752-769.

Doern, G.B., H. Sheehy, "The Federal Biotechnology Regulatory System: A Commentary on an Institutional Work in Progress", A Paper Prepared for the Conference on Biotechnology, the Consumer and the Canadian Marketplace, Ottawa, September, 1997.

Doern, G.B., "Risky Business: Canada's Changing Science-Based Regulatory Regime", Paper prepared for the Conference on *Science, Government and Global Markets: The State of Canada's Science-Based Regulatory Institutions*, Ottawa, October, 1998.

Dowding, K., "Model or Metaphor? A Critical Review of the Policy Network Approach", *Political Studies*, 43, 1995: 136-158.

Downs, A., *An Economic Theory of Democracy*, (New York: Harper and Row, 1957).

Eggertson, L., "Drug-approval process criticized", *Globe and Mail*, Wednesday, May 28, 1997: A1/A8.

Eggertson, L., "Health officials trying to kill critical parts of drug report: scientists raise concerns over milk hormone", *Toronto Star*, May 29, 1998: A6.

Ellickson, R.C., "A Hypothesis of Wealth-Maximizing Norms: Evidence from the Whaling Industry", in S.E. Masten, ed., *Case Studies in Contracting and Organization*, (Oxford: Oxford University Press, 1996): 29-42.

Enelow, J.M., M.J. Hinich, *The Spatial Theory of Voting*, (Cambridge: Cambridge university Press, 1984).

Epstein, S., "Unlabeled Milk from Cows Treated with Biosynthetic Growth Hormones: A Case of Regulatory Abdication", *International Journal of Health Services*, 26(1), 1996: 173-185.

Erickson, B.H., T.A. Nosanchuk, *Understanding Data*, 2nd Edition, (Toronto: University of Toronto Press, 1992).

Ferejohn, J.A., "Information and the Electoral Process", in J.A. Ferejohn, J.H. Kuklinski, eds., *Information and Democratic Processes*, (Urbana: University of Illinois Press, 1990): 3-19.

Fiorina, M.P., *Retrospective Voting in American National Elections*, (New Haven: Yale University Press, 1981).

Frye, T., "Caveat Emptor: Institutions, Contracts and Commodity Exchanges in Russia", in D.L. Weimer, ed., *Institutional Design*, (Boston: Kluwer Academic, 1995): 37-62.

Goodin, R.E., ed., *The Theory of Institutional Design*, (Cambridge: Cambridge University Press, 1996).

Granovetter, M., "Economic Action and Social Structure: The Problem of Embeddedness", *American Journal of Sociology*, 91(3), 1985: 481-510.

Gulati, R., "Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances", *Academy of Management Journal*, 38(1), 1995: 85-112.

Haas, P.M., "Introduction: epistemic communities and international policy coordination", *International Organization*, 46, 1992: 1-35.

Hanf, K., L.J. O'Toole, Jr., "Revisiting Old Friends: Networks, Implementation Structures and the Management of Inter-Organizational Relations", *European Journal of Political Research*, 21, 1992: 163-180.

Hardy, M.A., *Regression with Dummy Variables*, (Newbury Park: Sage Publications, 1993).

Health Canada, "Statement on Bovine Somatotropin", in Agriculture Canada, *Review of the Potential Impact of Recombinant Bovine Somatotropin (rbST) in Canada, Report of the rbST Task Force*, May, 1995.

Health Canada, "The safety and efficacy of the proposed veterinary drug Nutrilac (rbST)", Mimeo copy, Ottawa, Communications, Policy and Consultation Branch, Health Canada, August 1998.

Hindmoor, A., "The Importance of Being Cultured: Rediscovering Policy Network Theory", unpublished paper, University of Exeter, January, 1997.

Hindmoor, A., "The Importance of Being Trusted: Transaction Costs and Policy Network Theory", *Public Administration*, 76, 1998: 25-43.

Horn, M.J., K. Shepsle, "Commentary on 'Administrative Arrangements and the Political Control of Agencies': Administrative Process and Organizational Form as Legislative Responses to Agency Costs", *Virginia Law Review*, 75, 1989: 499-508.

Horn, M.J., *The Political Economy of Public Administration: Institutional choice in the public sector*, (Cambridge: Cambridge University Press, 1995).

House of Commons of Canada, *Minutes of Proceedings and Evidence of the Standing Committee on Agriculture and Agri-Food, Respecting: General review of evidence and issues relating to the bovine somatotropin hormone, Issue No. 8, March 15, 1994*, (Ottawa: Queen's Printer for Canada, 1994).

Industry Canada, "Federal Government Releases New Biotechnology Strategy", *News Release*, Ottawa, August 6, 1998.

Iriwn, A., "Technical Expertise and Risk Conflict: An institutional study of the British compulsory seat belt debate", *Policy Sciences*, 20, 1987: 339-364.

Jansen, D., "Policy Networks and Change: The Case of High-T_c Superconductors", in Marin & Mayntz (eds.) 1991.

Jarillo, J.C., *Strategic Networks: Creating the Borderless Organization*, (Oxford: Butterworth-Heinemann, 1993).

JECFA, *Report of the Joint Food and Agriculture Organization of the United Nations and the World Health Organization Expert Committee on Food Additives, Fiftieth Meeting, Rome, 17-26 February 1998: Summary and Conclusions*, (Rome: United Nations, 1998).

Jordan, A.G., J.J. Richardson, *Governing Under Pressure: British Politics in a Post-Parliamentary Democracy*, (Oxford: Martin Robertson, 1979).

Joskow, P.L., "Asset Specificity and the Structure of Vertical Relationships: Empirical Evidence", *Journal of Law, Economics, and Organization*, 4(1), 1988: 95-117.

Juskevich, J.C., C.G. Guyer, "Bovine Growth Hormone: Human Food Safety Evaluation", *Science*, 249, 1990: 875-884.

Kenis, P., V. Schneider, "Policy Networks and Policy Analysis: Scrutinizing a New Analytical Toolbox", in Marin and Mayntz eds., 1991.

Kiewiet, D.R., *Macroeconomics and Micropolitics*, (Chicago: University of Chicago Press, 1983).

Klein, B., R.A. Crawford, A.A. Alchain, "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process", *Journal of Law and Economics*, 21, 1978: 297.

Klein, B., "Contracts and Incentives: The Role of Contractual Terms in Assuring Performance", in L. Werin and H. Wijkander, eds., *Contract Economics*, (Oxford: Blackwell, 1992): 149-172.

Klein, B., "Why Hold-Ups Occur: The self-enforcing range of contractual relationships", in J.R. Lott, Jr., ed., *Uncertainty and Economic Evolution: Essays in Honor of Armen A. Alchain*, (London: Routledge, 1997): 63-86.

Klein, B., K.B. Leffler, "The Role of Market Forces in Assuring Contractual Performance", in D.B. Klein *Reputation* (1997): 289-313.

Klein, B., K.M. Murphy, "Vertical Integration as a Self-Enforcing Contractual Arrangement", *American Economic Review*, 87(2), 1997: 415-420.

Klein, D.B., "Knowledge, Reputation, and Trust by Voluntary Means", in D.B. Klein, ed., *Reputation: Studies in the Voluntary Elicitation of Good Conduct*, (Ann Arbor: University of Michigan Press, 1997a): 1-14.

Klein, D.B., "Trust for Hire: Voluntary Remedies for Quality and Safety", in D.B. Klein, ed., *Reputation: Studies in the Voluntary Elicitation of Good Conduct*, (Ann Arbor: University of Michigan Press, 1997b): 97-133.

Kollman, K., "Inviting Friends to Lobby: Interest Groups, Ideological Bias, and Congressional Committees", *American Journal of Political Science*, 41(2), 1997: 519-544.

Laband, D.N., "An Objective Measure of Search Versus Experience Goods", *Economic Inquiry*, 29, 1991: 497-509.

Landa, J.T., *Trust, Ethnicity, and Identity*, (Ann Arbor: University of Michigan Press, 1994).

Lewis, H.W., *Technological Risk*, (New York: Norton, 1990).

Lorenz, E.H., "Neither Friends nor Strangers: Informal Networks of Subcontracting in French Industry", in G. Thompson, J. Frances, R. Vevacic, J. Mitchell, eds., *Markets, Hierarchies and Networks: The Coordination of Social Life*, (London: Sage, 1991): 183-192.

Lueck, D., "Egalitarian Rules and the Productive Role of Common Property", mimeo copy, Baton Rouge: Louisiana State University, 1991.

Lyons, B., J. Mehta, "Contracts, opportunism and trust: self-interest and social orientation", *Cambridge Journal of Economics*, 21, 1997: 239-257.

MacDonald, M.R., "Towards an Agenda for the Study of Policy Networks: A Review Paper", School of Public Administration, Carleton University, November 15, 1996.

Marsh, D., R.A.W. Rhodes, eds., *Policy Networks in British Government*, (Oxford: Clarendon Press, 1992).

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

Marin, B., R. Mayntz, eds., *Policy Networks : Empirical Evidence and Theoretical Considerations*, (Frankfurt: Campus Verlag, 1991).

McCubbins, M.D., R.G. Noll, B.R. Weingast, "Administrative Procedures as Instruments of Political Control", *Journal of Law, Economics, and Organization*, 3, 1987: 243-277.

McCubbins, M.D., R.G. Noll, B.R. Weingast, "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies", *Virginia Law Review*, 75, 1989: 431-482.

McKelvey, R.D., P.C. Ordeshook, "Elections with Limited Information: A Fulfilled Expectations Model Using Contemporaneous Poll and Endorsement Data as Information Sources", *Journal of Economic Theory*, 36, 1985: 55-85.

Mercuso, N., S.G. Medema, *Economics and the Law: From Posner to Post-Modernism*, (Princeton: Princeton University Press, 1997).

Milgrom, P., J. Roberts, *Economics, Organization and Management*, (Englewood Cliffs: Prentice Hall, 1992).

Mills, L., "Scientific knowledge and the governance of social life – Biotechnology Regulation: The case of bovine growth hormone in the United States and Canada", Paper prepared for the Great Lakes Conference on Political Economy, York University, May, 1996.

Moe, T.M., "The Politics of Structural Choice: Toward a Theory of Public Bureaucracy", in O.E. Williamson, ed., *Organization Theory: From Chester Barnard to the Present and Beyond*, (New York: Oxford University Press, 1990a): 116-153.

Moe, T.M., "Political Institutions: The Neglected Side of the Story", *Journal of Law, Economics, and Organization*, 6, 1990b: 213-253.

Moe, T.M., "Politics and the Theory of Organization", *Journal of Law, Economics, and Organization*, 7, 1991: 106-129.

Moe, T.M., "The Positive Theory of Public Bureaucracy", in D.C. Mueller, ed., *Perspectives on Public Choice: A Handbook*, (Cambridge: Cambridge University Press, 1997): 455-480.

Mosteller, F., R.E. Rourke, *Sturdy Statistics: Nonparametrics and Order Statistics*, (Reading: Addison-Wesley Publishing Company, 1973).

Mueller, D.C., *Public Choice II*, (Cambridge: Cambridge University Press, 1989).

Nash, J.F., Jr., "Two-person Cooperative Games", *Econometrica*, 21, 1953: 128-140.

National Dairy Council of Canada, "Letter to the Minister of Health", Ottawa, May 1998.

Nelson, P., "Information and Consumer Behaviour", *Journal of Political Economy*, March/April 1970: 311-29.

Nelson, P., "Advertising as Information Once More" in D.G. Tuerck, ed., *Issues in Advertising: The Economics of Persuasion*, (Washington D.C.: American Enterprise Institute for Public Policy Research, 1978): 133-160.

North, D.C., *Institutions, Institutional Change and Economic Performance*, (Cambridge: Cambridge University Press, 1990).

Ostrom, E., *Governing the Commons: The Evolution of Institutions for Collective Action*, (New York: Cambridge University Press, 1990).

Oxley, J.E., "Appropriability Hazards and Governance in Strategic Alliances: A Transaction Cost Approach", *Journal of Law, Economics and Organization*, 13(2), 1997: 387-409.

Paldam, M., G.T. Svendsen, "An Essay on Social Capital: Reflections on a Concept Linking Social Sciences", Working Paper No. 1998-8, Department of Economics, University of Aarhus, Denmark, 1998.

Pappi, F.U., D. Knoke, "Political Exchange in the German and American Labor Policy Domains", in B. Marin and R. Mayntz, eds., *Policy Networks: Empirical Evidence and Theoretical Considerations*, (Frankfurt: Campus Verlag, 1991).

Park, S.H., "Managing an Interorganizational Network: A Framework of the Institutional Mechanism for Network Control", *Organization Studies*, 17, 1996: 795-824.

Peel, C.J., Bauman, D.E., "Somatotropin and lactation", *Journal of Dairy Science*, 70, 1987:474-486.

Peltzman, S., "The economic theory of regulation after a decade of deregulation" in M. N. Bailey and C. Winston, eds., *Brookings Papers on Economic Activity*, (Washington, D.C.: Brookings Institute, 1989): 1-41.

Pigou, A.C., *The Economics of Welfare*, (London: Macmillan, 1920).

Popkin, S.L., "Information Shortcuts and the Reasoning Voter", in B. Grofman, ed., *Information, Participation, and Choice*, (Ann Arbor: University of Michigan Press, 1993): 17-35.

Poole, K.T., T. Romer, "Patterns of Political Action Committee Contributions to the 1980 Campaigns for the United States House of Representatives", *Public Choice*, 47(1), 1985: 63-111.

Powell, W.W., "Neither Market nor Hierarchy: Network Forms of Organization", in B.M. Staw, L.L. Cummings, eds., *Research in Organizational Behavior*, Volume 12, (Greenwich: JAI Press, 1990): 295-336.

Powell, D., W. Leiss, *Mad Cows and Mother's Milk: The Perils of Poor Risk Communication*, (Montreal/Kingston: McGill-Queen's University Press, 1997).

Pross, A.P., *Group Politics and Public Policy*, 2nd Edition, (Toronto: Oxford University Press, 1991).

Putnam, R.D., *Making Democracy Work: Civic Traditions in Modern Italy*, (Princeton: Princeton University Press, 1993).

Ratlidge, C., "Biotechnology: The Socio-economic revolution?", in E.J. DaSilva, C. Ratlidge, eds., *Biotechnology: Economic and Social Aspects*, (Cambridge: Cambridge University Press, 1992): 1-22.

rbST Task Force, *Review of the Potential Impact of Recombinant Bovine Somatotropin in Canada: Report of the rbST Task Force*, (Ottawa: Agriculture Canada, 1995).

Rhodes, R.A.W., D. Marsh, "New Directions in the Study of Policy networks", *European Journal of Political Research*, 21, 1992: 181-205.

Rowe, N., *Rules and Institutions*, (London: Philip Alan, 1989).

Rubin, P.H., *Managing Business Transactions: Controlling the Cost of Coordinating, Communicating, and Decision-Making*, (New York: Free Press, 1990).

Sabatier, P.A., "An advocacy coalition framework of policy-change and the role of policy-oriented learning therein", *Policy Sciences*, 21, 1988: 129-168.

Sandler, T., *Collective Action: Theory and Applications*, (Ann Arbor: University of Michigan Press, 1992).

Senate of Canada, *Proceeding of the Standing Senate Committee on Agriculture and Forestry: Issue 17 – Evidence*, June 4, 1998.

Sened, I., *The Political Institution of Private Property*, (Cambridge: Cambridge University Press, 1997).

Shelanski, H.A., P.G. Klein, "Empirical Research in Transaction Cost Economics: A Review and Assessment", *Journal of Law, Economics, and Organization*, 11, 1995: 335-361.

Shepsle, K.A., "Political Deals in Institutional Settings" in Goodin (1996): 227-239.

Sincich, T., *Statistics by Example*, 2nd Edition, (San Francisco: Dellen Publishing, 1985).

Smith, M.J., *Pressure, Power and Policy: State Autonomy and Policy Networks in Britain and the United States*, (Pittsburgh: University of Pittsburgh Press, 1993).

Speller, R. (M.P.; Chair of the Standing Committee on Agriculture and Agri-Food), *rBST in Canada: Report of the Standing Committee on Agriculture and Agri-Food*, (Ottawa: House of Commons Canada, 1994).

Staaf, R.J., "Homo Politicus and Homo Eonomus: Advertising and Information", in D.G. Tuerck, ed., *The Political Economy of Advertising*, (Washington D.C.: American Enterprise Institute for Public Policy Research, 1978): 135-160.

Stennes, B.K., Barichello, R.R., Graham, J.D., *Bovine Somatotropin and the Canadian Dairy Industry: An Economic Analysis*, (Ottawa: Policy Branch, Agriculture Canada, 1990).

Stigler, G.J., "The theory of economic regulation", *Bell Journal of Economics and Management Science*, 2, 1971: 3-21.

Throgmorton, J.A., "The Rhetorics of Policy Analysis", *Policy Sciences*, 24, 1991: 153-179.

van Waarden, F., "Dimensions and types of policy networks", *European Journal of Political Research*, 21, 1992: 29-52.

Wilks, S., M. Wright, eds., *Comparative Government-Industry Relations*, (Oxford: Clarendon, 1987).

Wright, D.B., *Understanding Statistics: An introduction for the Social Sciences*, (London: Sage, 1997).

Williamson, O.E., *Markets and Hierarchies: Analysis and Antitrust Implications*, (New York: Free Press, 1975).

Williamson, O.E., *The Economic Institutions of Capitalism*, (New York: Free Press, 1985).

Williamson, O.E., "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives", Universitat des Saarlandes: Europa-Institut, May 1991.

Williamson, O.E., *The Mechanisms of Governance*, (New York: Oxford University Press, 1996).

APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved