Public entrepreneurs in Canada: theory and evidence

Matt Wilder[†]

June 9, 2021

Abstract

Motivated by the need for clearer theory on causal agents and causal processes, this paper develops a theory of public entrepreneurship and applies it to the Canadian institutional context. It begins by reconciling economic and political theories of entrepreneurship by drawing attention to two main threads in the literature: rent and the institutional context of innovation. A general theory of entrepreneurship is then developed in which actors are motivated to capture entrepreneurial rents, given institutional constraints and opportunities. Public entrepreneurship is characterized by the externalization of entrepreneurial costs on to the public. The institutional context is modelled as the distribution of veto power in the political system, which in Canada is concentrated at the level of first ministers (i.e., the prime minister and provincial premiers). The theory is then applied to three cases of public entrepreneurship in the fields of transportation, energy, and biotechnology. Process tracing and counterfactual analysis yield findings consistent with the theory that public entrepreneurs with the support of first ministers are able to pursue high-risk and costly policies, the likes of which would be pre-empted in systems with greater political representation and institutional checks on cost shifting. Implications for comparative politics and policy design are discussed.

Keywords: causal agents; causal mechanisms; entrepreneurship; innovation; process tracing; public entrepreneurs

JEL classification: L26, D72, D78, P16

[†] Postdoctoral Fellow, Harvard University Department of Government. Email: mattwilder@g.harvard.edu.

1 Introduction

The past two decades have witnessed a surge of scholarly interest in causal agents and causal processes (Checkel & Bennett 2015). Ambiguity remains, however, concerning the identity and motivation of agents involved in political processes and exchanges (Paquet & Broschek 2017). This paper addresses the ambiguity in two parts: one theoretical and one empirical.

The first part of the paper establishes a general theoretical foundation by drawing on concepts from the literature on economic and political entrepreneurship, the former of which emphasizes incentives to capture entrepreneurial rents, while the latter emphasizes the institutional context of innovation (Clark 1899; Kingdon 1984). From there, criteria for differentiating private from public entrepreneurs are advanced based on the classic distinction between individual, voluntary, and government activity outlined by Buchanan and Tullock (1962: 47-48). According to this perspective, whereas private entrepreneurship is characterized by cost internalization, public entrepreneurship is characterized by cost externalization in the pursuit of entrepreneurial rents. Accordingly, public entrepreneurship depends on institutions that permit entrepreneurial costs to be diffused on to the public, namely a favourable distribution of veto power.

The second part of the paper demonstrates the explanatory power of the theory by applying process tracing to three cases of Canadian policymaking related to transportation, energy, and biotechnology. Interview and archival evidence support the hypothesis that public entrepreneurs in Canada are effectual only when they have the approval of first ministers, as Canadian first ministers possess substantial veto power and face few institutional obstacles limiting the imposition of externalities on to the public. Counterfactual analysis supports the complementary hypothesis that institutional checks on the imposition of externalities, the likes of which are greater in more representative political systems, dampen the efficacy of would-be entrepreneurs. One corollary is that entrepreneurs without the support of first ministers must internalize costs by marshalling required resources; that is, they must act more like private entrepreneurs. Another corollary is that entrepreneurs whose objectives are opposed by first ministers have limited room to manoeuvre. Moreover, entrepreneurs lacking executive support have comparatively few opportunities to venue shop, relative to other political systems (Baumgartner & Jones 1993; cf. Pralle 2003).

The paper concludes with a discussion of the implications of the theory on several dimensions, including incidence of policy change, equity, and capacity for innovation. Consistent with popular theories in the field of comparative political economy, it is suggested that a trade-off exists between political representation and policy responsiveness. Yet, decisionmaking systems can be designed to facilitate institutional complementarities and avoid harmful institutional pathologies. That is, decisionmaking systems can be designed to encourage entrepreneurship that proffers positive

externalities while discouraging opportunistic rent-seeking that diffuses negative externalities onto outgroups in society.

2 The theory of entrepreneurship

Entrepreneurship involves sensing latent demand and taking steps to satisfy it (Kirzner 1973). Entrepreneurs in the economy sense latent demand for goods and services and take steps to bring them to market (Schumpeter 1939). Similarly, entrepreneurs in the public sphere sense latent demand for public policy and take steps to bring programs to fruition (Kingdon 1984; Schneider & Teske 1992).

Although there are separate literatures on private and political entrepreneurs, entrepreneurship is a singular concept. Theories of political entrepreneurship should therefore be understood as a subset of a general theory of entrepreneurship that applies to any social organization. Not only is such an understanding conceptually appropriate, it is also empirically necessary since the lines demarcating private and public spheres are often blurry (Ostrom 1990; Scharpf 1997).

2.1 Economic and political entrepreneurs

Mainstream social science considers behaviour to be a function of preferences (i.e., tastes) and institutions (i.e., rules) (Arrow 1951; North 1990; Riker 1982). The economics literature on entrepreneurship tends to focus on preferences, and considers entrepreneurship to be motivated by the pursuit of entrepreneurial rents known as profit (Clark 1899; Knight 1921). By contrast, the literature on political economy, public policy and organizational behaviour places comparatively greater emphasis on the institutional milieux governing innovation (Miller & Whitford 2016; Grossman & Helpman 2001; Simon 1947; Cyert & March 1964; Argyris & Schön 1978). The simplest model of the institutional environment accounts for the distribution of veto players, defined as actors with the authority to permit or forbid departures from the status quo (Tsebelis 2002). From there, it is possible to model complex "ecologies" of "nested games" if desired (Axelrod 1997; Long 1958; Lubell 2013; Ostrom 2005).

Yet, outside of economics, conceptions of the entrepreneur are rather nebulousness. Moreover, although "political entrepreneur," "public entrepreneur," and "policy entrepreneur" are more or less equivalent concepts, niche literatures surround each of these terms. For instance, the literature on political entrepreneurship is primarily focused on interest group leadership and the coordination of collective action (Frohlich et al. 1972). Conversely, the literature on public entrepreneurship tends to emphasize visionary politicians and bureaucrats (Schneider et al. 1995). Meanwhile, the literature on policy entrepreneurship centres on iconoclastic lobbying activity (Kingdon 1984).

Schneider, Teske and Mintrom's (1995) *Public entrepreneurs: agents of change in American government* is arguably the best example of cross-fertilization among the different literatures on entrepreneurship. This work is also the most analytically rigorous treatment of public entrepreneurship to date. Subsequently, the policy process literature on entrepreneurship largely abandoned testable theories and models in favour of a framework orientation, the main points of which are as follows: policy entrepreneurs mobilize when "streams" representative of policies, problems, and politics converge; policy entrepreneurs often have at hand pet solutions in search of problems; successful policy entrepreneurs must be skilled at navigating social environments (Kingdon 1984; Jones et al. 2016; Petridou & Mintrom 2020).

Notice that these insights can be stated in more general terms: entrepreneurial action is a function of means, motive, and opportunity; entrepreneurs seek resources and authorization required to put their plans into action; successful entrepreneurs must know how to exploit institutional constraints and opportunities for their own ends. Furthermore, the generalized theory is amenable to formal modelling. Compared to verbal theory on its own, formal modelling has the benefit of clarifying and making more explicit hypothesized causal processes and causal mechanisms. Interestingly, formal modelling of entrepreneurship was most salient in the bygone literature on political entrepreneurship (Frohlich et al. 1972; Moe 1980). While these modelling techniques prove useful, we may glean a more parsimonious theoretical foundation by looking even farther back in time.

2.2 Theoretical foundations

Although theory on political entrepreneurship grew out of the literature on collective action, a similar and arguably simpler account had been previously articulated by Buchanan and Tullock (1962) in *The Calculus of Consent* (cf. Olson 1965; Salisbury 1966; Wagner 1966). While political economy scholarship on rents and rent-seeking was not yet developed at the time, the actors in Buchanan and Tullock's theory are motivated by the pursuit of rent; i.e., the residual claimed on top of the marginal costs of producing goods and services (cf. Clark 1899; Tullock 1988).

According to Buchanan and Tullock's theory of the "organization of human activity," unilateral action is preferable to collective action, ceteris paribus, because collective action involves greater transaction costs. Only when individual benefits from collective action outweigh those that can be obtained unilaterally should collective action be forthcoming. Moreover, voluntary collective action is expected only when the costs of collective action can be marshalled by the group in question. Otherwise, collective action will falter unless costs can be externalized on to some "out-group." Government exists, according to Buchanan and Tullock, because seizing productive opportunities requires an entity capable of diffusing costs of collective action on to society.

As it happens, the causal agent in Buchanan and Tullock's theory is none other than the "political entrepreneur" —an actor who absorbs coordination costs necessary to resolve the paradox, identified by Olson (1965), that collective action is often not forthcoming despite being in the interest of a group or society. Specifically, the entrepreneurial functions identified by Buchanan and Tullock include: the introduction of policy alternatives; mobilizing critical mass in support of policy; organizing production to maximize economies of scale; brokering trades and trade-offs; and assuming bargaining costs (Buchanan & Tullock 1962: 51-54, 130, 259-260; see also Riker 1982; Kingdon 1984; Marwell and Oliver 1993; Sabatier 1988).

2.3 Modelling entrepreneurship

Given the variety of entrepreneurial functions, can anything general be said about entrepreneurs that would permit entrepreneurship to be studied systematically? One possibility involves conceiving of various roles as terms in utility functions. To that end, Frohlich, Oppenheimer and Young (1971) formalized a cost-benefit theory of the political entrepreneur using utility functions. Slightly modified versions of utility functions for entrepreneurial leaders and their followers are given below, although it should be kept in mind that whether a term is relevant to a situation depends on the circumstances. For instance, if there are no contracts to be awarded, or no taxes and donations to be redistributed, the corresponding terms may be omitted from consideration. In all cases, the expectation is that positive utilities on the left side are a necessary condition for entrepreneurship.

Consider the full form utility functions,

$$u_e(l_e) = u_e(x)p_e(x) + \sum_{f=1}^{n} t_f(e) + b_e - [c(o_e) + c(x_e) + c(m_e)] \quad (1)$$

and

$$u_f(l_e) = u_f(x)p_f(x) + g_f(e)[c(x_e) + c(o_e) + (m_e)] + b_f - \left[t_f(e) + c\left(x_f\right) + c\left(m_f\right)\right] \quad (2)$$

where $u_e(l_e)$ is the utility an entrepreneur receives from leading; $u_f(l_e)$ is the utility individual followers *f* obtain from being led; $u_i(x)$ is the individual utility derived from the provision of collective goods *x*, which is multiplied by the estimated probability *p* that collective goods will be supplied; $t_f(e)$ represents transfers from followers to the entrepreneur; *c* represents compensation paid to followers for their contribution to the supply of collective goods *x*, the collection organization *o*, and the monitoring apparatus *m,* which are costs in the leader's function; $g_f(e)$ represents the share of contracts awarded to followers by the entrepreneur regarding the supply of *x, o*, and *m*; and *b*

represents non-material (solidary) benefits (cf. Frohlich, Oppenheimer & Young 1971: 44).

Although the architects of these functions had joint production in mind, collective goods may also be conceived in terms of technology or regulatory institutions that affect opportunities or incentives for action, whether collective or unilateral. For example, if the collective good x represents, say, a proposed regulatory amendment that would legalize human cloning, the utilities of passive followers (i.e., prospective supporters or opponents of the policy) would be limited to $u_f(l_e) = u_f(x)\, p_f(x)$, whereas the function of an active stakeholder might include all of the terms in Equation 2. The same applies to situations where the development of requisite technology is at issue.

Notice that utilities in the above functions may be interdependent, depending on the terms considered. For instance, if the entrepreneur requires investors, then costs t in the follower's function mirror benefits t in the entrepreneur's function. Moreover, when collective goods involve co-production, the size of contracts g awarded to followers by leaders affect the utilities of both leaders and followers. Importantly, contracting involves transaction costs and the establishment of credible commitments, the latter of which may depend on effective monitoring and enforcement via the monitoring apparatus m (Milgrom & Roberts 1990). The implications for entrepreneurship are twofold. First, entrepreneurs may facilitate communication necessary for the execution of contracts by absorbing transaction costs with the effect of steering negotiations toward cooperative equilibria (Axelrod 1984). Second, entrepreneurs may commit to absorbing monitoring and enforcement costs to make contracts credible (Ostrom 1990).

Finally, consideration of the likelihood p that collective goods will be forthcoming draws attention to the fact that entrepreneurship is an exercise in management of risk and uncertainty. Per Knight (1921), whereas uncertainty cannot be estimated, risk is ascertainable by leaders and followers and can thus be imputed into the probability term p. Ideas matter because they convert uncertainty into risk via narratives and causal stories (Jones et al. 2014; Stone 1989; Hall 1993; Blyth 2007). Formally, ideas affect the dimensionality of the policy discourse and agenda space, as shown below.

Besides reallocating transfers from followers, entrepreneurs may deploy personal resources to cover risk and other costs. Of course, it would be insensible for entrepreneurs to plan sustained personal losses. Indeed, the resources that private entrepreneurs can devote to an enterprise are limited. As indicated above, investors of various kinds may be accounted for using the terms in Equation 2. When government assumes the role of investor, public entrepreneurs may "raid the fiscal commons" as a means of eliciting necessary support. Public insurance may affect cost and risk so that positive utilities result.

2.4 Accounting for hold up

The discussion so far has covered situations in which actors are aware that an action could make them better or worse off. If action is held up in such situations, it is due to one or more of the following: transaction and monitoring costs discourage coordination; risk is too great for either entrepreneurs or their followers to bear; or the action is not permitted or possible given existing institutions and technology (and prospects for changing institutions and technology are poor). If transaction and monitoring costs are at issue, entrepreneurship simply involves recognizing profitable opportunities and designing institutions to redeploy resources so that transaction and monitoring costs are covered. If risk is the problem, entrepreneurial risk management may overcome the hold up. If technology or institutions are deficient, demand exists for technological or institutional innovation, which pose entrepreneurial opportunities.

By contrast, the discovery and satisfaction of truly latent demand implies that actors are either unaware or are uncertain that their interests could be served by some innovation. In these instances, followers are incapable of assigning a utility to the provision of goods, either because the possibility has not occurred to them or because ignorance prevents potential followers from making the required calculations. When an action is hindered by ignorance, the entrepreneurial function involves activation of latent demand via the communication of ideas through discourse and rhetoric (Blyth 2003; Riker 1986; Schmidt 2008).

2.5 Modelling mobilization

The activation of latent demand can be modelled spatially using indifference curves (Casson 1982: 60-63). Importantly, the kernel of the theory is not that the entrepreneur informs others of their utilities. Rather, activation of latent demand involves the introduction of hitherto ignored or unappreciated dimensions for consideration (Plott 1967). As mentioned above, entrepreneurs may activate latent demand rhetorically by focusing actors' attention (Jones 1994). Yet entrepreneurs may also exploit latent demand by making viable alternatives previously considered unviable by managing one or more of the following: costs, technology, and regulatory institutions (Phillips 2007).

To illustrate the disequilibrating effect that follows from the introduction of additional dimensions for consideration, consider the example given in Figure 1 of a three-person committee deciding by majority vote. The preferences of three actors {A, B, C} on a single dimension *x* are portrayed in the top panel. A's preference is to the left of the status quo. C's preference is to the right of the status quo. B prefers the status quo. Because the status quo is the median preference, per the dictates of the median voter theorem, it cannot be beat (Black 1958). In technical terms, the status quo is in equilibrium; the "winset of the status quo" is "empty" (i.e., non-existent). The lower panel of Figure 1 illustrates the disequilibrating effect that follows from the introduction of an

additional dimension *y* for consideration. The introduction of an additional dimension breaks the unidimensional equilibrium as seen by the materialization of majority winsets of the status quo in two dimensions (represented as hatched areas). Majority winsets are areas containing points a majority of actors prefers to the status quo. Notice the winsets A ∩ B and B ∩ C depart from the status quo on dimension *x*. The addition of dimension *y* has broken the stable equilibrium on dimension *x*.

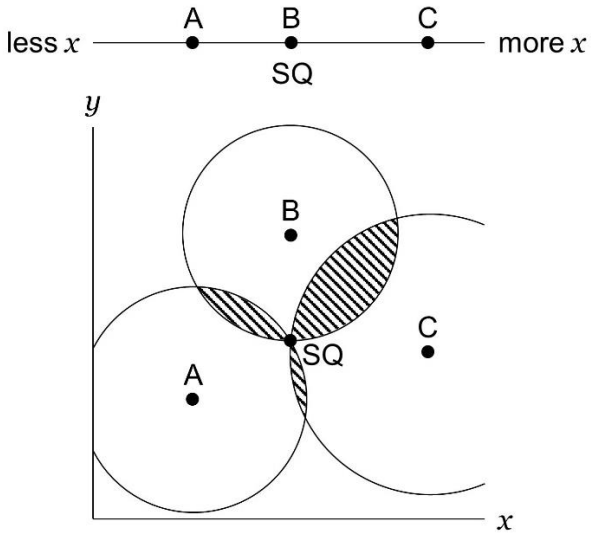

Figure 1: Equilibrium and disequilibrium in one and two dimensions

Spatial models of the sort presented in Figure 1 may also be used to model decisionmaking by large groups, including electorates (Downs 1957). For example, let {A,B,C} represent electoral constituencies. Now, the addition of an election issue *y* breaks equilibrium on another dimension *x*. What of the consequent winsets? In proportional representation systems, constituent representatives form coalitions by bargaining to locate policy at points favourable to them within winsets (Laver & Shepsle 1990). Conversely, in plurality systems, winsets are often inconsequential as such because a single party forms the government, albeit with incentive to campaign "centripetally" on issues so as to maximize its vote share (Cox 1990). In cases of minority government, winsets regain relevance as the government must appease one or more opposition parties by compromising on policy in exchange for their support.

Whether considering elections or decisionmaking committees, the number of relevant actors (i.e., players) in a choice situation is a function of the "decision rule" (also known as the "aggregation rule"), the four basic types of which are *hierarchy*, *majority, plurality*, and *unanimity* (Ostrom 2005). Under hierarchical decision rules, a single authoritative actor decides by fiat. Majority decision rules require the approval of a

majority of actors, either simple or qualified. Plurality requires approval by the largest cohesive bloc. Unanimity requires consensus among all parties.

Ceteris paribus, unanimity winsets will be smaller than majority winsets, and majority winsets will be smaller than the opportunity set under plurality and hierarchical rule (Tsebelis 2002). Indeed, the policy space is virtually unlimited under "winner take all" decision rules because decisionmakers are not required to compromise. The inverse relationship between number of decisionmakers and size of winsets is called "institutional friction" due to the fact that agreement becomes more difficult as the number of decisionmakers increases (Jones et al., 2009; cf. Lijphart 2012). Institutional friction is a source of stability in policymaking. When institutional friction is high, policymaking and policy change are difficult and infrequent. When institutional friction is low, policymaking is more forthcoming and more frequent.

Reconciling the preceding discussion with veto players theory, actors with the authority to control the number of dimensions in a choice situation possess "agenda power" to veto proposals ex ante (Baumgartner 2016). Veto power is also a function of decision rules, which specify the minimum winning coalition required to sustain or change the status quo. Under hierarchy and plurality rule, absolute veto power is vested in a single actor. Under unanimity rule, by contrast, every actor is a veto player. Under majority rule, veto power is conditional on whether an actor is pivotal. In unidimensional choice situations, the median voter is pivotal (Black 1958). Otherwise, veto power is non-existent in a strict sense. Dearth of veto power in multidimensional majority vote situations accounts for cycling majorities and incoherent majority group preferences (McKelvey 1979). Considering the example in the lower panel of Figure 1, although it is clear that the group prefers some alternative to the status quo, it is impossible to say which alternative the group prefers, as the decision depends on which two actors form the majority coalition. Per the notion of "structure-induced equilibrium," the agenda procedure would be determinative; that is, the order in which proposals are considered and voted on would determine the outcome (Shepsle 1979).

2.6 Modelling decisionmaking

Because the appearance of multiple winsets of the status quo invites political conflict over which winset will encompass the new policy, the process just described is often characterized as involving the introduction of "dimensions of conflict" (Baumgartner & Jones 1993: 29-30). Moreover, there is room for conflict even in situations involving a single winset. In such circumstances, conflict arises because winsets do not specify the precise coordinates of solutions. Rather, winsets represent areas containing viable solutions. The point in Euclidean space actors will settle on, if they settle on any point at all, is a function of bargaining strategies. When the context is amenable to bargaining and,

thus, successful entrepreneurship, a "window of opportunity" for innovation is said to exist (Kingdon 1984).

As shown in the analytical supplement to this paper, game theory is useful for modelling which point within a winset actors will agree upon given the physical attributes of the choice situation and the bargaining strategies employed. Game theory is also useful for explaining why actors may fail to agree despite the existence of a winset (Ordeshook 1986). Standard bargaining theory considers actor strategies to be a function of resource endowments, conceived in terms of opportunity costs (Williamson 1985: 55). The analyst estimates foregone benefits for each actor based on alternative opportunities available to them. If an actor has many (few) other lucrative opportunities, the actor is considered to have a strong (weak) "market power" (Klein et al. 1978). Here "market" may refer to economic or political markets. For instance, suppose that actor A in Figure 1 has disproportionate vote share; the fact that A may form majorities with either B or C implies foregone alternatives (i.e., opportunity costs), which translate to political market power. Actors may also have external opportunities, whether political or economic, that may affect bargaining strength. In any case, relative bargaining leverage is a function of market power disparities, with high opportunity costs and substantial market power corresponding with greater bargaining leverage.

On the preceding point, whether external opportunities credibly contribute to bargaining leverage depends on institutions governing exit (Scharpf 1997: 135-145; cf. Hirschman 1970). In some situations, alternative avenues may be available whereby more lucrative opportunities may be pursued, while in other situations actors may be prevented from seeking outside opportunities by rules and regulations. For example, in corporatist settings, actors are prevented from exiting joint decision systems in favour of unilateral action because unilateral action is precluded by regulations. Similarly, if there is a single authoritative policymaking venue, no external opportunities exist for actors to pursue policy preferences.

As a solution to deadlock in joint decision systems, entrepreneurs have devised means of executing intertemporal trades. Modelling "logrolling" of this sort entails the same procedure as in Figure 1: dimensions of choice are introduced with the purpose of disrupting equilibrium via the creation of winsets (Riker 1982). However, because trades are intertemporal, brokering trades constitutes an entrepreneurial function, and one which entails transaction costs (Buchanan & Tullock 1962: 130). As before, institutions governing agenda control are paramount, as agenda control limits the dimensional scope of choice, whether static or intertemporal (Shepsle 1979).

2.7 Modelling expectations

The discussion to this point has established that prospective gains from entrepreneurship are estimated by modelling actors' expectations. Because player strategies in mobilization games are affected by what actors expect to happen in provision games, it is necessary to consider games in reverse order of how they play out in real life (cf. Grossman & Hart 1986; Williamson 1985: 388). That is, actors should enter negotiations over policy alternatives only if they anticipate good faith contribution to collective goods from their partners. Put another way, actors' behaviour during policy formulation and decisionmaking is dictated by foresight regarding what actors believe will happen during implementation. Such considerations are necessary for estimating the probability term p in Equations 1 and 2, which entails consideration of the innovative and opportunistic actions that increase and decrease actors' estimates of p, respectively.

Provision games model actors' contribution to collective goods which, recall, may be goods and services conventionally-defined, the technology required to produce new goods and services, or institutions that permit or restrict the provision of goods and services. If actors are confident their partners will contribute to collective goods, they have incentive to contribute themselves, which may simply involve supporting a policy decision. However, many situations incentivize opportunistic free-riding, paradoxically thwarting collective action that would be in the interests of all (Hardin 1982). On the preceding point, the act of voting in elections is considered to be attributable to either the likelihood p that one's vote will be effectual or the solidary benefits b obtained from voting (Marwell & Oliver 1993; Riker & Ordeshook 1968).

Summarizing the proofs given in the analytical supplement, when collective action involves co-production, circumstances that give rise to opportunism are characterized, first, by *inseparability* and, second, lack of *task programmability* (Mahoney 1992). Separability refers to whether contributions must come from owners of specific assets for the collective good to be forthcoming (Alchian & Demsetz 1972; Riordan & Williamson 1985). Task programmability refers to a collective good's amenability to a division of labour, which determines whether contributions can be monitored (and thus whether the monitoring apparatus m has a chance of being effective). Task programmability is a close relative of complete contracting, as the former holds only in the presence of the latter (Williamson 1985). Monitoring may take place either in real time or as ex post contract enforcement.

As illustrated in Figure 3 below, and as demonstrated in the supplementary materials using spatial analysis and game theory, situations characterized by separability and task programmability are least conducive to opportunism, and therefore most conducive to voluntary collective action. Inversely, situations characterized by non-separability and low task programmability are most conducive to opportunism, creating demand for entrepreneurs to absorb and manage risk. One solution entails trust-building via cultivation of cooperative norms (Axelrod 1984; Miller & Whitford 2016). The

alternative involves public insurance against risk. Again, when cost and risk are beyond the means of the in-group, demand exists for public entrepreneurs to diffuse cost and risk on to society.

2.8 A unified theory

Consolidating the argument, entrepreneurs absorb costs associated with transacting, bargaining, and coordinating. But what does it mean to "absorb costs"? Here, Schumpeter's distinction between the entrepreneur and the capitalist helps to avoid the pitfall of reducing the entrepreneur to a financier (Schumpeter 1939: 102). The capitalist finances, the entrepreneur has actionable ideas. Recalling the utility functions given in Equations 1 and 2, unless the entrepreneur obtains very high solidary benefits b from acting as entrepreneur, adequate financing in the form of transfers t must be forthcoming for the entrepreneur's utility function to be positive. Meanwhile, with respect to followers, the benefits from following must be sufficient to offset transfers t to the entrepreneur. It is plain to see that followers comprise the financiers in the relationship.

Notice that government action may relieve followers from all or part of the financing burden in Equation 2 by externalizing these costs onto the public. Thus, transfers paid to public entrepreneurs are independent of the ability and willingness of followers to cover the costs of entrepreneurship. By lowering the opportunity cost of innovation, externalization has the effect of expanding followers' preference envelopes and, consequently, creating or enlarging winsets of the status quo. It should also be stressed that compensation paid to public entrepreneurs is often independent of the success of entrepreneurial ventures, which is often not the case for private entrepreneurs.

Importantly, externalities can take other forms besides monetary costs. Indeed, many policies require the forfeiture of certain rights and liberties, as happens when highways, dams, cellular towers, power generation and waste processing facilities are sited, for example, or when policy permits (or simply risks) the release of effluents or radiation into the environment. As before, voluntary collective action depends on the extent to which beneficiaries can internalize non-monetary costs —for instance, by siting facilities on privately-owned land, by paying rent and royalties to parties affected, or weighing the benefits of environmental dangers and nuisances more heavily than costs. Otherwise, public entrepreneurship is required to diffuse the burden of externalities, as only government representatives possess the lawmaking authority to do so. Of course, voluntary action may proceed if externalities are permitted to diffuse on to unsuspecting or politically-weak groups. However, it is often appropriate to consider such action as playing out "in the shadow of hierarchy" with tacit government approval (Scharpf 1997: 47).

The moral hazard implications of public entrepreneurship are obvious and well-known. As noted by Milgrom and Roberts (1990), coordination is vulnerable to moral hazard in any organization that permits cost externalization because moral hazard makes

entrepreneurs tolerant of losses.[1] In other words, while public entrepreneurs may serve the function of overcoming barriers that hinder fruitful pursuits, they may also facilitate bad deals by tolerating harmful opportunistic rent-seeking (Tullock 1988). Per the discussion of opportunity costs and bargaining leverage above, a common instance of rent-seeking behaviour occurs when parties to negotiations hold a monopoly on assets required for a project's success, and can thus demand monopoly rents.

The determinants of the possibility space with respect to cost externalizing policies are the same as any other: the number of decisionmakers and the distance between their first-ranked preferences (Tsebelis 2002). In contrast to more representative political systems in which cost externalizing policies are expected to be curbed by friction, the number of authoritative decisionmakers in the Canadian institutional context is comparatively few. Although "executive styles" vary, first ministers often comprise the sole veto player in policy decisions involving the formal government (cf. Brownsey, Bernier & Howlett 2005). Consequently, it follows that public entrepreneurs stand a much better chance of achieving their objectives if they enjoy the support of first ministers. On one hand, first ministers are analogous to Schumpeter's capitalist-financier given their ability to raid the fiscal commons; on the other, relatively few opportunities to venue shop means first ministers' veto power cannot be easily challenged. Finally, the documented lack of government capacity to provide many goods and services valued by society means that Canadian governments will be especially vulnerable to rent-seeking on the part of private sector partners with assets required to bring goods and services to fruition (Howlett 2000).

Figures 2 and 3 provide graphical summaries of hypothesized causal processes undergirding the two parts of the theory —mobilization and provision— according to best practices for process tracing (Waldner 2015). During mobilization (Figure 2), ideas are introduced by entrepreneurs as an exogenous variable (operationalized as dimensions of choice), which sets the causal process in motion. As discussed earlier, the number of decisionmakers, their preferences and the decision rule (i.e., the institution) also constitute exogenous variables that determine winsets of the status quo. If a winset immediately exists (and assuming decisionmakers agree on a point within the winset), mobilization is attained and the policy proceeds to the provision stage. If a winset does not exist, a private entrepreneur may coordinate resources internally (by brokering trades among followers or by utilizing privately-obtained resources) or a public entrepreneur may externalize requisite costs with the approval of veto players. If either condition obtains, the policy proceeds to provision. If neither condition obtains, the process terminates.

[1] The theory of public entrepreneurship extends to any involuntary organization. Indeed, it is the involuntary nature of collective action that defines "public" in the context of the theory. The vices and virtues of public entrepreneurship are thus not unique to government.

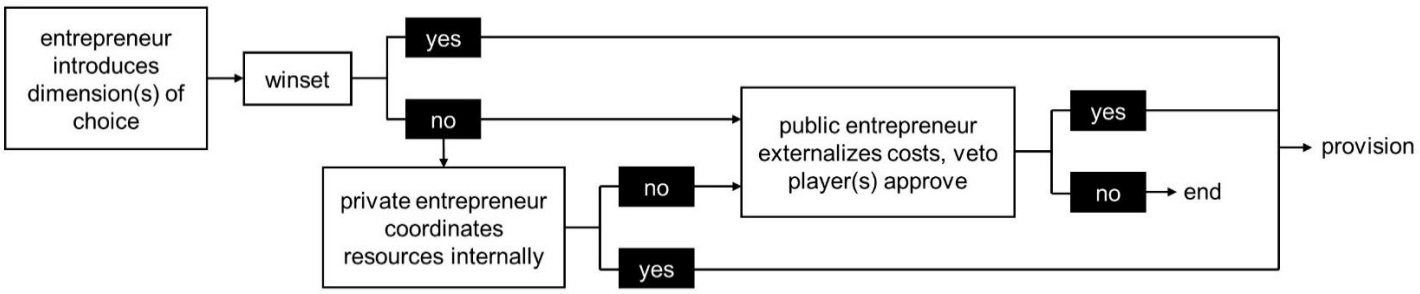

Figure 2: Hypothesized process of mobilization

During provision (Figure 3), the characteristics of the good or service to be produced are paramount. As demonstrated in the analytical supplement, separable contributions lend themselves to *stag hunt* games (also known as *assurance*), whereas non-separable contributions give rise to *prisoner's dilemma* games.[2] So long as there is communication among contributors of separable assets, cooperation should be forthcoming, resulting in successful innovation. This is especially true if there exists a monitor to detect shirking on the quality of contributions (as represented by the dashed line in Figure 3). As shown in the analytical supplement, if public entrepreneurship entails granting monopolies or subsidizing private production, monitoring is all the more necessary to prevent the possibility of shirking, as public entrepreneurship creates a vertical dilemmas (low-powered incentives) problem (Milgrom & Roberts 1990). When assets are non-separable, cooperation depends on effective monitoring, which is only possible when task programmability obtains. Otherwise, contributors have incentive to free-ride on the efforts of others, which can only be mitigated by norms of cooperation (Axelrod 1984; Miller & Whitford 2016).

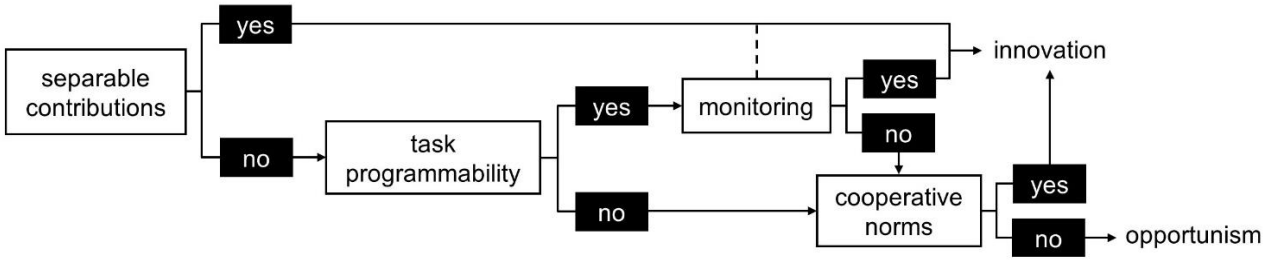

Figure 3: Hypothesized process of provision

[2] Separable contributions correspond with stag hunt games because contributions from holders of unique assets are required to obtain the highest individual payoffs for all players. By contrast, non-separable contributions lend themselves to prisoner's dilemmas because individual players may benefit from shirking on their contributions.

Recall that actors in the mobilization stage (Figure 2) are assumed to have foresight regarding provision (Figure 3). Specifically, the expected utilities given in Equations 1 and 2 are based on risk assessments gleaned from expectations about player strategies during the provision stage. These utilities, in turn, determine the size of preference envelopes (i.e., preferred to status quo sets) and, thus, the existence of winsets in the mobilization stage. By implication, cost externalization germane to public entrepreneurship mitigates risk by making followers tolerant of opportunistic behaviour.

The following sections apply the theory of public entrepreneurship to three cases of Canadian policymaking. Per the process tracing approach suggested by Waldner (2015), the cases convey "event history maps" for assessment against the hypothesized causal graphs depicted in Figures 2 and 3. Although the theory should apply to any case of entrepreneurship, public or otherwise, the cases analyzed herein were selected on the basis of three considerations: diversity with respect to time, geography, and substance; availability of evidence; and the ease with which counterfactuals may be invoked and evaluated.

The first case involves government support of a joint production initiative intended to simultaneously modernize transportation infrastructure and the private shipbuilding industry in British Columbia. The second case involves scientific stewardship and regulatory innovations required to establish an agricultural biotechnology industry in Canada. The third case features both subsidized production and regulatory innovations needed to promote green energy manufacturing and carbon neutral electricity generation in Ontario. Counterfactual analysis sheds light on how processes would have played out under different institutional arrangements. The analysis therefore yields insights relevant to comparative politics as well.

3 Public entrepreneurship in transportation: British Columbia's fast ferries

The early 1990s witnessed large-scale efforts to modernize British Columbia's transportation infrastructure. Plans included significant upgrades to the ferry infrastructure operated by the provincial crown corporation, BC Ferries. The impetus for upgrades was three-fold: most of the BC Ferries fleet was nearing age of decommission; increasing traffic between the Lower Mainland and Vancouver Island necessitated improved economies of scale to meet demand; and the domestic shipbuilding industry, which had historically supplied BC Ferries vessels, was in desperate need of orders.

To address the problems confronting the province, an entrepreneur and former Social Credit cabinet minister named Sam Bawlf mobilized to promote fast aluminum catamaran ferries. "Fast cats," as they came to be known, had only entered the commercial market in 1990 and were perceived by many to be the future of ferry industry. As a first

order of business, Bawlf incorporated a private entity called Cancat Catamaran upon acquiring a vessel design license from the Australian aluminum shipbuilder, Incat, in 1989 (Bawlf 1991).

Yet, despite having connections in government, a proposal put forward by Bawlf to adopt fast ferry technology was rejected by the BC Ferries executive in 1990. Instead, the province opted to invest in steel mono-hulled 470 vehicle "super ferries." Bawlf then entered into talks with government to establish a private fast cat ferry system to complement the existing BC Ferries network (Bawlf 1991). However, bankruptcies by other private ferry operators cast doubt on whether the market was sufficiently large to accommodate both BC Ferries and private operators —a realization which precluded private entrepreneurship. With reference to the model causal process outlined in Figure 2, and as shown graphically in the supplement, Bawlf introduced aluminum catamarans as alternate dimension of choice to conventional steel ships, however, in the absence of government support, expected utilities in Equations 1 and 2 remained negative and winsets remained empty. The proposal was a dead letter.

After the New Democratic Party (NDP) won the November 1991 election under the leadership of Mike Harcourt with 68% of the legislative seats and 41% of the popular vote, cabinet went ahead with plans to build a second supper ferry in February 1992 over opposition to the super ferries program within the party. Yet, prior to the completion of the first super ferry, Bob Williams —director of the Crown Corporations Secretariat, head of the government transition team and vocal critic of super ferries— solicited Sam Bawlf to advise the NDP government on its Mid-Island Transportation Strategy. By 1993, fast ferries were again being considered for three reasons. First, the super ferries program did not meet its intended goal of creating a steady stream of orders for the ailing shipbuilding industry. Second, terminal congestion followed as an unintended consequence of the 470 vehicle super ferries. Third, entrepreneurial actors —namely Sam Bawlf and Bob Williams— recognized that change in government from Social Credit to the NDP posed a political opportunity.

Proponents of fast cats therefore had a convincing rationale for why the province ought to invest in the technology. As mentioned above, it was believed by many at the time that the industry was shifting toward aluminum hulled catamaran ships. Indeed, lack of demand for supper ferries suggested to some that the shipbuilding industry would need to undergo restructuring away from conventional mono-hulled steel ships toward fast aluminum catamarans if it was going to remain competitive. Practically, the speed advantages of fast cats would also permit more frequent sailings and therefore ease terminal congestion.

Notwithstanding a plausible rationale, the capital restructuring required to shift BC Ferries and the shipbuilding industry toward the new vessel design would be both risky and costly. Accordingly, there remained considerable wariness on the part of the BC Ferries executive and the shipbuilding industry toward fast cats (BC Ferries 1996). Capital and retraining costs required to transition from a completely steel-based industry toward

aluminum welding and fabrication would therefore need to be absorbed by the public. Moreover, although BC Ferries was a crown corporation, its executive had been responsible for the corporation's debt since 1990 and was therefore loath to invest in untried technology. When the costs of a venture preclude voluntary collective action, mobilization requires a public entrepreneur.

The condition was satisfied in September 1993 when Finance Minister Glen Clark was shuffled to the new Ministry of Employment and Investment, which became the ministry responsible for the Crown Corporations Secretariat. After undertaking an information gathering mission to Europe in early 1994, Clark proposed that BC Ferries move ahead with fast cat technology. Executives at BC Ferries continued to express reservations, however, and opted instead to conduct trials with a leased vessel (Morfitt 1999). The Crown Corporations Secretariat then took control of the BC Ferries capital plan in March 1994 and submitted a proposal to cabinet justifying investment in fast ferries as a complement to the government's industrial policy goals (BC Premier's Office 1994).

Overcoming the BC Ferries veto was but half the battle, as the Treasury Board also expressed doubts about cost and technological feasibility. Although the Treasury Board eventually approved the project in principle in June 1994, it stipulated that BC Ferries would be "required to submit specific vessel replacement/acquisition and terminal upgrade proposals to the Treasury Board" (BC Treasury Board 1994). Clark's deputy, Frank Rhodes, was then re-instated in July 1994 to his previous position as President and CEO of BC Ferries to oversee the implementation of the capital plan. At the same time, another proponent of fast ferries, former General Manager and Chief Operations Officer of Vancouver Shipyards, Tom Ward, was appointed to BC Ferries as Senior Vice President of Engineering and Construction.

Although a design was approved for a $70 million vessel, competitive bids from the shipbuilding industry failed to materialize, as none of the province's shipyards was willing to assume the risk (BC Ferries 1996). Although "never intended" and "created out of necessity" according to one of the decisionmakers involved, Catamaran Ferries International was established via Order in Council in December 1995 as a subsidiary of BC Ferries. Its mandate included undertaking the vessels' final assembly, coordinating a consortium of private shipyards tasked with fabricating modular components, and absorbing marketing costs for the purpose of securing future orders for fast cats (thereby increasing the probability of creating a viable industry $-p(x)$ in Equations 1 and 2). As mobilization concluded and production began, entrepreneurial functions shifted to Tom Ward and Frank Rhodes, both of whom were assigned management positions at Catamaran Ferries International.

Incidentally, Glen Clark assumed the position of first minister following Premier Harcourt's resignation in the wake of the "bingo-gate" scandal in February 1996. An election followed in May, in which the NDP was reduced to 52% of the legislative seats and 39% of the popular vote (compared to 42% for the Liberal opposition). Immediately

after the election, grim revenue projections led the Treasury Board to implement a freeze on capital spending. However, political maneuvering exempted fast ferries from the freeze under auspices that money had already been spent and was otherwise committed (BC Premier's Office 1996).

As the program got underway, rumors about delays, cost overruns, and technical issues regarding vessel design began to surface. Although contributions from private shipyards were separable, technological uncertainty precluded complete contracts, necessitating cost-plus contracts that made the project vulnerable to opportunism on the part of the shipyards (BC Ferries 1997, see supplement). Recall from the discussion surrounding Figure 3 that opportunism may be mitigated by either monitoring or cooperative norms, the latter of which the project's managers apparently could not instill. Rather, the project's managers noted in early 1997 that "protracted labour negotiations have had an adverse effect" at one of the shipyards, exacerbated by "a lack of drive to improve shop floor efficiencies" (BC Ferries 1998; Catamaran Ferries International 1997a). Although monitoring remained an option, incomplete contracts made it difficult to specify performance requirements. After several attempts to discipline the problematic yard, it was determined that the solution was to remove it from the project entirely (Catamaran Ferries International 1997b). These plans were never executed, however.

Sources recall that it was at this time, in April 1997, that members of the board of directors at Catamaran Ferries International "wrote a long letter detailing concerns about the fast ferries," which included plans to cut the problematic shipyard from the project on the charge that the yard's management was engaging in free-riding and opportunistic rent-seeking. Ironically, an independent board had been put in place "to establish an oversight body," yet it was asked to resign at the behest of Frank Rhodes the same day it reported its concerns with the project and plans to get it back on track. Tellingly, the idea of cutting the problem yard from the project was not broached by the new board of directors, which consisted of BC Ferries personnel and Tom Ward who, recall, had close connections to shipbuilders. In the end, cost overruns and technical issues belied the success of the project, which contributed significantly to the NDP's loss of all but two of its legislative seats the 2001 election.

This above summary is illustrative of how collective action was mobilized and the terms of collective goods provision negotiated. The prospect of fast cats on BC ferry routes was first introduced by Sam Bawlf in 1990 as a dimension of choice with the intention of breaking a unidimensional equilibrium fixated on conventional steel ships. However, the BC Ferries executive was unreceptive, and the Social Credit government was apparently unwilling to intervene on Bawlf's behalf despite his political connections to the party. Although Bawlf found an unlikely ally in Bob Williamson following the NDP victory in 1991, unforeseen problems associated with conventional super ferries failed to prompt BC Ferries personnel to change its attitudes toward fast cats. Given the technological risk, the BC Ferries veto had to be overcome. This was accomplished when the minister of Employment and Investment, Glen Clark, permitted the Crown Corporations Secretariat

to wrestle control of the BC Ferries capital plan away from the BC Ferries executive. When the Treasury Board attempted to internalize risk by making expenditures contingent on approval of the BC Ferries board of directors, Clark appointed personnel sympathetic to fast ferries to management positions at BC Ferries. Finally, reservations on the part of shipbuilders regarding the technology were overcome with compensation out of the public purse. Yet, owing to ineffective monitoring, at least one private shipyard was able to extract high rents in exchange for its participation by engaging in opportunistic behaviour during production.

The events described would not have been possible had entrepreneurial actors not enjoyed the approval of successive first ministers. Counterfactually, it is clear that British Columbia's electoral system created conditions necessary for the project to proceed. Under a proportional representation system, it is unlikely the NDP would have had political support to initiate the program, much less see it through after losing the popular vote to the Liberals in 1996. Within government, had Glen Clark not enjoyed tacit approval of Premier Mike Harcourt in his efforts to nullify sources of resistance within BC Ferries and the Treasury Board, mobilization would have been unsuccessful. Moreover, had proponents been unable to exempt the fast ferries program from the 1996 Treasury Board freeze on capital expenditures, it would have been impossible to marshal the resources required to establish Catamaran Ferries International and thus coordinate private shipyards who were unwilling to accept the risk without ample public insurance. Instead, what would have otherwise amounted to negative utilities in Equations 1 and 2 were rendered positive thanks to the ability of public entrepreneurs to offset private risk by externalizing the project's costs with the first minister's approval.

4 Public entrepreneurship in biotechnology: the case of transgenic crops

Canadian governments began crafting explicit "biotechnology policy" in the early 1980s, not long after American scientists Stanley Cohen and Herbert Boyer first transplanted recombinant DNA between bacteria in 1973. From the beginning, prospects for transgenic crops were widely recognized in scientific and business circles, but the risk associated with new technology and related regulatory hurdles created a hold up problem (Phillips 2001). Moreover, federal jurisdiction over plant registration meant that any policy pursued by provincial governments would need to be consistent with those at the federal level.

Initial success in transgenic agricultural biotechnology revolved around four plants with relatively simple genomic structures: carnations, tobacco, petunias, and canola. As stated by a former bureaucrat, "canola was the only food crop, so it got a lot of people's attention." Two groups were particularly interested in the potential of transgenic canola: researchers at the Southern California start-up, Calgene, and researchers at Agriculture

Canada's Ottawa labs, the latter of whom worked with visiting industrial scientists as part of the Foreign Investment Review Agency (FIRA) mandate.

The Ottawa program was headed up by Agriculture Canada scientist, Wilf Keller, who developed a method for efficiently isolating genetic traits in canola plants using pollen cultures. Keller was well-acquainted with the president of Hoechst Canada, Maurice Delage, who was interested in developing plant tolerance to Hoechst's glufosinate herbicide. Researchers at Hoechst's headquarters in Germany had previously identified a strain of microbe that produced a glufosinate-detoxifying enzyme, but required a plant receptive to the microbe's genes. Given Agriculture Canada's abundant stock of canola germplasm, Delage and Keller arranged to have Hoechst industrial scientist, Michael Oelck, join the Ottawa lab in 1986 to work with Keller on inserting Hoechst's herbicide-resistant gene into canola germplasm owned by Agriculture Canada. The project met success in 1988, and was followed by field trials in 1990. Meanwhile, a Calgene scientist named Maurice Moloney developed transgenic techniques to render canola tolerant to glyphosate herbicide produced by Monsanto. This and other transgenic discoveries led to the acquisition of Calgene by Monsanto, which also pursued field trials in early 1990s.

Having successfully developed transgenic herbicide-resistant canola, the next obstacle involved registering the product for commercial cultivation. Because transgenic plants were a new technology, they had no commercial value prior to registration. Moreover, owing to their novelty, it was unclear what the regulatory process for agricultural biotechnology would entail. To facilitate commercialization of discoveries in biotechnology, the Saskatchewan Progressive Conservative government under the leadership of Grant Devine established a government-subsidized but independent non-profit entity called Ag-West Biotech in 1989. Interviewees indicate that Devine, an agricultural economist familiar with Keller's work in Ottawa, established Ag-West with the purpose of "raising capital for agricultural biotechnology start-ups, attracting investment in agricultural biotechnology and providing accurate information on agricultural biotechnology to the public and regulators."

With support from Ag-West, representatives from Monsanto and Hoechst's Canadian subsidiary, AgrEvo, lobbied Agriculture Canada and, subsequently, the federal Department of Health and Welfare to register herbicide-tolerant canola varieties. Although federal regulators were slower to approve the new technology than initially expected, the federal veto was more easily overcome in Canada than has proved to be the case in higher friction countries in Europe and East Asia. Indeed, obstacles to the commercialization of transgenic plants in Europe are reported to have led Hoechst to "pause on the decision" to pursue transgenic technology in the 1980s (Saskatchewan Agriculture Development and Diversification Secretariat 1989). As stated by an industrial scientist involved in the development of transgenic canola, "there's no point in being a GM [genetic-modification] company based in Germany, where you can't even test any material in the field, let alone have an expectation to sell the product to growers."

In Canada, while groups dissatisfied with the regulation of transgenic crops may have been partly responsible for adding hurdles to the regulatory process, they have had little success in overturning policy. Every major political party has presided over agricultural biotechnology policy at either the provincial or federal level, and none has implemented major reforms despite having the means and opportunity to do so. Aside from taking grievances to an alternate level of government, venue shopping in Canada typically involves recourse to the courts (Pralle 2003). Yet, when the Saskatchewan Organic Directorate filed a class action in 2003 against Monsanto and Aventis (which acquired AgrEvo in 1999) under the aegis that airborne genetically-modified material contaminated organic fields, thereby rendering crops worthless as an export to organic markets, the Saskatchewan Court of Appeal dismissed the application to certify the class and the Supreme Court of Canada declined to hear it.

This case highlights the fact that public entrepreneurs are not necessarily politicians or bureaucrats but rather sometimes private actors with close connections to government. Proximity to policy levers does not however negate the fact that public entrepreneurs are ineffectual without the support of first ministers, as it is they who ultimately approve or deny cost diffusion required for public entrepreneurship. In the case of transgenic crops, externalities came in the form of financial costs involved in coordinating research, transaction costs incurred lobbying federal regulators, and (arguably) environmental damages sustained by organic producers. Some of these externalities have run afoul of veto players in more representative political systems where transgenic crops are forbidden. Although governments in this case took steps to ensure that some of the financial costs were internalized by industry actors —by legislating industry levies to supplement agricultural research, for instance— the totality of costs could not be absorbed by industry interests alone. In particular, technological and regulatory uncertainty posed hold up problems that forestalled private investment. For these reasons, public entrepreneurship with first ministers' approval factors large in the story of the collective action required to bring transgenic crops to market in Canada.

5 Public entrepreneurship in energy: greening Ontario

In 2008, the government of Ontario began rolling out an aggressive policy to promote renewable energy. Reified by the McGuinty Liberals' 2009 Green Energy and Green Economy Act, the policy revolved around a feed-in tariff which offered above-market rates for electricity generated from renewable sources, conditional on local content provisions (i.e., that power be generated using equipment manufactured in Ontario). Although the policy was the centrepiece of the government's climate strategy, it was also devised as a response to what one anonymous official called "the prospect of the near total collapse of the automotive industry."

Yet sources agree that, at the time local content requirements were devised, the province lacked manufacturing investment required to supply electricity producers with Ontario-made equipment. To overcome inadequate manufacturing capacity, representatives from the Ontario Ministry and Energy and Infrastructure entered investment negotiations in 2008 with a consortium consisting of the Korea Electric Power Operator (KEPCO) and Samsung C&T. Although the proposal is said to have originated in the Premier's Office, it was promptly assigned to Energy and Infrastructure at which point cabinet minister George Smitherman assumed the role of public entrepreneur. As Smitherman puts it, "I was an economic nationalist before Trump, and I had concluded that, if we were going to make a big play in Green Energy, it needed to have an element of industrial policy" (Smitherman 2019: 137-138).

Per its name, the Green Energy and Green Economy Act was simultaneously an energy and economic development bill; nevertheless, the so-called "Samsung deal" was initialized without input from the Ministry of Economic Development and Trade. Conflict between the ministries came to a head when Smitherman submitted the Samsung proposal to cabinet in October 2009. While cabinet documents remain classified until 2029, sources indicate contention was focused on three aspects of the policy: the feed-in tariff approach preferred by Energy and Infrastructure, the "scale of the arrangement with Samsung" and "the process by which it was arrived at." Objections at the cabinet level notwithstanding, the item is reported to have gone through with Premier McGuinty's support.

Smitherman left provincial politics shortly after cabinet's decision to proceed with what would become the Green Energy Investment Agreement between the Province of Ontario and the "Korean consortium" as it is called in policy documents. The terms of the agreement, which were signed in January 2010 and executed by an "implementation task force" consisting of representatives from Energy and Infrastructure and the Ontario Power Authority, included above-market electricity rates consistent with those established by the Green Energy Act as well as "economic development adders" included to incentivize the establishment of four equipment manufacturing facilities in the province. In all, the province agreed to transfer $10.5 billion to the Korean consortium over twenty years on a per-kilowatt basis in exchange for 2,500 megawatts renewable generating capacity, four manufacturing centres, and nine hundred full-time jobs (Ontario Ministry of Energy 2013).

Controversy ensued regarding wind tower siting, scarce transmission capacity and related difficulties experienced by smaller generators with respect to capitalizing on incentives established by the feed-in tariff. While above-market rates and economic adders clearly constitute cost externalization, clauses in the Green Energy Act which removed local governments' authority to veto wind tower siting also enabled the province to impose non-monetary externalities.

The Green Energy Investment Agreement was scaled back on two occasions —in July 2011 and June 2013— as a consequence of effective monitoring of the terms of the

agreement, which stipulated that the contract between the province and the Korean consortium could be revised if initial deadlines were not met. Importantly, delays resulted primarily from public backlash, which included a lawsuit seeking to prevent wind tower siting organized by the community opposition group Wind Concerns Ontario. In response to resistance to wind tower siting, the province abandoned plans to develop offshore wind power generation in the Great Lakes and made concessions with respect to rates, wind tower setbacks, and compensation to households within one kilometer of wind turbines. Local content requirements were also dropped from the agreement in May 2013 when the World Trade Organization ruled that local content requirements were in contravention of international trade rules.

Counterfactually, it is noteworthy that the McGuinty liberals were able to pursue the Green Energy and Green Economy Act and the Green Energy Investment Agreement with only 42% of the popular vote. Although it is likely that these policies would have still seen the light of day under an alternate electoral system, the terms of the Green Energy Investment Agreement would have almost certainly been different. Indeed, reservations about the agreement were pronounced among the opposition parties, within the Liberal caucus, and even inside McGuinty's cabinet. Moreover, had the executive been prevented from overriding local resistance to wind tower siting, the logistics of the plan would not have panned out. Instead, the policy played out as it did because a political entrepreneur, George Smitherman, enjoyed the support of the first minister, Dalton McGuinty, who had the authority to approve both the regulations and monetary incentives necessary to mobilize the Korean consortium. A favourable institutional environment permitted cost diffusion necessary to make the venture viable.

5 Conclusion

Although existing frameworks for studying public entrepreneurship identify variables representative of means, motive, and opportunity, there remains a tendency to equate too much variance to the residual —that is, to attribute too many outcomes to serendipity (Kingdon 1984; Cairney 2018). Explanation requires simple, falsifiable hypotheses. To that end, social scientists have turned their attention toward modelling causal mechanisms (Checkel & Bennett 2015). Yet, vagueness continues to surround the identity, motivation and function of causal agents (cf. Schneider & Teske 1992). It is not enough to simply label causal agents entrepreneurs. Rather, it is necessary to specify what the process of entrepreneurship entails.

I have argued that entrepreneurship should be understood as a singular concept, regardless of whether the subject matter is predominantly political or economic in nature. As with any social phenomenon, entrepreneurship can be understood as a function of preferences and institutions. Regarding preferences, the economic literature on innovation highlights actors' incentive to pursue entrepreneurial rents from innovation, conceived in terms of surplus and profit (Knight 1921; Schumpeter 1939). Regarding

institutions, the political economy and public policy literature takes as its starting point the arrangement of veto players, and builds from there (Ostrom 2005).

Social choice is facilitated by public entrepreneurs to the extent that these actors are able to marshal resources and reallocate costs that would otherwise inhibit innovation (Buchanan & Tullock 1962). The ability of political principals to authorize the imposition of externalities is a function of decision rules, which are in turn a function of the representativeness of political systems. In jurisdictions characterized by high friction among veto players, public entrepreneurs are constrained by the fact that policy change requires widespread approval (Tsebelis 2002). Such constraints scarcely obtain in Canada, relatively-speaking, because first ministers hold considerable veto power (Savoie 1999). Consequently, public entrepreneurs with the support of Canadian first ministers can be very effectual. Inversely, entrepreneurs stand little chance of executing their plans if they are opposed by first ministers. This is especially true if there are few opportunities to venue shop, as is generally the case in the Canadian political system.

The implication for comparative politics is that public entrepreneurs in Canada and other nominally liberal systems may pursue riskier schemes than is typical of their counterparts in more representative systems. This rather intuitive conclusion is consistent with well-known insights from comparative theory and research, such as that which finds innovation in low friction systems to be more radical than innovation in high friction systems (Hall & Soskice 2001); that which finds the distribution of resources in society to be more unequal in low friction systems compared to high friction systems (Lijphart 2012); and that which finds policy change in low friction systems to be more "punctuated" than policy change in high friction systems (Jones et al. 2009).

Although the correspondence between institutions and outcomes is established in comparative research, entrepreneurship as it pertains to causal mechanisms and causal agents is often implicit. An aim of this paper has been to showcase the value of an explicit theory of entrepreneurship. Such an approach is useful for distinguishing characteristics of public entrepreneurs from those exhibited by other entrepreneurial agents, namely the ability of public entrepreneurs to mobilize and coordinate ventures that could not otherwise be pursued. Comparison with complementary models of private and voluntary entrepreneurship can also assist in distinguishing between vicious and virtuous cost diffusion. These lessons may be helpful for designing institutions conducive to public investment when collective action corrects market failures, while simultaneously guarding against opportunistic rent-seeking.

The case studies analyzed in this paper indicate that policymaking stands to benefit from more careful cost-benefit analysis during policy initiation and more effective monitoring and enforcement during implementation. In the fast ferries and green energy cases, oversight mechanisms were circumvented by public entrepreneurs with the tacit approval of first ministers. In the case of transgenic crops, institutions were designed with the intention of maximizing societal benefit while minimizing public cost. Although too many impediments to expediency may undermine advantages germane to Canadian

institutions, sound ex ante analysis and monitoring are neither anathema nor foreign to Canada's liberal political economy or system of responsible government.

Alchian, Armen A. and Harold Demsetz. 1972. "Production, Information Costs, and Economic Organization." *The American Economic Review* 62 (5): 777–95.

Argyris, Chris, and Donald Schön. 1978. *Organizational Learning*. Reading, PA: Addison-Wesley.

Arrow, Kenneth J. 1951. *Social Choice and Individual Values*. New York: Wiley.

Axelrod, Robert M. 1997. *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration*. Princeton Studies in Complexity. Princeton, NJ: Princeton University Press.

Baumgartner, Frank R. and Bryan D. Jones. 1993. *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.

Baumgartner, Frank R. 2016. "Agenda Setting in Comparative Perspective." *Perspectives on Politics* 14 (02): 456–60.

BC Ferries. 1996. "Fast Ferry Program Scope Description." BC Ferries Corporate Archives.

BC Ferries. 1997. "BC Ferries Internal Audit Report On Catamaran Ferries International, 12 November 1997." BC Ferries Corporate Archives.

BC Ferries. 1998. "BCFC and CFI Fast Ferry Program Forecast Level Costs," 31 December 1998." BC Ferries Corporate Archives.

BC Premier's Office. 1994. "Cabinet Submission: BC Ferries Ten Year Capital Plan." British Columbia Provincial Archives.

BC Premier's Office. 1996. "Cabinet Submission: Strategic Plan for BC Ferries." British Columbia Provincial Archives.

BC Treasury Board. 1994. "Treasury Board Minutes: BCFC Ten Year Capital Plan." British Columbia Provincial Archives.

Black, Duncan. 1958. *The Theory of Committees and Elections*. Cambridge: Cambridge University Press.

Blyth, Mark. 2003. "Structures Do Not Come with an Instruction Sheet: Interests, Ideas, and Progress in Political Science." *Perspectives on Politics* 1 (4): 695–706.

Blyth, Mark. 2007. "Powering, Puzzling, or Persuading? The Mechanisms of Building Institutional Orders." *International Studies Quarterly* 51 (4): 761–77.

Buchanan, J, and G Tullock. 1962. *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor, MI: University of Michigan Press.

Cairney, Paul. 2018. "Three Habits of Successful Policy Entrepreneurs." *Policy and Politics* 46 (2): 199–215.

Casson, Mark. 1982. *The Entrepreneur: An Economic Theory*. Totowa, NJ: Barnes & Noble.

Catamaran Ferries International. 1997a. "Correspondence from Tom Ward to Allen Fowlis, 28 February 1997." BC Ferries Corporate Archives.

Catamaran Ferries International. 1997b. "Board of Directors Minutes, 17 April." BC Ferries Corporate Archives.

Checkel, Jeffrey T. and Andrew Bennett, eds. 2015. *Process Tracing: From Metaphor to Analytic Tool*. Strategies for Social Inquiry. Cambridge: Cambridge University Press.
Clark, John B. 1899. *The Distribution of Wealth: A Theory of Wages, Interest and Profits*. New York: Macmillan.
Cox, Gary W. 1990. "Centripetal and Centrifugal Incentives in Electoral Systems." *American Journal of Political Science* 34 (4): 903–35.
Cyert, Richard M. and James G. March. 1964. *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.
Dixit, Avinash K., Susan Skeath, and David H. Reiley. 2015. *Games of Strategy*. Fourth edition. New York: W. W. Norton.
Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper & Row.
Grossman, Stanford J. and Oliver D. Hart. 1986. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration." *Journal of Political Economy* 94 (4): 691–719
Grossman, Gene M. and Elhanan Helpman. 2001. *Special Interest Politics*. Cambridge, Mass: MIT.
Hall, John A. 1993. "Ideas and the Social Sciences." *Ideas and Foreign Policy: Beliefs, Institutions, and Political Change*, 31–54.
Hardin, Russell. 1982. *Collective Action*. Baltimore: Johns Hopkins University Press.
Hirschman, Albert O. 1970. *Exit, Voice and Loyalty*.
Howlett, Michael. 2000. "Managing the 'Hollow State': Procedural Policy Instruments and Modern Governance." *Canadian Public Administration* 43 (4): 412–31.
Jones, Bryan D. 1994. *Reconceiving Decision-Making in Democratic Politics*. American Politics and Political Economy Series. University of Chicago Press.
Jones, Michael D., Mark K. McBeth and Elizabeth A. Shanahan. 2014. "Introducing the Narrative Policy Framework." In *The Science of Stories*, edited by Michael Jones D, Elizabeth A. Shanahan, and Mark K. McBeth, 1–26. New York: Palgrave Macmillan.
Jones, Michael D., Holly L. Peterson, Jonathan J. Pierce, Nicole Herweg, Amiel Bernal, Holly Lamberta Raney, and Nikolaos Zahariadis. 2016. "A River Runs through It: A Multiple Streams Meta-Review." *Policy Studies Journal* 44 (1): 13–36.
Kingdon, J. 1984. *Agendas, Alternatives and Public Policies*. Boston, MA: Little, Brown.
Klein, Benjamin, Robert G. Crawford, and Armen A. Alchian. 1978. "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process." *The Journal of Law & Economics* 21 (2): 297–326.
Knight, Frank H. 1921. *Risk, Uncertainty and Profit*. London School of Economics and Political Science. Series of Reprints of Scarce Tracts in Economic and Political Science, no. 16. Boston: Houghton Mifflin.
Laver, Michael, and Kenneth A. Shepsle. 1990. "Coalitions and Cabinet Government." *The American Political Science Review* 84 (3): 873–90.
Long, Norton E. 1958. "The Local Community as an Ecology of Games." *American Journal of Sociology* 64 (3): 251–61.
Lubell, Mark. 2013. "Governing Institutional Complexity: The Ecology of Games Framework." *Policy Studies Journal* 41 (3): 537–59.

Mahoney, Joseph T. 1992. “The Choice of Organizational Form: Vertical Financial Ownership versus Other Methods of Vertical Integration.” *Strategic Management Journal* 13 (8): 559–84.
Marwell, Gerald, and Pamela Oliver. 1993. *The Critical Mass in Collective Action: A Micro-Social Theory*. Studies in Rationality and Social Change. Cambridge: Cambridge University Press.
McKelvey, Richard D. 1979. “Intransitivities in Multidimensional Voting Models and Some Implications for Agenda Control.” *Journal of Economic Theory* 12 (3): 472–82.
Miller, Gary J. and Andrew B. Whitford. 2016. *Above Politics: Bureaucratic Discretion and Credible Commitment*. New York, NY: Cambridge University Press.
Moe, Terry M. 1980. *The Organization of Interests: Incentives and the Internal Dynamics of Political Interest Groups*. Chicago: University of Chicago Press.
North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. New York: Cambridge University Press.
Ontario Ministry of Energy. 2013. “Treasury Board/Management Board of Cabinet Request Assessment Notice.” http://fedeli.com/wp-content/uploads/2016/05/Confidential-GEIA-Documents.pdf
Ordeshook, Peter C. 1986. *Game Theory and Political Theory: An Introduction*. New York: Cambridge University Press.
Ostrom, Elinor. 2005. *Understanding Institutional Diversity*. Princeton: Princeton University Press.
Petridou, Evangelia, and Michael Mintrom. 2020. “A Research Agenda for the Study of Policy Entrepreneurs.” *Policy Studies Journal*, 49 (4): 943–67.
Phillips, Peter W. B. 2007. *Governing Transformative Technological Innovation: Who’s in Charge?* Northampton, MA: Edward Elgar.
Pralle, Sarah. B. 2003. “Venue Shopping, Political Strategy, and Policy Change: The Internationalization of Canadian Forest Advocacy.” *Journal of Public Policy* 23 (3): 233–60.
Riker, William H. 1982. *Liberalism against Populism: A Confrontation between the Theory of Democracy and the Theory of Social Choice*. Freeman San Francisco.
Riker, William H. 1986. *The Art of Political Manipulation*. New Haven, CT: Yale University Press.
Riker, William H. and Peter C. Ordeshook. 1968. “A Theory of the Calculus of Voting*.” *American Political Science Review* 62 (1): 25–42.
Riordan, Michael H. and Oliver E. Williamson. 1985. “Asset Specificity and Economic Organization.” *International Journal of Industrial Organization* 3 (4): 365–78.
Sabatier, Paul. 1988. “An Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning Therein.” *Policy Sciences* 21 (2/3): 129–68.
Saskatchewan Agriculture Development and Diversification Secretariat. 1989. “Canola Council of Canada Communiqué to Executive Director Agriculture Development and Diversification Secretariat, David Sim.” Provincial Archives of Saskatchewan, 2014-107 box 4.
Savoie, Donald. 1999. *Governing from the Centre: The Concentration of Power in Canadian Politics*. Toronto: University of Toronto Press.
Scharpf, Fritz. 1997. *Games Real Actors Play: Actor-Centered Institutionalism in Policy Research*. Boulder, CO: Westview Press.

Schmidt, Vivien. A. 2008. “Discursive Institutionalism: The Explanatory Power of Ideas and Discourse.” *Annual Review of Political Science* 11 (1): 303–26.
Schumpeter, Joseph A. 1939. *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*. New York: McGraw-Hill.
Shepsle, Kenneth A. 1979. “Institutional Arrangements and Equilibrium in Multidimensional Voting Models.” *American Journal of Political Science* 23 (1): 27–59.
Simon, Herbert A. 1947. *Administrative Behavior*. New York: Macmillan.
Smitherman, George. 2019. *Unconventional Candour*. Toronto: Dandurn.
Stone, Deborah A. 1989. “Causal Stories and the Formation of Policy Agendas.” *Political Science Quarterly* 104 (2): 281–300.
Tsebelis, George. 2002. *Veto Players: How Political Institutions Work*. Princeton, N.J.: Princeton University Press.
Tullock, Gordon. 1988. “Rents and Rent-Seeking.” In *The Political Economy of Rent Seeking*, edited by Charles K. Rowley, Robert D. Tollison and Gordon Tullock, 51–62. Boston, MA: Kluwer Academic Publishers.
Waldner, David. 2015. “What Makes Process Tracing Good? Causal Mechanisms, Causal Inference, and the Completeness Standard in Comparative Politics.” In *Process Tracing: From Metaphor to Analytic Tool*, edited by Jeffrey T. Checkel and Andrew Bennett, 126–52. Cambridge: Cambridge University Press.
Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*. New York: Free Press.