

THE COMPARATIVE GOVERNANCE OF COLLECTIVE ACTION

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Abstract

We examine the question of how collective action is best organized. Adopting a comparative institutional approach, we contend that the organization of collective action will incur transaction costs of discovery, bounding, adoption, enforcement, and probity, and discuss the antecedents of these costs. We then consider the relative efficacy of alternate institutional arrangements in minimizing these costs, arguing that discovery costs are lowest under for-profits, probity costs under non-profits, adoption costs under collectives, and bounding and enforcement costs under the state. These arguments are used to develop a theoretical framework defining the optimal governance arrangement for a given collective action situation. Our study thus extends institutional economics theory to the governance of collective action, and has implications for both social welfare and the non-market strategies of firms.

Keywords: collective action; transaction cost; institutional economics; non-market strategy; non-profit

Introduction

Collective action situations, i.e., situations where the actions of a set of actors jointly determines their shared outcomes, are an important source of market failure (Olson, 1965). Such situations are associated with externalities—each actor’s actions impact the outcomes of others, and each actor’s outcomes are impacted by the actions of others—with the result that if all actors pursue their own self-interest, the collective outcome achieved is sub-optimal; a situation poignantly referred to as the “tragedy of the commons” (Hardin, 1968; Cornes and Sandler, 1983). Because collective action situations involve problems of social cost, i.e., the possibility of harm from the action (or inaction) of others (Coase, 1960), they lie at the heart of initiatives aimed at improving social welfare—public health, environmental preservation, poverty alleviation, etc.—all of which require the cooperation of large numbers of diverse social actors to achieve superior shared outcomes.

Given the market failure associated with collective action problems, organizing collective action requires the development of non-market social institutions (Coase, 1960; Arrow, 1963).

Traditional economic theory argued that collective action would require coordination by a

centralized planning authority, typically the state (Pigou, 1920; Olson, 1965; Dixit and Olson, 2000). This assumption has increasingly come into question, however. A growing body of work provides theory and empirical evidence for the voluntary provision of public goods¹ by private for-profit and non-profit organizations (Cornes and Sandler, 1983; Bergstrom, Blume and Varian, 1986; Murdoch and Sandler, 1997; Besley and Ghatak, 2001; Morgan and Tumlinson, 2015). This work argues that the opportunistic tendency to free-ride may be overcome by factors such as reciprocity norms (Guttman, 1978; Sugden, 1984; Frey and Meier, 2004), impure altruism (Andreoni, 1988; 1990; Francois, 2000), moral motivation (Brekke, Kverndokk, and Nyborg, 2003) and organizational mission and identity (Besley and Ghatak, 2003; 2005; Akerlof and Kranton, 2005; Meier, 2007), all of which may drive actors to voluntarily commit to collective action. Relatedly, scholars examining collective governance arrangements have documented the potential for actors in collective action situations to self-organize into local or decentralized institutions to achieve superior collective outcomes (Ostrom, 1990; 2005; Ingram and Clay, 2000). In line with these insights, a growing body of work on corporate social responsibility (CSR) in the strategy literature has argued that firms may benefit from sharing value with their key stakeholders, either on their own (Porter and Kramer, 2006; Marquis and Lee, 2013; Bridoux and Stoelhorst, 2014) to differentiate from competitors (McWilliams and Siegel, 2000), or in collaboration with others (King and Lenox, 2000; King, Lenox, and Terlaak, 2005; Barnett and King, 2008; Reid and Toffel, 2009), and has documented a variety of mechanisms² through which such strategies result in superior financial performance (Waddock and Graves, 1997; Barnett and Salomon, 2012; Flammer, 2015).

¹ Some of this work focuses exclusively on the provision of public goods, which is a specific type of collective action problem (Besley and Ghatak, 2005).

² These include superior access to key inputs (Hart, 1995; Porter and Van der Linde, 1995; Hillman and Keim, 2001; Wang and Qian, 2011), greater loyalty from consumers (Casadesus-Masanell et al., 2009; Elfenbein and McManus, 2010; Servaes and Tamayo, 2013) and employees (Turban and Greening, 1997; Bode, Singh, and Rogan, 2015; Flammer and Luo, 2015; Burbano, 2016), lower capital costs (Mackey, Mackey and Barney, 2007; Cheng, Ioannou and Serafeim, 2014), and support from activists and communities (Baron, 2001; Baron and Diermeir, 2007; Henisz, Dorobantu and Nartey, 2014).

While much of this work sees such voluntary activities as welfare enhancing, with the CSR literature, for instance, generally assuming that by acting in socially responsible ways the firm is doing ‘good’, some recent work raises doubts about the benefit of private involvement in organizing collective action. This works point to the possibility of corporate provision crowding out provision by the state (Becker and Lindsay, 1994; Kotchen, 2006; Horvath and Powell, 2016) or by non-profits (Kaul and Luo, 2016), with CSR thus serving as a substitute rather than a complement to other forms of collective action. Such substitution of one institutional arrangement for another is especially concerning because, as a long tradition of work on institutions has pointed out, the choice of institutions is frequently determined by factors other than efficiency (DiMaggio and Powell, 1983; North, 1990), raising the possibility that more efficient arrangements may be substituted with less efficient ones (Olson and Zeckhauser, 1970), thus reducing social welfare (Kotchen, 2006; Kaul and Luo, 2016). In order to determine whether a given social initiative is truly beneficial, therefore, we need a theory of the comparative efficiency of alternate forms of collective action (Olson, 1986; Buchholtz and Konrad, 1995; Besley and Ghatak, 2001).

In this paper, we seek to develop such a theory, using a comparative institutional approach³ (Coase, 1937; 1960; Williamson, 1991; 1998) to evaluate the efficiency of alternate ways of organizing collective action. Specifically, we build on Coase’s seminal insight that the efficiency of alternate institutional arrangements will depend upon the transaction costs associated with them (Coase, 1937; 1960) and consider the various transaction costs associated with the organization of collective action, and the relative magnitude of these costs under different institutional arrangements. We argue that the successful organization of collective action requires the completion of five steps—definition of a solution, establishment of a common bound, acceptance of a common

³ As Coase puts it, “Economists who study problems of the firm habitually use an opportunity cost approach and compare the receipts obtained from a given combination of factors with alternative business arrangements. It would seem desirable to use a similar approach when dealing with questions of economic policy and to compare the total product yielded by alternative social arrangements” (Coase, 1960; p. 42).

solution, enforcement of commitments, and assessment of benefits—and each of these five steps is associated with a distinct set of transaction costs. The extent of these five types of costs is determined by the nature of the collective action situation: *discovery costs* are high where the solution is unknown or uncertain; *bounding costs* are high where the benefits from the collective action are hard to limit and preferences are homogenous; *adoption costs* are high where these benefits are subtractable; *enforcement costs* are high where actors' contributions to the collective action are hard to observe; and *probity costs* are high where the benefits from the collective action are difficult for the actors to assess.

Given these five types of transaction costs, we adopt a discriminating alignment approach (Williamson, 1998) to determine the most efficient governance form (i.e., one that minimizes the sum of transaction costs) given the attributes of the collective action situation. To determine this optimal form⁴, we examine four 'pure' governance forms—for-profit firms, non-profit organizations, collectives, and the state—and consider the relative efficacy of each of these forms in minimizing the five types of transaction costs above. We argue that for-profit governance is optimal for minimizing discovery costs, non-profit governance for minimizing probity costs, state governance for minimizing bounding costs, and collective governance for minimizing adoption costs; enforcement costs are lowest under state governance where the collective action is hard to limit or observe, but may be lower under collective governance otherwise.

This mapping between the transaction costs of organizing collective action and the relative effectiveness of different governance forms is used to develop a theoretical framework defining the optimal institutional arrangement given the characteristics of the collective action situation. Where a single type of transaction cost dominates, the optimal arrangement is the governance form that minimizes that cost: thus situations where the collective action solution is uncertain or unknown

⁴ Throughout the paper we use "optimal form" to mean the one with the lowest transaction costs compared to the feasible alternatives. As Williamson (1999) puts it, "because all feasible modes of organization are flawed, the strengths and weaknesses of each candidate mode need to be assessed comparatively" (p. 307).

(i.e., discovery costs are high) are best governed as for-profits, those that are illimitable (i.e., have high bounding costs) are best left to the state, while those that involve high probity costs are best handled by non-profits. Where multiple costs are salient, however, the optimal institutional arrangement is a hybrid of two or more governance forms.

By providing a comparative theory of the governance of collective action, our study advances research on collective action problems and social welfare. We move beyond a focus on any one approach to organizing collective action, and examine instead the conditions under which each of the various institutional arrangements studied by prior research may be optimal. In doing so, we offer a theoretical explanation for the coexistence of a variety of different non-market solutions—CSR initiatives, non-profits, community organizations, state intervention, etc.—suggesting that these may reflect optimal solutions to different types of social problems, each associated with a distinct set of transaction costs (Coase, 1937; 1960). Our study thus extends work in the NIE tradition (Coase, 1984; North, 1986; Williamson, 2000), applying the comparative approach championed by this tradition (Williamson, 1975; 1991; 1998) to compare alternate arrangements for dealing with social costs, as advocated by Ronald Coase over half a century ago (Coase, 1960).

At the same time, our study also contributes to the non-market strategy literature, responding to the call for more strategy research at the intersection of public and private interests (Mahoney, McGahan and Pitelis, 2009; George, McGahan and Prabhu, 2012). We contribute to the CSR literature by highlighting the relative efficiency of CSR in discovering and developing novel solutions to social problems, and suggesting that actions by for-profit firms may therefore be most useful in addressing social issues through entrepreneurship in the face of uncertainty (Agarwal et al., 2007; 2010; Klein et al., 2010). Further, by linking the benefits of CSR to the high-powered incentives associated with for-profits, our study suggests that not only may CSR efforts lead to superior long-term financial performance, but that it is only when they do so that such efforts are

likely to be socially beneficial. In providing a rationale for CSR activities based on social efficiency, we also define the boundary conditions for CSR, suggesting that CSR activities may only be sustainable in so far as they help solve a social problem in a way that is more efficient than alternative governance arrangements (Kaul and Luo, 2016). Similarly, our study also speaks to the literature on corporate political action (Hillman, Keim and Schuler, 2004; Oliver and Holzinger, 2008) highlighting conditions under which the firm may be better off pursuing political strategies rather than other forms of non-market intervention (Dorobantu, Kaul and Zelner, 2016) because state governance is comparatively socially efficient and therefore sustainable.

Our study also contributes to the study of organizations more generally, not only considering how the actions of for-profit firms impact the larger social system (Stern and Barley, 1996), but also examining the role of non-profit and hybrid organizations. We highlight the unique advantage of non-profit governance in lowering probity costs, and speak to recent literature which argues that the rationalization and professionalization of non-profits may be harmful to their social mission (Skocpol, 2003; Hwang and Powell, 2009; Ravitch, 2013). Moreover, our study compares and contrasts four alternate governance forms, and suggests conditions under which various combinations of these ‘pure’ forms may be optimal, thus providing a novel theoretical foundation for work examining hybrid forms of social action (Battilana and Lee, 2014).

In sum, our framework offers a more comprehensive theoretical basis for starting to think about the role of alternate institutional arrangements and their impact on social welfare, opening the way for further theoretical and empirical research on this important topic.

The organization of collective action

The potential for collective action exists in situations where the actions of a set of actors jointly determine a common outcome, the benefits and costs from which are then shared among these actors. Since outcomes are jointly determined, and benefits are shared, all actors could be

better off in such a situation if they acted cooperatively. However, because each actor can benefit from the actions of other, each actor has an incentive to free ride; and because the outcomes of each actor depend on others' actions, every actor has reason to fear free-riding. As a result, self-interested actors in such situations may undersupply effort, leading to a collective outcome that is worse for all actors compared to the cooperative optimum (Olson, 1965; Hardin, 1968; Ostrom, 1990).

Collective action situations are widely prevalent, including, as recent strategy research has pointed out, in intra- and inter-organizational contexts (Arend and Seale, 2005; Agarwal, Croson and Mahoney, 2010; Corredor, Mahoney and Somaya, 2015). What makes the study of collective action especially salient, however, is its importance to addressing issues of social welfare. By definition, situations where the outcomes of each actor are influenced by the actions of others are situations involving social costs (Coase, 1960), and the problem of free-riding and consequent undersupply is especially salient for the provision and management of public goods and common pool resources, i.e., goods and resources that are non-excludable (Ostrom, 2005). Determining the most efficient and effective way to enable collective action is thus especially important to solving a variety of social ills such as poverty, illiteracy, pollution, and public health issues, and thus to ensuring the welfare of society as a whole.

In order to examine the optimal means of organizing collective action theoretically, we begin by defining the key steps involved in bringing a set of actors together to achieve a cooperative outcome. Specifically, we contend that any collective action requires the successful completion of five steps, which we proceed to describe in more detail.

To begin with, achieving collective action requires the *definition of a common solution*. While traditional analysis of collective action problems often begins with the assumption that the relevant parameters of the situation are given and known to all actors (Ostrom, 1990), many collective action situations in the real world may be associated with substantial uncertainty (Knight, 1921), with actors

being either unaware of the full range of potential actions or outcomes, or of the probabilities connecting actions to outcomes (Ostrom and Ostrom, 1971). In many instances the fundamental parameters of the situation—such as the extent of resources available, or the full set of relevant actors—may be initially unknown or imperfectly known, so that organizing collective action may require an initial process of information gathering and discovery. So, for instance, in the case of California groundwater basins described in Ostrom (1990), the various actors taking water from the groundwater basin are initially ignorant of its total capacity and scope; information without which it would be impossible to define optimal levels of water withdrawal. And even if the relevant parameters of the situation are known, actors may lack a clear understanding of how to best achieve a common outcome. So, for instance, while the need for better education software may be well understood, educators may not have a good way to evaluate, or innovators a good way to establish, the value of software products (Chatterji and Jones, 2012). Before all relevant actors can commit to acting cooperatively, then, there must be a process of innovation and discovery to arrive at a viable solution by determining and comparing the payouts from various alternate actions and defining the set of such actions that will yield the greatest benefit to the relevant actors.

A second step in organizing collective action is the *establishment of common bounds*. This involves ensuring that all relevant actors are committed to cooperating with each other, and that the means to exclude those who choose not to cooperate exist. So long as some actors can impact the group outcome, or share in its benefits, without participating in the collective action, a cooperative outcome is unlikely to be achieved (Dixit and Olson, 2000). The inability to establish bounds will mean on the one hand, that those who do act cooperatively may fail to realize the full benefits of their cooperation, lowering their incentive to cooperate, and on the other hand that those who defect from the group will be seen to prosper, increasing the incentive of others to also defect. As a result, the failure to establish strong bounds will sabotage the collective action (Dixit and Olson,

2000). This is the case, for instance, in the context of fishing communities that may be willing to agree on responsible fishing norms among themselves, but cannot keep others from outside their community from fishing in the same waters, effectively depleting their common supply (Ostrom, 1990). The establishment of effective bounds is thus a key second step in organizing collective action.

A closely related third step is the *acceptance of a common solution*. Even if all relevant actors agree to cooperate with each other, they may still disagree on what such cooperation involves. Diverse actors may have differing or even divergent beliefs and interests, and may therefore prefer distinct solutions to their shared situation. Even with homogenous or compatible preferences, moreover, actors may still face an assurance problem (Sen, 1967; Sugden, 1984) in arriving at a coordinated solution. In order for collective action to succeed, however, the various actors must agree and commit to a common set of actions, as well as to a shared set of rules, i.e., to the constitution governing the collective action (Ostrom and Ostrom, 1971; Ostrom, 1990). So, for instance, while representatives from various countries may agree to attend a multilateral summit to discuss environmental issues that affect them all, they will only cooperate on these issues if they are able to arrive at a shared agreement, and such an agreement is likely to require a lengthy process of discussion and negotiation, even after all relevant parties have agreed to come to the table.

Once the relevant actors have committed to a common course of action, the next step is to *enforce commitments*. This requires monitoring actors to ensure that they are, in fact, honoring their commitment to the collective, and appropriately penalizing those who fail to do so. If actors are able to renege on their commitments while remaining within the collective then the cooperative outcome shall not be fully achieved, and other actors learning of such free-riding will be tempted to renege as well. So, for instance, if firms that have entered a voluntary agreement to reduce greenhouse

emissions find that those who do not honor their commitments are not strongly sanctioned, they may also choose to free-ride, sabotaging the entire initiative (Delmas and Montes-Sancho, 2010).

A final step in organizing collective action is the *assessment of benefits*. For the collective action to prove sustainable, the cooperating actors must be able to recognize and confirm the benefits from their cooperation, otherwise they will have little incentive to continue to cooperate. Where the collective outcomes are shared directly with the actors, and where the benefits are clearly understood—for instance, in the realization of higher wages by labor unions, or in the higher yields achieved by agricultural cooperatives—this assessment of benefits is automatic. But there are instances where the cooperating actors may not be able to assure themselves of the benefits of their actions so easily. Many types of collective action, especially those concerned with social welfare, result in indirect benefits, i.e., the outcome of the collective action is to benefit someone other than the cooperating actors, who then derive an indirect benefit from the welfare of these recipients (Becker, 1974; Kaul and Luo, 2016). So, for instance, people may act cooperatively to preserve the earth's environment for future generations; or they may donate to non-profit causes that aim to curb animal cruelty in farming and tourism; or they may contribute to public health initiatives in foreign countries in order to promote fairness or defend against future pandemics. In such cases, those undertaking the collective action will not automatically observe the benefits of their actions, and must either expend time and effort confirming that their actions are, in fact, producing the desired result, or rely on third parties to confirm this for them. A second case where assessment of benefits may be an issue is in the case of 'merit goods' (Musgrave, 1959; Head, 1966; Besley, 1988), where individuals may lack the knowledge or expertise to properly assess the value of what they are receiving, so that they may be unable to accurately assess the utility of the goods or services they receive (Arrow, 1963). So, for instance, parents who have received no formal schooling themselves may find it difficult to evaluate the quality of schooling received by their children, and may need to

be assured of this by a trusted third party with the relevant expertise (Beckman and Gatewood, 2011). Similarly, patient satisfaction with medical care may be weakly (or even negatively) correlated with the outcomes of such care (Fenton et al., 2012). In many cases, then, the successful continuation of collective action will require that the benefits of such action be assessed and confirmed by a responsible third party. Figure 1 summarizes the five steps in organizing collective action.

Insert Figure 1 about here

Transaction costs of collective action

Each of the five steps above is associated with a set of transaction costs, which are summarized in Figure 1. The greater the cost associated with a step, the more challenging that step is to complete, or, in other words, the greater the likelihood that the failure to act collectively can be traced to that step. Consider, first, the definition of a common solution. This step will be associated with *discovery costs*, which will be low where a tried and tested solution to the collective action problem exists, and will increase as the appropriate set of actions to maximize social welfare become increasingly uncertain. Several factors are likely to drive discovery costs. First, discovery costs will be high where the parameters of the situation are initially uncertain or unknown. For example, an entrepreneur looking to start a ride-sharing service (e.g., Uber) would have no way of judging the demand for such a service *ex ante*. Second, discovery costs will be high where the technology to produce the desired outcome does not exist, and must be developed through a process of experimentation. This may involve technological innovation, as in the case of Potscosecha program to advance food security in Central America, which required the design of a new type of metal silo for use by households (Sonka et al., 2014), or innovation in terms of delivery models, such as in the development of novel irrigation arrangements on the left bank of Gal Oya (Ostrom, 1990, pp. 167-173). Finally, discovery costs may also be high where the needs of actors are heterogeneous and

evolving. Other things being equal, heterogeneous needs and interests of actors within a collective will increase the difficulty of devising a solution that serves all of these diverse interests. Moreover, changes in the needs of actors over time, or variation in the conditions across collective action contexts will mean that existing solutions that have proven successful in the past or in other contexts may not be directly applicable, and may need to be modified. So, for instance, decentralized and participatory public health initiatives that have proven successful in Asia or Latin America may fail to achieve desired results in Africa because of differences in the political and cultural context (Golooba-Mutebi, 2005). Solving the same collective action problem in these countries will require experimentation to develop alternate models, increasing discovery costs.

Next, consider the establishment of common boundaries. This step is associated with *bounding costs*, which are the costs of both ensuring that all those whose actions impact the shared outcome are included in the collective action, and that only those whose actions contribute to the shared outcome benefit from it. The extent of these costs depends upon the limitability of the collective action benefits, i.e., the extent to which clearly defensible limits naturally exist or can be easily defined⁵ around the relevant actors and resources. So, for instance, lighthouses are relatively limitable, since they are primarily useful only to those sailing in and out of neighboring ports (Coase, 1974). In comparison, initiatives to reduce air pollution have low limitability, because the air quality in any given location is influenced by pollution in other locations, and the benefits of lower pollution in one location are shared with many other locations. Similarly, labor unions have high limitability because their benefits are generally bound to those employed by a particular organization or industry⁶. In addition to limitability, bounding costs may also depend upon the extent to which

⁵ Certain forms of collective action (e.g., club goods) may have limits that are endogenously determined, i.e., the domain of who benefits may be determined by the collective action itself (Olson, 1986).

⁶ Our concept of limitability is quite similar to the concept of excludability used to distinguish public and common-pool goods from private and toll goods (Ostrom, 2005; 2010), except that, as we discuss in more detail below, the ability to exclude also depends upon the observability of actors' contributions

preferences among actors are homogenous, with bounding costs being lower where actors have more diverse preferences, because in such cases those who free-ride will have to accept less preferable collective outcomes, making them more likely to voluntarily participate (Stigler, 1974)⁷.

The third step in organizing collective action is acceptance of a common solution, which is associated with *adoption costs*, i.e., the costs of getting all actors within the established bounds to agree to abide by a specific solution. A key driver of adoption costs is the subtractability of the outcomes from the collective action. Where the benefits from the collective action are highly subtractable, meaning that the benefits to each actor come at a cost to the others (Ostrom, 2005; 2010), then adoption costs are likely to be high. This is because with a subtractable outcome, actors will be concerned not only with the extent of the shared value created, but also with the share of that value they are able to appropriate, so that negotiations over the common solution are likely to be more contentious. In contrast, where the shared benefit is largely non-subtractable, meaning that each actor can enjoy the benefits from the collective action without depriving other actors of the same benefit, then actors only need to agree on the solution that will maximize the total outcome without being concerned with negotiating for their share of it. Thus it may be easier for a set of neighbors to agree to share the cost of an approach road that serves all their homes, than to agree on sharing the cost of a shared vacation home, because the latter will require negotiation over how time in the vacation home is to be allocated, who gets priority, etc. Relatedly, heterogeneous preferences may also raise adoption costs, since differences in preferences would make choices that benefited one set of actors ‘costly’ to others in that they would not align with their preferences (Marcus and Fremeth, 2016). In addition to subtractability, adoption costs may decrease with the level of actor information, since well-informed actors will require less initial education. They may also decrease with the extent to which relevant actors are embedded in a network of pre-existing social ties (Granovetter, 1985;

⁷ In the extreme, differences in preferences may form the basis of limitability, with actors whose preferences are entirely orthogonal to those of others being excluded from the benefits of any collective action undertaken by those others.

Jones et al., 1997; Uzzi, 1997) since such ties will foster trust and ease communication amongst actors.

Once a common solution is agreed upon, successful collective action will involve *enforcement costs*, which include both the costs of monitoring actors to ensure that they are complying with the commitments they made as part of the collective agreement, and the costs of penalizing actors who fail to do so. The severity of these enforcement costs will depend upon how difficult it is to observe actors' compliance with the agreement. Where other actors can easily observe compliance or defection by the focal actor, such as in the case of farmers in adjacent fields (Ostrom, 1990), or through ratings on online platforms, enforcement costs are low. Conversely, where the contributions of cooperating actors are hard to observe, enforcing collective action will require either the establishment of an elaborate third party monitoring system (Ostrom, 1990), or the sharing of some of the value created in order to incentivize compliance (Holmstrom, 1979), or some combination of both. In either case, enforcement costs will be higher, the lower the observability of contributions by the cooperating actors. In addition, enforcement costs will also decrease with the severity of the penalty the actors face for non-compliance, with actors who face greater penalties being less likely to try to free ride, lowering enforcement costs. As mentioned above, enforcement costs are related to the concept of excludability (Ostrom, 2005). Excludability requires both the inclusion of only those who commit to cooperation (i.e., establishment of common bounds), and the exclusion of those who commit but do not subsequently cooperate (i.e., enforcement of commitments). We can thus think of the combination of limitability and observability (and therefore the sum of bounding and enforcement costs) as together determining the excludability of a given resource.

Finally, the successful completion of collective action may entail *probity costs*, associated with the assessment of benefits. As defined by Williamson (1999), probity refers to the "loyalty and rectitude with which a...transaction is discharged" (p. 322), and is associated with loyalty to the

mission, process integrity, and professional expertise. While Williamson (1999) associates probity exclusively with sovereign transactions, we take a broader view and contend that probity hazards exist wherever information asymmetry makes it difficult for actors to assess the benefits they receive in exchange for their contributions (Anheier and Ben-Ner, 1997). In the absence of such information asymmetry, the loyalty and rectitude of transactions could be enforced by market discipline or by contracts (Hansmann, 1980); it is only where the implications of what is being done are not immediately understood that the need for probity arises. Probity costs may be high, therefore, when the benefits of the collective action are partially or entirely indirect, i.e., the direct benefit of the collective action is received by someone other than the actors participating in the collective action, who derive an indirect benefit from the welfare of these recipients. So, for instance, consumers paying for daycare services for their children or nursing homes for the elderly, may be concerned about the quality of the care their family members receive without being able to rely on their reports (Hansmann, 1987; Baum and Oliver, 1996). This problem may be especially severe where the benefits to the recipient are complex or hard to measure (Besley and Ghatak, 2005; Hwang and Powell, 2009).

Probity costs may also be high in the case of merit goods where the contributors to the collective action lack the expertise necessary to judge the utility of their choices, for instance, in assessing the benefits of health-care services or of higher education (Arrow, 1963). In some cases, moreover, the two effects may be combined. Thus, collective action initiatives aimed at improving outcomes for future generations frequently have high probity costs, both because future generations have, by definition, no direct voice of their own, and because predicting how today's actions will impact tomorrow's outcomes often requires specialized expertise. These two factors—the directness of the benefit from the collective action, and the expertise required to evaluate that benefit— together determine the assessability of the benefits from the collective action, i.e., the ease with

which cooperating actors can assess the benefits of their actions. Note that assessability is distinct from observability, because the former relates to collective action outcomes and is concerned with cooperating actors receiving the anticipated benefits, while the latter relates to collective action inputs and is concerned with cooperating actors honoring their commitments.

Comparative efficiency of alternate governance forms

Having examined the steps required to organize collective action, and the transaction costs associated with them, we next turn to consider how alternate institutional arrangements deal with these costs. Given systematic differences in the relative effectiveness of various institutional arrangements in minimizing these transaction costs (Ostrom and Ostrom, 1971), the most efficient arrangement for organizing collective action in a given situation is the one that deals most effectively with the transaction costs associated with that situation (Coase, 1937; 1960; Williamson, 1998).

We compare four ‘pure’ governance forms. First, collective action may be organized through the *state* (Pigou, 1920; Olson, 1965; Dixit and Olson, 2000). In this case, the collective action is centrally planned and implemented, with the state using its coercive authority to compel all relevant actors to participate, either by levying taxes or by putting in place formal regulations (North, 1990). Second, actors may self-organize into *collectives*, designing their own solution, creating a constitution of self-governing rules to which they voluntarily commit, and contributing resources and effort as required by this constitution to achieve a cooperative outcome (Ostrom, 1990; 2010).

In between these two extremes, we can consider two private arrangements for the provision of collective goods (Besley and Ghatak, 2005). *For-profit* firms may enable collective action by voluntarily providing collective goods and services, acting as conditional cooperators (Frey and Meier, 2004; Ostrom, 2005; Dorobantu et al., 2016) in the expectation of being rewarded for doing so by relevant stakeholders (e.g., customers, employees, shareholders, etc.). In this case, the collective action solution is planned and implemented within the for-profit hierarchy, but

contributions of resources or effort are provided by relevant actors on a voluntary basis. Such for-profit provision of collective goods thus represents a way for firms to benefit from the provision (abatement) of positive (negative) externalities, without being required to fully internalize the transaction (Demsetz, 1967; Alchian and Demsetz, 1972), with those who benefit from firm actions being motivated to contribute resources or effort either because of their special interest in the goods or services provided, or because the collective action is a by-product of their interaction with the firm (Olson, 1965).

Similarly, collective goods or services may also be provided by *non-profit* organizations (Hansmann, 1980; 1987; Rose-Ackerman, 1996; Anheier and Ben-Ner, 1997; Johnson and Prakash, 2006). As with for-profits, the collection action in this case is planned and implemented by the organization, in exchange for voluntary contributions of resources and effort by relevant actors⁸. Non-profits differ from for-profits, however, in that their objective in providing the collective good is not to make profit, but to serve a purpose or mission, and the incentives within the organization are designed accordingly (Clark and Wilson, 1961; Hansmann, 1980; Glaeser and Shleifer, 2001; Besley and Ghatak, 2003).

We compare and contrast these four alternate governance forms—*for-profit* organizations, *non-profit* organizations, *collectives*, and the *state*—in terms of their ability to limit each type of transaction cost associated with organizing collective action. First, consider discovery costs. We contend that *for-profit* organizational forms will best be able to minimize these costs, i.e., given an identical action situation, the costs of discovery will be lowest under *for-profit* governance than under any other form. As a substantial body of strategy research has argued, *for-profit* firms are well-suited to enabling knowledge recombination and innovation (Kogut and Zander, 1992; Grant, 1996; Liebeskind, 1996) and may find it easier to undertake experiments in the pursuit of new

⁸ A key difference between *collectives* and *non-profits* is that in the former the collective actors are members, while in the latter they are contributors (Clark and Wilson, 1961).

technologies and business models, than consensus-based governance forms such as collectives and the state. The state, in particular, may be at a disadvantage in situations where collective action situations require local expertise, which may prove both costly for the state to gather, and difficult for it to use (Ostrom, 1990; 2005). Moreover, public bureaucracies are associated with low-powered incentives and a lack of competition (Tirole, 1994; Williamson, 1999), which may help to restrict opportunism and capture, but also compromises their emphasis on efficiency improvement and innovation, with the result that slack resources within state governance may be used for uncertainty avoidance rather than innovation (Klein et al., 2013). The development of new and / or specialized solutions to collective action problems is thus better done privately rather than through the state or through a collective.

Moreover, even among private organizations, for-profits may have an advantage over non-profits. For one thing, a stronger focus on profit and the use of high powered-incentives will drive an emphasis on efficiency and effectiveness in choosing the best solution (Glaeser and Shleifer, 2001). Moreover, as work on dynamic transaction costs (Langlois, 1992; Langlois and Robertson, 1995) and entrepreneurship (Foss et al., 2008; Klein, 2008; Klein et al., 2010; Kaul, 2013) has argued, a key purpose of for-profit firms is to enable the exercise of subjective entrepreneurial judgment by allowing entrepreneurs to appropriate the value from their (ex ante uncertain and therefore non-contractible) innovations as residual claimants. Thus, for-profit firms may be more apt to take risks in the face of uncertainty (Knight, 1921). In contrast, non-profits have low-powered incentives and a less competitive orientation (Baum and Oliver, 1996; Glaeser and Shleifer, 2001) so they may have little incentive to take risks (Anheier and Ben-Ner, 1997) and may prefer to play it safe (Hansmann 1987). Moreover, the ideological or mission-based orientation of non-profits (Clark and Wilson, 1961; Rose-Ackermann, 1996) may make them less flexible (Besley and Ghatak, 2003; 2005; Akerloff and Kranton, 2005), as new ideas are evaluated not only for their efficiency, but also their

fit with the organization's mission, identity and values. In collective action situations where uncertainty is high, then, for-profit firms are the optimal vehicle for the discovery and development of new solutions.

Next, consider bounding costs. Clearly, the state has a substantial advantage in minimizing these costs simply because it alone has the authority and coercive power (Rangan et al., 2006; Klein et al., 2013) to define rules and regulations that not only exclude those who do not cooperate from the benefits of collective action, but also compel all relevant actors to participate in the collective action. This ability to compel participation is especially important, because while the other governance forms could certainly develop administrative and technological systems to exclude non-participants, they cannot really compel those whose actions impact their outcomes to participate if they choose not to. It is only through the action of the state (or the threat of such action) that the relevant actors may be forced to cooperate. So, for instance, in the West Basin water-rights negotiation described by Ostrom (Ostrom, 1990, pp. 114-123) the collaborating parties could do nothing to compel the city of Hawthorne to join their collective action, and it was only through the intercession of the courts that the successful management of the ground-water basin was made possible. *Ceteris paribus*, then, bounding costs will be lowest under state governance. Among the other three governance forms, bounding costs are likely to be similar, though organizations may have a slight advantage over collectives in so far as it may be easier to enforce exclusion given a stronger, more professional administrative system, and stronger reliance on financial incentives.

The characteristic of the state that allows it to minimize bounding costs—its power to bind all citizens—also results in high adoption costs of state governance. Because state governance is so widely binding, the solutions it adopts will generally require large-scale consensus across a plurality of actors, resulting in a political decision making process that is onerous and time-taking. This will be especially true where the collective action itself involves only a sub-set of citizens, because it will

mean that adoption requires the consent of those who have little understanding of, or interest in, the collective action problem. The involvement of irrelevant decision makers in the adoption process will mean substantial costs in educating these actors about the problem, or, equivalently, will lead to the choice of less efficient solutions due to the involvement of ill-informed decision makers (Coase, 1974). In such cases, adoption may also be needlessly lengthened because these actors will see little cause for urgency, and may wish to prioritize other matters of more significance to them. The state may also find it more challenging to deal with heterogeneous preferences of actors, which make it difficult, if not impossible, to agree on a mutually agreeable solution (Arrow, 1951; Sen, 1999). Thus the multidimensionality of state goals, coupled with the heterogeneity of interests (Tirole, 1994) and inconsistency of preferences (Klein et al., 2013), will make the adoption of collective action solutions by the state especially costly. Of course, where the collective action concerns all citizens, and the preferences of these citizens are relatively homogeneous and aligned, state governance may be no worse at achieving agreement on the appropriate solution than other governance forms, but for more specialized or local decisions, the adoption costs of state governance are likely to be higher.

In contrast, collective governance may have an advantage in minimizing adoption costs, at least when the scale of the agreement (as defined by the number and diversity of relevant actors) is modest. In such situations, collective governance will allow actors to directly and simultaneously communicate with each other and observe each other's commitments, solving the assurance problem (Sen, 1967; Sugden, 1984), and making the process of agreeing on an optimal solution more efficient⁹. Under for-profit and non-profit governance, such communication would be mediated through an administrative system, which would tend to raise adoption costs. As the scale of the agreement increases, however, collectives may also be driven to rely on an information system to

⁹ This presupposes, of course, that an optimal solution has already been defined. If no such solution exists, or if the existing solutions are suboptimal or equivocal, then enhanced communication among actors may only lead to conflict and mistrust. In terms of our framework, however, such disagreements are reflected in discovery costs rather than in adoption costs, since they involve the need to devise an optimal solution rather than the need to coordinate around it.

collect preferences rather than simply relying on direct communication among actors, at which point the decision making process under collective and organizational governance would essentially be the same, and all three forms—*for-profit*, *non-profit*, and *collective*—would have equal adoption costs, albeit lower than those of the state. In particular, these alternate forms would have the advantage over the state that they may be better able to serve heterogeneous preferences, provided the fixed costs of doing so are not prohibitively high (Waldfoegel, 2007).

Turning to enforcement costs, the relative efficiency of the alternate governance forms will depend upon the level of observability of cooperating actors' contribution. Where contribution is easily observable, enforcement costs will be lowest for collectives, since actors in the collective could simply self-monitor, relying on direct observation of each other's actions to maintain discipline, without the need for third-party monitors. This is the case, for instance, with irrigation collectives where farmers can monitor each other's water use by simply observing their neighbors' fields (Ostrom, 1990). As observability declines, however, collectives will increasingly need to rely on a system of third party monitoring to ensure that actors are honoring their commitments, which will bring them more in line with *for-profit* and *non-profit* organizations that also rely on such monitoring systems.

For situations with low observability, the enforcement cost advantage will lie with the state, which may use its coercive authority (Rangan et al., 2006; Klein et al., 2013) to both mandate disclosure of otherwise unobservable contributions, and to impose stronger sanctions for non-compliance. This advantage will be especially strong in cases where the collective action situation is also illimitable, so that bounding and enforcement costs will go hand in hand, but may be weaker in situations with high limitability, where the greater authority and legitimacy of the state may be offset by the higher bureaucratic and coordination costs of the state apparatus, as well as the lack of local knowledge relevant to effective monitoring. In situations that are tightly limited but low in terms of

observability there may be little to choose among the alternate governance forms. Overall, collective governance will minimize enforcement costs in situations where a common bound is clearly and easily defined, and the actions of cooperating actors are easily observable, and state governance will minimize these costs where common bounds are non-existent or hard to define or where contributions are hard to observe.

Finally, consider probity costs. A key contention of our paper is that the central advantage of non-profits is their ability to minimize probity costs. Recall that these costs arise when the benefits from the collective action are indirect or require specialized expertise to evaluate, so that cooperating actors must rely on a third party to assess these benefits. In general, for-profits are ill-suited to this role, because they have strong incentives to appropriate value for their shareholders (Francois, 2000; Glaeser and Shleifer, 2001) which may crowd out more altruistic or mission-based motives (Frey and Oberholzer-Gee, 1997; Rob and Zemsky, 2002), meaning that for-profits are less likely to look out for other stakeholder's interests (Nelson and Krashinsky, 1973; Hansmann, 1980; 1987), and less likely to be trusted by recipients and those concerned with their welfare (Baum and Oliver, 1996; Bhanji and Oxley, 2013¹⁰). Similarly, collectives may be incentivized to serve the interests of their members at the expense of others (Fischer and Lyon, 2014), so that while they may be excellent at ensuring that direct benefits are realized, they may find it hard to assess indirect benefits. Collectives may also be limited in their expertise, being likely to rely on the collective wisdom of their members rather than any specialized knowledge.

The state is certainly tasked with representing the interests of its citizens, and in that sense could appropriately play a fiduciary role (Williamson, 1999). However, legislators and regulators are themselves self-interested agents, so that political institutions are subject to substantial contestation

¹⁰ Bhanji and Oxley (2013) introduce the notion of a 'liability of privateness', which they define as "the additional costs that a corporation investing in public goods and services incurs that a (comparable) third-sector organization would not incur", i.e., as the difference in probity costs between a for-profit and a non-profit in our terminology.

(Becker, 1985; North, 1990), with the result the interests of minorities, or of those who have no franchise in the political system (such as future generations, or beneficiaries outside the state's jurisdiction) are unlikely to be represented by the state. Moreover, because of "interventions by multiple authorities and interest groups and strongly conflicting mandates and values" (Klein et al., 2013, p. 71), the political process may require constant trade-offs and compromises (Tirole, 1994), so that the objective of the state is likely to be "less clear, qualitative, changeable, and ill-specified" (Klein et al., 2013, p. 71). And all that is assuming the state is genuinely trying to serve the interests of its citizens, and has not been captured by a narrow set of elite interests (Laffont and Tirole, 1991; Hellman, Jones and Kaufmann, 2003; Holburn and Vanden Bergh, 2008).

In contrast to these governance forms, non-profits are specifically designed to serve as representatives of the interests of the powerless or disenfranchised. Because of the distribution constraint placed upon non-profits, the resources they collect must be used (directly or indirectly) in the service of their stated cause, and cannot be easily appropriated by other interests, as they may be under other governance forms (Nelson and Krashinsky, 1973; Hansmann, 1980; 1987; Glaeser and Shleifer, 2001). Non-profits may be especially well suited to providing goods and services where the quality of output is hard to measure or subject to information asymmetry (Hansmann, 1980; 1987) than for-profit organizations because their relatively weak incentives make them less liable to compromise on the quality of such services (Holmstrom and Milgrom, 1991; Acemoglu, Kremer and Mian, 2007)¹¹. And since non-profits are generally created to serve a single cause or reify a specific ideology (Weisbrod, 1977; Rose-Ackerman, 1996), attracting and selecting workers whose personal preferences are aligned with the cause (Clark and Wilson, 1961; Bowles, Gintis, and Osborne, 2001; Francois, 2000; Belsey and Ghatak, 2003; Akerlof and Kranton, 2005), and deriving

¹¹ While non-profits may be subject to agency problems, with employees acting in self-serving ways to appropriate surplus for themselves, it is unclear that this problem is remediable (Williamson, 1999), since other governance forms undertaking identical transactions would face similar agency problems; non-profits at least have the advantage that the non-distributive constraint avoids appropriation by shareholders (Rose-Ackerman, 1996)

their legitimacy from the efficacy with which they perform this role (DiMaggio and Anheier, 1990; Baum and Oliver, 1996) and are responsive to the voices of their constituents and community (Ben-Ner, 1986; Knoke, 1988; Anheier and Ben-Ner, 1997), they may value collective action to serve a specific cause more than the state (Besley and Ghatak, 2001)¹². Non-profits may also be better positioned to provide merit goods, both because their weaker incentives and commitment to a mission make them less susceptible to giving people what they want rather than what they need, and because they have both the incentive and the ability to develop more specialized knowledge around an issue, with the result that they may be better able to serve as experts on the relevant issue. For all these reasons, non-profit organizations will have a substantial advantage in minimizing probity costs relative to all other governance forms, with consumers turning to non-profits where for-profits are suspect (Baum and Oliver, 1996; Baum, 1999) or where the state is seen as untrustworthy (Brooks and Lewis, 2001; Rangan et al., 2006; Ault and Spicer, 2014).

The discussion above is summarized in Table 2. The table shows a mapping of the alternate governance forms to the transaction costs of collective action they are best able to minimize, and thus to the step in the collective action process where the governance form is more effective. Before we examine the implications of this mapping for the choice of the alternate governance form, two points are worth noting. First, the advantages summarized here are relative rather than absolute. It is certainly possible for the state or collectives to develop novel solutions to collective action problems, just as it is possible for for-profit and non-profit organizations to enforce compliance, or for for-profits and collectives to represent the interests of disenfranchised recipients. We are only arguing that, other things being equal, the governance form with the advantage in each area will be able to arrive at the same outcome more efficiently, i.e., at a lower cost; we are not suggesting that it

¹² A key assumption here is that non-profits are genuinely motivated to serve the cause or community they are designed to address. To the extent that non-profits may be founded for egoistic reasons or to satisfy the personal agenda of their founder (Hovarth and Powell, 2016) they may fail to lower probity costs. Such non-profits are fundamentally inefficient.

is the only way to arrive at the outcome. Second, it should be clear that this mapping reflects the advantage of the alternate governance forms on average. Wide variations in efficiency and effectiveness exist within each governance form, so that the most effective collectives may consistently be better at developing novel solutions than the least effective firms, and robust and well-functioning states may have lower probity costs than corrupt and badly run non-profits. These caveats notwithstanding, we believe Table 2 offers a coherent and logically consistent mapping of the distinct advantages of each governance form, and thus provides a foundation for aligning each form with the attributes of the situation (Williamson, 1998).

Insert Table 1 and Figure 2 about here

The governance of collective action

Putting the arguments above together, we can define the most efficient institutional arrangement for organizing collective action based on the characteristics of the situation. Figure 2 offers a framework for determining this optimal arrangement, based on the extent to which collective action is limitable, assessable, subtractable, observable, and uncertain. Where a single transaction cost is high, the optimal institutional arrangement is the pure governance form that best deals with that cost; where multiple costs are high, the optimal arrangement is some combination of these pure forms, though we restrict ourselves to combinations of no more than two alternate forms, in recognition of the high coordination costs of combining forms with competing logics (Battaliana and Dorado, 2010; Pache and Santos, 2010; Rivera-Santos and Rufin, 2010).

Let us begin by considering situations where limitability is low, i.e., bounding costs are high. In such cases, where the benefits from the collective action are general, collective action will require state involvement (Anheier and Ben-Ner, 1997), though the nature of this involvement may differ. If the benefits from collective action are easily assessable by citizens, and the collective action solution is not especially uncertain, then the state may efficiently govern the collective action on its own. This

is the situation that covers traditional public goods such as defense and law and order, which are almost universally provided by the state. In cases where observability is high, however, the actual production or delivery of the public goods may be contracted out to for-profit organizations, which may produce these goods more efficiently, given their stronger incentives (Williamson, 1999), with the government acting as a consumer, i.e., funding and monitoring the provision of these goods and services. As observability declines, however, the difficulty of contracting increases (Levin and Tadelis, 2010) and private contracting may come at the cost of quality (Hart, Shleifer and Vishny, 1997), prompting the state to move towards more integrated models such as joint or collaborative provision (Warner and Hefetz, 2008; Kivleniece and Quelin, 2012; Cabral et al., 2013), and eventually to provision by public bureaucracy (Williamson, 1999).

Where the solution to the collective action is uncertain, however, and therefore further innovation is required to develop new or improved solutions to public good problems¹³, the optimal governance form is likely to be a public-private partnership (Rangan et al., 2006; Kivleniece and Quelin, 2012). This will involve close collaboration between the state and the for-profit, with the former providing the funds for the provision of a good or service that has illimitable and non-subtractable benefits for its citizens, while the latter uses its specialized resources and capabilities to experiment with novel technologies or business models (Rangan et al., 2006); e.g. charter schools (Beckman and Gatewood, 2011). Or to take a more specific example, consider the provision of emergency medical response services in Indian cities: while emergency medical response services are clearly illimitable and relatively non-subtractable, and thus appropriately provided by the state, the successful provision of such services in the resource-poor and challenging context of urban India

¹³ Where environmental changes drive the need for new solutions, we would expect to observe a transition from arms-length contracting to a partnership model based on the development of new solutions by private firms, such as in the evolution of private military contractors following the end of the Cold War (Baum and McGahan, 2013).

required significant innovation in business model and software; innovation that was successfully undertaken by a for-profit organization with the relevant capabilities (George et al., 2014).

A different set of solutions applies to situations where the benefits of the collective action are difficult both to limit and to assess, i.e., both bounding and probity costs are high. Such situations may be thought of as constituting public social goods, i.e., goods that either have non-excludable indirect benefits, or whose non-excludable direct benefits are hard for the average citizen to assess. In such cases, the optimal governance form is a collaboration between the state and a non-profit, with the state lowering bounding costs, while the non-profit lowers probity costs by acting as the representative of a disenfranchised group¹⁴. Where the solution to the collective action problem is reasonably well understood, such collaborations will usually take the form of government funding of non-profits to act as service-providers (Yaziji and Doh, 2009), such as government contributions to non-profit relief efforts in other countries (where the benefits to the state's citizens is indirect), or government support for scientific research through universities and grant-making foundations (NSF, NIH, etc.), and for cultural preservation through museums and non-profit performing arts organizations (where the benefits are hard for the average citizen to assess).

A different combination of non-profit and state governance may apply where the solution to the collective action problem is uncertain or unknown. In such cases, non-profits may serve as public entrepreneurs (Klein et al., 2010), devising alternate collective action solutions, and then seeking to mobilize support behind these solutions in order to have them institutionalized by the state. In this case, non-profits—e.g., Sierra Club, Human Rights Council—play an advocacy role (Yaziji and Doh, 2009), acting as representatives of disenfranchised or minority groups to help organize collective action on their behalf because the benefits to these groups are hard for outsiders to assess, but seeking state ratification and support for their actions because the benefits from their

¹⁴ Where trust in the probity of the state is high, such actions may be organized purely under public bureaucracy (Williamson, 1999).

actions are illimitable (even the children of those who do not believe in climate change will benefit from efforts to limit it). We contend that non-profits will be preferred to for-profits in such cases, even though such situations involve high discovery costs in addition to high bounding and probity costs, because, on average, the relative advantage of non-profits over for-profits in reducing probity costs is greater than the relative advantage of for-profits over non-profits in reducing discovery costs. In cases where the probity costs of for-profits are low, however—such as in the case of for-profits with limited profit opportunities or those that are part of larger chains (Baum, 1999; Pierce and Toffel, 2013), or where the for-profit is subject to strong monitoring by activist non-profits (Kivleniece and Quelin, 2012)—a for-profit and state partnership may be a feasible alternative.

Next, consider situations where the collective action is relatively limitable, i.e., a clearly defined natural bound exists, and therefore bounding costs are low. If the benefits from the collective action are also assessable, observable and subtractable, then there is really no collective action problem and the market may be trusted to supply such private goods. If the collective action benefits are assessable, and a solution to arrive at these benefits is known, but either the benefits are non-subtractable, or the actions of the cooperating actors are hard to observe, then a collective may be the optimal governance form. This may include two distinct types of collectives. Club good collectives may help to lower enforcement costs in situations where the benefits from collective action are non-subtractable, but relatively easy to observe, by allowing actors within a common bound to monitor each other, rather than relying on a third-party enforcement system. Examples include labor unions (Hannan and Freeman, 1987) and banking self-regulation (Yue, Luo and Ingram, 2013). In contrast, common pool collectives help to lower adoption costs in situations where the benefits from the collective action are subtractable, by helping to create a system within which actors can cooperate to mutual benefit, e.g. agricultural cooperatives (Ostrom, 1990) or carbon credits markets. Note that in the case of common pool collectives with low observability,

government regulation may be required to help reduce enforcement costs by mandating disclosure and creating the potential for strong sanctions for non-compliance—in the absence of such mechanisms common pool collectives may fail to achieve their desired outcomes (Ostrom, 1990; Delmas and Montes-Sancho, 2010; Short and Toffel, 2010).

Where collective action is limitable and assessable, but either non-subtractable or non-observable, and a solution is either unknown or uncertain, collective action may be best organized under a for-profit organization. This is because the for-profit will have a substantial advantage over other forms in reducing discovery costs, while only a slight disadvantage (if any) relative to collectives in dealing with high adoption or enforcement costs. As above, these for-profit initiatives may take two forms. On the one hand, toll goods that have non-subtractable but uncertain benefits may be provided by private enterprise, with the very non-subtractability of the benefit creating the conditions for a natural monopoly if the project succeeds (since marginal costs of zero may deter further entry), though in cases where the market is highly uncertain government intervention in the form of patents or exclusive licensing may be required (Rangan et al., 2006; Klein et al., 2013). In such cases, the externalities associated with the collective action are effectively internalized within the for-profit organization, which is then in the position to claim these externalities as its reward for bearing the uncertainty that the (non-subtractable) benefit generated by its investment will be greater than the cost of that investment. Examples of such initiatives include large infrastructure projects such as the construction of new lighthouses, especially in technically challenging locations, e.g. the Eddystone lighthouse (Coase, 1974, p.365). They also include inclusive growth strategies (George et al., 2012) aimed at serving the historically disenfranchised, because such strategies involve making uncertain investments in creating new markets that deliver non-subtractable benefits; examples include micro-finance initiatives (Battilana and Lee, 2014; Ault and Spicer, 2014) and other Base of the Pyramid strategies (Prahalad, 2005; London and Hart, 2010).

On the other hand, for-profits may also play a role in establishing platforms for collaboration, enabling collective action by developing a business model or technology that makes coordination between actors easy and thus lowers adoption costs. Several recent for-profit initiatives in the ‘sharing economy’ space, such as Uber and AirBnb, fall within this category, as do crowdsourcing / crowdfunding initiatives such as Kickstarter. In each of these situations, the potential for mutual gain through coordination between actors exists, but the prevailing uncertainty makes such coordination difficult. By developing and establishing a superior platform, these firms make it easier for actors to coordinate on and adopt a single solution; in effect, they create a privately managed common-pool collective. Note that in such cases, it is important that the solution be hard to imitate, either on account of network economies, or due to the use of proprietary technology; otherwise, once the solution is known, it would be easy for actors to imitate the for-profit’s innovation and form a collective of their own.

Finally, we come to the case of collective action situations that are easy to limit but difficult to assess, i.e., where bounding costs are low but probity costs are high. Given the high probity costs, collective action in such situations will involve non-profit governance. Where uncertainty is low, the collective action may be organized purely as a non-profit. A diverse range of non-profits serving specific causes supported by donations from private individuals fall into this category, .e.g. religious bodies, animal shelters, suicide prevention centers, etc. Note that this category includes non-profit activism aimed at pressuring corporate actors, such as World Animal Protection’s ‘Before they Book’ initiative. It may also include the creation of non-profit platforms to enable cooperation for non-subtractable and hard to assess benefits, such as the Ushahidi platform (George et al., 2012) or the Edustar platform (Chatterji and Jones, 2012). Corporate philanthropy initiatives may also be included in this category of pure social goods, because such initiatives, though undertaken by for-profit firms, are effectively run on a non-profit basis, often through corporate foundations

(Galaskiewicz, Bielefeld, and Dowell, 2006; Guthrie, 2010). In situations where the existing solution involves for-profit capabilities—for instance, in cases involving the provision of free pharmaceuticals to impoverished populations—in-kind donations from for-profits may be especially important.

Where the benefits from the collective action are hard to assess, and the solution is uncertain or unknown, a hybrid governance form that combines for-profit and non-profit governance may be optimal. In such cases, the participation of the non-profit will help to lower probity costs, while the participation of the for-profit will help to keep discovery costs low. Such hybrid models include a range of for-profit and non-profit partnerships (King, 2007) to simultaneously lower discovery and probity costs. On the one hand, for-profit firms may use their unique capabilities to help lower discovery costs for non-profit initiatives, either through a one-time intervention, such as Toyota's streamlining of New York soup kitchens (New York Times, 2013), or through longer-term collaborations, such as partnerships between food and beverage companies and the UN World Food Programme (Gatignon and Wassenhove, 2015). On the other hand, non-profits can help to lower probity costs for firm CSR efforts, making socially responsible activities more attractive for the firm (King, 2007) by sharing their expertise in serving disenfranchised populations, e.g. the training of Carlson Group hotel executives by non-profits dealing with human trafficking; by partnering with for-profit social initiatives to provide legitimacy, e.g. Microsoft's partnerships with NGOs for its Partners in Learning program (Bhanji and Oxley, 2013), or Tom's shoes partnerships with NGOs to deliver their shoes in Africa (Battilana and Lee, 2014; Marquis and Park, 2014); or by validating existing CSR efforts through ratings (Chatterji et al., 2009; Chatterji and Toffel, 2010) and endorsements, e.g., Greenpeace's seal of approval on Kimberly-Clark's sourcing policies (Walker, 2014).

For-profit and non-profit hybrids also include social entrepreneurship initiatives¹⁵ whereby for-profit firms develop new technologies and business models to combine social and business objectives (Battilana and Lee, 2014) in order to deliver positive externalities to disenfranchised stakeholders (Martin and Osberg, 2007; Zahra et al., 2008) and are financially rewarded for doing so¹⁶, e.g. Method products, or Drinkwell, a startup that offers villagers in South Asia a low-cost system to purify well water. In such cases, the fact that the social mission is an explicit part of the firm's strategy, often from its very founding, may help to lower probity costs, as may the adoption of hybrid regulatory forms such as benefit corporations.

Finally, this category may also include CSR initiatives by which for-profit firms seek to abate the negative externalities generated by their businesses through initiatives such as the adoption of green technology (King and Lenox, 2001), eco-friendly sourcing (Casadesus-Masanell et al., 2009), or improvements in working conditions for employees (Flammer and Luo, 2015)—initiatives which are undertaken within for-profits because of the high discovery costs associated with the need for specialized and firm-specific solutions. In these cases, because the primary benefit to the firm (lower input costs, greater productivity, etc.) comes directly from the socially responsible action, assessability concerns are muted because firms are presumed to act responsibly out of their own self-interest; in other words, the nature of the solution lowers probity costs. Where this is not the case, these initiatives may require verification by non-profit partners, as discussed above.

Discussion

Our paper offers a comparative account of the institutional arrangements used to organize collective action (Coase, 1960; Olson, 1965; Ostrom, 1990). Specifically, we define the various

¹⁵ While some scholars include non-profit organizations under social entrepreneurship, we use the term to cover only those organizations that include both social and business objectives in their core (Battilana and Lee, 2014)

¹⁶ The difference between social entrepreneurship as defined here, and inclusive innovation as discussed earlier is assessability—inclusive innovation involves firms providing social benefits that are directly assessed and paid for by those being benefited; social entrepreneurship involves payment from those not directly being benefited—though the two are closely related and exist on a continuum of hybrid social initiatives (Battilana and Lee, 2014).

transaction costs associated with the successful organization of collective action, map these costs to the attributes of the collective action situation, and then consider the ability of four alternate governance forms—for-profit, non-profit, collective, and state—to minimize these transaction costs, in order to determine the most efficient governance form for a given collective action situation. In doing so, we extend work in new institutional economics (Coase, 1984; North, 1986; Williamson, 2000) by applying a comparative institutional approach (Williamson, 1998) to collective action problems, as advocated by Coase (1960). Our study thus provides a comprehensive theory of the various institutional arrangements used to organize collective action, providing a theoretical rationale for the existence of each form, and emphasizing the role each institutional arrangement is best designed to play.

In doing so, we emphasize the comparative efficiency of these alternate arrangements and their implications for social welfare. Institutional arrangements for dealing with social costs are not necessarily, or even primarily, determined by efficiency considerations (North, 1990), and may instead be chosen based on cultural, normative, relational or other institutional forces (DiMaggio and Powell, 1983; Galaskiewicz and Wasserman, 1989; DiMaggio and Anheier, 1990; Marquis, Davis, and Glynn, 2007; 2011; Tilcsik and Marquis, 2013)¹⁷. This raises the possibility that more efficient forms of organizing collective action may be crowded out by less efficient forms, effectively reducing social welfare (Olson and Zeckhauser, 1970; Kotchen, 2006; Kaul and Luo, 2016); a possibility that has prompted recent debates about the appropriate arrangement for dealing with social issues, with some scholars questioning the desirability of privatizing public good provision (Barley, 2007; Baum and McGahan, 2013; Horvath and Powell, 2016) while others celebrate it (Shleifer, 1998). Our study speaks directly to these debates by providing a systematic theoretical account of the comparative efficiency of alternate institutional arrangements. Moreover, consistent

¹⁷ If the choice of institutional arrangements were based (at least weakly) on their efficiency, this would only make understanding the comparative efficiency of alternate collective action arrangements more important.

with its roots in the NIE tradition (Coase, 1937; 1960; Williamson, 1998), our theory does not extol the virtues of one form over the other, but suggests conditions under which each form may be relatively efficient. Our study thus contributes to our understanding of how best to organize a range of social welfare initiatives, recognizing that “no single form of organization is good for all social circumstances”, and therefore “knowledge of the capabilities and limitations of diverse forms of organizational arrangements will be necessary for both the future study and practice of public administration” (Ostrom and Ostrom, 1971, p. 211).

In addition to its implications for work on social welfare, our study also contributes to research in strategy and organizations, responding to the call for more work examining the confluence of public and private interests (Mahoney et al., 2009; George et al., 2012), as well as the need for organizational theories to consider the impact of organizational actions on social systems (Stern and Barley, 1996). Specifically, we contribute to CSR research by providing a rationale for CSR activities on grounds of social efficiency (Kaul and Luo, 2016) rather than their benefit to shareholders. Our theoretical arguments highlight the entrepreneurial and innovative capacity of for-profit governance, with its high-powered incentives and superior ability to innovate in the face of uncertainty (Foss et al., 2008; Klein, 2008; Kaul, 2013), and suggest that it is precisely this entrepreneurial capacity of for-profit organizations that presents an opportunity for for-profit firms to contribute to the greater social good (Agarwal et al., 2007; 2010; Klein et al., 2010). We thus help to strengthen the case for for-profit firms to concern themselves with stakeholder welfare; indeed, our arguments imply that in many cases governments, non-profits, and collectives may all be better off paying for-profit firms to develop and implement a solution for them (King, 2007), rather than trying to do so on their own. At the same time, our arguments also imply that for-profit CSR efforts are most likely to contribute to social welfare when they are subject to high-powered incentives; in other words, not only may firms realize financial benefits for its shareholders while pursuing CSR

(Waddock and Graves, 1997; Barnett and Salomon, 2012; Flammer, 2015), but it is only by choosing to pursue profits from socially responsible actions that firms are likely to enhance social welfare. Our theory thus offers boundary conditions for CSR, suggesting that such efforts may only be valuable where they involve using the firm's specialized capabilities to solve social issues more efficiently and innovatively than alternate arrangements. Similarly, our study also provides a rationale for other types of non-market strategy (Dorobantu, Kaul, and Zelner, 2016), suggesting, for instance, that firms dealing with problems that are most efficiently dealt with by the state may be better off undertaking corporate political action (Hillman, Keim and Schuler, 2006; Oliver and Holzinger, 2008; Hadani and Schuler, 2015) than trying to address these problems in-house.

Just as it contributes to research on the non-market strategies of for-profit firms by identifying the conditions under which for-profit governance is most efficient, our paper also contributes to the study of non-profits. It suggests that non-profits represent a distinct and important institutional arrangement (Besley and Ghatak, 2003; 2005), one that has both greater responsiveness to specialized needs than the state, and weaker, more mission-based incentives than for-profits, and thus offers greater probity in dealing with social and merit goods than either of these alternatives. In making this argument, our study speaks to a growing debate about the value of rationalizing and professionalizing non-profits to make them more efficient (Skocpol, 2003; Hwang and Powell, 2009; Ravitch, 2013), suggesting that such rationalization may be harmful in so far as the introduction of high-powered incentives leads to the kind of distortions in preferences that non-profits are meant to avoid (Holmstrom and Milgrom, 1991; Acemoglu et al., 2007). The superior probity of non-profits also suggests an important boundary condition for non-profit provision of social goods—such arrangements may only be socially beneficial so long as they genuinely represent the interests of those they serve. Non-profit initiatives that are driven by the private agendas of their founders may be inimical to social welfare (Horvath and Powell, 2016).

In addition to shedding new light on the four pure forms we analyze, our paper also offers a deeper understanding of a variety of hybrid organizational forms (Battilana and Lee, 2014), complementing work in this area—which has generally focused on the challenges such forms face and the ways in which they organize (Mair et al., 2012)—by providing a theoretical rationale for why these hybrid forms exist, and the role they play in economic activity. In doing so, we also offer a richer and more nuanced elaboration of the different types of institutional arrangements possible, linking these to the relevant context. So, for instance, instead of speaking of state provision generally, we identify six distinct forms of state intervention—regulation, government contracting, public provision through non-profits, public and private partnership, public and non-profit partnership, and wholly state-owned governance—and map each to a distinct configuration of limitability, observability, uncertainty, and assessability.

Finally, by defining the most efficient governance form for any collective action situation, our study also contributes to the literature on private politics and social activism (Ingram and Rao, 2004; Baron and Diermeier 2007; King and Soule 2007; Baron, 2009; Hiatt, Sine, Tolbert, 2009; Ingram, Yue, and Rao 2010; McDonnell, King and Soule, 2015), by pointing to the most effective path to social change in any given situation. Thus, activists concerned with causes that are hard to limit or observe may be best served by focusing their attention on legislative changes, those pursuing limitable but uncertain causes may be best served by pressuring for-profit firms, and those concerned with causes where the benefits of collective action are hard to assess may wish to either found new non-profits, or work with existing ones.

As with any paper, ours has several limitations. As one of the first studies to extend the comparative institutional approach to collective action problems in a comprehensive way, our paper is necessarily exploratory—intended more to serve as the foundation for further discussion and development than as a definitive theoretical account. Certainly, each one of the ten broad

governance forms we identify in Figure 2 is susceptible to further exploration, with existing work already offering more detailed typologies of non-profits (Hansmann, 1987), social enterprises (Mair et al., 2012), public-private partnerships (Kivleniece and Quelin, 2012) and partnerships between for-profits and non-profits (Galaskiewicz and Sinclair-Colman, 2006; Yaziji and Doh, 2009). Nor is the list of attributes driving the choice of governance form we offer meant to be comprehensive; as Ostrom (2005) puts it “the number of attributes that may affect the structure of a situation is extraordinarily large” (p. 26). Thus, the optimal governance form for a given collective action may well depend on other factors, including production costs (King, 2007; Kaul and Luo, 2016), first-order institutional conditions (Bhanji and Oxley, 2012; Ault and Spicer, 2014), the heterogeneity of pre-existing identities and social networks (Rowley, 1997; Rowley and Moldoveanu, 2003), and various supply side factors (Anheier and Ben-Ner, 1997).

Finally, as with all theoretical accounts, the arguments in our paper await empirical testing. While the numerous examples we provide throughout the paper, and their close alignment with our theory, offers some comfort in the prima facie validity of our claims, these examples are certainly not meant to be dispositive. More rigorous testing is clearly required to test the validity of the arguments we present here, and we hope that our study provides a sufficient foundation both for such empirical testing and for further theoretical development on the question of how best to organize collective action.

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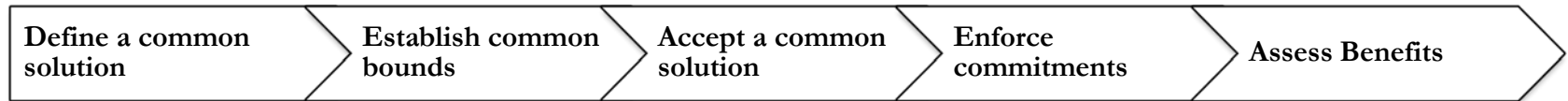
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TABLE 1: Comparative Transaction Costs Under Alternate Governance Forms

	For-profit	Non-profit	Collective	State
<i>Discovery Cost</i>	Low	Moderate	High	High
<i>Bounding Cost</i>	Moderate / High	High	High	Low
<i>Adoption Cost</i>	Moderate	Moderate	Low	High
<i>Enforcement Cost</i>	Moderate	Moderate	Low if limitable and observable; High otherwise	High if limitable and observable; Low otherwise
<i>Probity Cost</i>	High	Low	Moderate	Moderate

FIGURE 1: Organizing Collective Action



Description of step	Gathering information about potential actions and outcomes; developing and testing potential collective action solutions that are acceptable to all relevant actors	Creating the means to ensure that all relevant actors participate in the collective action and all non-participants are excluded from its benefits	Getting all participants to commit to a coordinated set of actions under an agreed upon constitution of rules and processes	Monitoring actors to ensure that they comply with their commitments, and penalizing those who fail to do so	Confirming that the intended benefits of the collective action are being received
Transaction costs	Discovery Costs	Bounding Costs	Adoption Costs	Enforcement Costs	Probity Costs
Driving attributes	<i>Increase with</i> Uncertainty <ul style="list-style-type: none"> • Uncertainty about market demand • Uncertain or unknown technology • Heterogeneous or evolving actor interests 	<i>Decrease with</i> Limitability <ul style="list-style-type: none"> • Existence of clearly defined or natural boundaries to collective action and its benefits • Defensibility of these boundaries 	<i>Increase with</i> Subtractability <ul style="list-style-type: none"> • Extent to which benefit to one actor must come at the cost of another 	<i>Decrease with</i> Observability <ul style="list-style-type: none"> • Extent to which actor contributions are directly and easily observable by other actors or third party monitors 	<i>Decrease with</i> Assessability <ul style="list-style-type: none"> • Extent to which intended beneficiaries of the collective action are the actors themselves • Actors' expertise in evaluating the quality of benefits received

FIGURE 2: Decision Framework for Choosing the Optimal Governance Form

