

Testing rational choice theories of institutional change

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Abstract

Having empirically identified institutions as critical determinants of socioeconomic outcomes, social scientists are starting to turn their attention to empirically identifying sources of institutional change. Rational choice scholars offer two theories of such change: conflict theory and cooperation theory. We highlight crucial but easily overlooked methodological issues involved in attempting to evaluate these theories empirically. To do so, we critically examine Coleman and Mwangi's study of property evolution among Maasai pastoralists in Kajiado, Kenya. Lessons from our examination, we hope, will help this burgeoning area of research proceed productively.

Keywords

Common property, conflict theory, cooperation theory, institutional change, Maasai, methodology, private property

Introduction

Over the past 30 years, social science has seen an avalanche of empirical research that identifies institutions as critical determinants of socioeconomic

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outcomes. This success has led social scientists to begin thinking about how to use empirical analyses to identify the determinants of institutional change. For rational choice scholars, this means evaluating the two leading rational choice theories of such change: “conflict theory,” according to which institutional changes reflect powerful actors’ efforts to reinforce their power for private gain, and “cooperation theory,” according to which those changes reflect efficiency enhancing adaptations (see, for instance, Allio et al., 1997; Coleman and Mwangi, 2015; Hanisch and Schluter, 2000; Kasymov and Zikos, 2017; Murtazashvili, 2013).¹

A wise man once observed, “It is easier to avoid a pit than to climb out of one.” Motivated by this logic, our article identifies two “methodological pits” into which empirical evaluations of conflict and cooperation theories are prone to fall: first, the attempt to evaluate the superiority of conflict (cooperation) theory over cooperation (conflict) theory by testing conflict (cooperation) theory alone; second, the attempt to test cooperation theory by evaluating changes in aggregate costs (benefits). To illustrate these pits in practice, we critically examine Coleman and Mwangi’s (2015) study of institutional change among Maasai pastoralists in Kajiado, Kenya—one of the first efforts to evaluate the conflict and cooperation theories quantitatively and one that is likely to be influential. Our purpose is not to empirically (re) evaluate institutional change among the Maasai, and we do not attempt to undertake any such (re)evaluation. Our goal is broader and more basic: to mark the methodological pits that attempts to empirically evaluate rational choice theories of institutional change encounter. In doing so, our analysis contributes to the productive development of this burgeoning research area.

Tests of conflict (cooperation) theory alone cannot evaluate superiority

Conflict theory, most closely associated with Knight (1992) and Libecap (1989), posits that institutional change reflects power-seeking for private benefit by people who are more powerful to begin with. Its central prediction is that institutional change disproportionately benefits such people or, in a stronger version, benefits them at the expense of people who are less powerful to begin with. Cooperation theory, most closely associated with Demsetz (1967), posits that institutional change reflects efficiency enhancing adaptation to changes in relative prices or constraints. Its central prediction is that institutional change increases social wealth.²

These theories are falsifiable and thus testable. If an institutional change disproportionately benefits people who were less powerful *ex ante*, conflict theory can be rejected as its explanation. If an institutional

change reduces social wealth, cooperation theory can be rejected. This much is understood.

What is not well understood is that these theories are mutually consistent. Indeed, the literature tends to present them as competing alternatives (Deneke, 2014; Hanisch and Schluter, 2000; Heritier, 2007; Tang, 2011). However, increased social wealth is not incompatible with lopsided distributions of the gains—including distributions that deliver all the gains to ex ante more powerful people, even at ex ante less powerful people's expense.³ The observable predictions of conflict and cooperation theory are therefore compatible.

In fact, the very mechanisms of institutional change these theories posit can be complementary. Consider, for instance, the theory of government emergence offered in Martin McGuire and Mancur Olson's (1996) classic article aptly subtitled "The Invisible Hand and the Use of Force."⁴ That theory begins in a world without government where powerful roving bandits use their power to plunder less powerful producers. Some bandits are especially powerful; they have a comparative advantage in the use of force. These bandits have an incentive to protect producers from the plunder of other bandits. Protected producers are more productive, and more productive producers produce more wealth, which means more for protecting bandits to take. The most powerful bandits therefore cease to rove and establish a stable and encompassing interest over producers, to whom they supply property protection. By the same logic, the now-stationary bandits have an incentive to supply public goods that make producers more productive. In other words, the most powerful bandits create institutions of government—led to do so, as if by an "invisible hand," in pursuit of reinforcing their power for private gain. Stationary bandits are still bandits: their gains come at the expense of producers, from whom they extract wealth—some of whom may be made worse off than before the institutional change. Still, that change increases social wealth.

Our point is not that McGuire and Olson's (1996) theory correctly describes the emergence of government (though, it may); it is that the mechanisms of institutional change posited by conflict and cooperation theories may work together. As Knight and North (1997: 352) put it, "the strongest economic actors" may, quite reasonably, "identify their long-run interests with...efficiency."

The mutual consistency—perhaps even complementarity—of the central predictions that conflict and cooperation theories make has a simple but critical implication for efforts to evaluate them empirically: one cannot evaluate the superiority of one theory over the other by testing one theory alone. Observing an outcome predicted by conflict (cooperation) theory is

by itself uninformative about which theory “better explains” an institutional change. Moreover, to the extent that, as in McGuire and Olson’s (1996) model, the mechanisms posited by each theory require one another to generate that change, the question “Which theory better explains the institutional change?” is nonsensical.

Changes in aggregate costs (benefits) cannot test cooperation theory

Like all choices, choices between institutions involve tradeoffs: benefits and costs.⁵ The effect of an institutional change on social wealth depends on how it negotiates these tradeoffs. If a change increases aggregate benefits relative to aggregate costs, that change increases social wealth, and vice versa. Cooperation theory thus predicts that institutional change increases aggregate *net* benefits.

What is easily overlooked is that aggregate net benefits may increase even when aggregate benefits decrease; aggregate costs simply decrease more. Likewise, aggregate net benefits may increase even when aggregate costs increase; aggregate benefits simply increase more. Since every institutional choice involves tradeoffs, nearly every institutional change is certain to increase aggregate costs (benefits) on some nontrivial dimension and increase aggregate benefits (costs) on another.

Consider, for instance, the sharp institutional change that occurred in postbellum America—the so-called “rise of the regulatory state.” During this period, government regulation was substituted for private litigation as the means of governing a wide variety of business practices. That change increased aggregate benefits in the form of limiting business malfeasance but simultaneously increased aggregate costs in the form of rent-seeking enabled by the introduction of the regulatory state (Stigler, 1971). Because the former are commonly seen as having increased more, this institutional change is construed as an efficient adaptation to the rising price of limiting business malfeasance through private litigation after the appearance of the “robber barons” (Glaeser and Shleifer, 2003). In general, institutional changes that move toward state ordering and away from private ordering offer aggregate benefits in the form of reducing scope for private predation but also offer aggregate costs in the form of increasing scope for state predation (Djankov et al., 2003).

The changes in benefits and costs attendant to other kinds of institutional changes reflect similar interdependencies. Changes that increase aggregate benefits on one important dimension increase aggregate costs on another. This fact has an elementary but critical implication for efforts to evaluate

cooperation theory empirically: one cannot test that theory by evaluating changes in aggregate costs (benefits). Observing an increase (decrease) in aggregate costs (benefits) on an important dimension is uninformative about whether cooperation theory explains an institutional change.

Methodological pits in practice

To illustrate how the methodological pits analyzed above present themselves in practice, we critically examine Coleman and Mwangi's (2015; henceforth "CM") effort to empirically evaluate the conflict and cooperation theories in the context of recent institutional change among Maasai pastoralists in southwestern Kenya. We use CM's study for this purpose because (1) it represents one of the first efforts at quantitative empirical evaluation of these theories; (2) it highlights precisely the methodological problems analyzed above; and (3) its appearance in the *American Journal of Political Science* renders it likely to have a wide audience and to be influential on future research in this domain. Our intention is not to devalue CM's work. On the contrary, we believe their study has much value—simply that it does not lie in answering the question it poses: Which theory "is a better explanation of institutional change" among the Maasai? (Coleman and Mwangi, 2015: 864).

The precolonial Maasai were a prominent tribe of nomadic herders found throughout East Africa. Today, they largely reside in Kajiado, Kenya (Mwangi, 2007), where CM's study takes place. Traditionally, the Maasai practiced mobile pastoralism under a property regime in which land was held in common but livestock was owned privately. Through a series of colonial and then independent-government land reforms, the land regime in Kajiado shifted from communal ownership toward private ownership—first, through the creation of corporately owned group ranches in the 1960s, then through the creation of individually owned land titles when many of these group ranches subdivided in the 1990s.

Subdivision yielded an average parcel size significantly smaller than that needed to raise livestock in Kajiado's arid and semiarid climate (see BurnSilver and Mwangi, 2007; Kimani and Pickard, 1998; Mwangi, 2007; Rutten, 1992, 2008). Consequently, livestock production—historically the region's chief source of income—declined (BurnSilver, 2016; Campbell et al., 2000; Leeson and Harris, 2018; Rutten, 2008).

To cope with this situation, some Maasai pursued a strategy of land reaggregation: combining their individual land parcels to reach the minimum land area required for viable livestock production (BurnSilver and Mwangi, 2007; Coleman and Mwangi, 2015; Mwangi, 2007). This reaggregation

reflects the (re)emergence of common property among some Maasai—the institutional change that CM consider.⁶

CM's study relies on data from surveys that CM administered to 539 landholding households across eight Maasai group ranches in 2008. The reader interested in details of their data may consult CM's study and also their dataset, which is publicly available. We do not discuss these details, since, as highlighted below, the issues we are concerned with are not issues of data; they are methodological. Thus, our analysis moves directly to the hypotheses that CM use to test the conflict and cooperation theories and CM's interpretation of those tests' results.

To evaluate cooperation theory in the Maasai context, Coleman and Mwangi (2015) formulate two hypotheses:

Cooperation-Grazing Hypothesis: Grazing intensity is lower in common property than private property (p. 858).

Cooperation-Vegetation Hypothesis: Vegetative conditions are better in common property than private property (p. 858).

Famously, common pool resources confront the specter of supra-optimal use (Hardin, 1968)—in the Maasai case, overgrazing. Thus, Coleman and Mwangi (2015) conclude, “the extent to which harvest rates in common property exceed the rates in private property indicates the relative efficiency of common property institutions” (p. 858).

CM's empirical tests reject both hypotheses: under common property, grazing is more intense and vegetative conditions are rated worse than under private property. CM interpret these results as rejecting cooperation theory as an explanation for the (re)emergence of common property among the Maasai.

That interpretation, however, is incorrect—a result of CM's analysis falling into one of the methodological pits discussed above: attempting to test cooperation theory by evaluating changes in aggregate benefits (costs). Coleman and Mwangi (2015) acknowledge that a test of cooperation theory requires a test of what happened to “aggregate net benefits” (p. 858). But they overlook that a test of what happened to aggregate benefits cannot perform that function, since aggregate *net* benefits may increase both when aggregate benefits increase and when aggregate benefits decrease. Indeed, given the tradeoffs inherent in the choice between private and common property land regimes, the particular aggregate benefits whose change CM evaluate in their test—grazing intensity and vegetative conditions—are almost certain to decrease under common property whether common property increases aggregate net benefits or not.

Common property offers society potential benefits. It conserves on resources required to define and enforce private property rights (Anderson and Hill, 1975). In a pastoralist society “with common property, economies of scale from recombined land and labor may be possible” that are not possible with private property, particularly when that society inhabits an arid or semiarid region (Coleman and Mwangi, 2015: 857). Also in a pastoralist society that inhabits such a region, common property can “reduce drought risk vulnerability” relative to private property (Coleman and Mwangi, 2015: 857). These benefits of common property are costs of private property: what is typically sacrificed when private property is substituted for common property.

However, common property also imposes potential costs on society. It incentivizes resource overuse—in a pastoralist society, overgrazing. More generally, relative to private property, common property provides weaker incentives for resource care—in a pastoralist society, maintenance and improvement of vegetative conditions. These costs of common property are benefits of private property: what is typically sacrificed when common property is substituted for private property.

The relevant test for cooperation theory in the Maasai case is whether these aggregate costs of common property are higher or lower than the aggregate benefits—whether the enforcement savings, economies of scale, and drought-insurance opportunities that common property offers are “worth” overgrazing and vegetative degradation.⁷ After all, private land rights are not universally efficient (Demsetz, 1967; Leeson and Harris, 2018). The hypotheses that CM formulate and test, however, relate to only one side of the ledger: they don’t evaluate cooperation theory, they evaluate the theory of the “tragedy of the commons.” Thus, the results of CM’s tests of these hypotheses don’t reject cooperation theory but instead confirm the tragedy of the commons.

It is perhaps tempting to think that CM have not fallen into a methodological pit; their data are simply wanting. The problem, however, is not that those data are cross-sectional rather than longitudinal or that they rely on survey responses instead of observed behavior. Even “perfect” data on grazing intensity and vegetative conditions would not address the issue at hand: the *hypotheses CM formulate* to test cooperation theory are incapable of testing that theory because they relate to changes in aggregate benefits (costs). The remedy is not “better data”; it is the formulation of hypotheses that relate to changes in aggregate net benefits, which requires first reasoning correctly about the nature of aggregate benefits and costs in this context.

To evaluate conflict theory in the Maasai case, Coleman and Mwangi (2015) formulate two additional hypotheses:

Conflict-Land Asymmetry Hypothesis: Common property landholdings are concentrated among a few landholders (p. 859).

Conflict-Herd Size Hypothesis: Common property intensifies the relationship between landholdings and herd size (p. 859).

According to CM, more powerful group members' power is reinforced, hence their ability to secure additional benefits for themselves is enhanced, when common property landholdings are concentrated among a few large landholders. Confirmation (non-rejection) of the above hypotheses would therefore be consistent with conflict theory. And that is what CM's empirical tests find: in common property groups, landholdings are concentrated among a few Maasai households and larger landholders realize larger herds while smaller landholders do not. Given the results of their tests on grazing and vegetation, from this, CM conclude that conflict theory explains the (re) emergence of common property among the Maasai.

That conclusion, however, is also incorrect—the result of CM's analysis, after first falling into the methodological pit discussed above, falling into the other: attempting to evaluate the superiority of conflict theory with tests of that theory alone.

The results of CM's tests of their conflict-theory hypotheses are consistent with that theory, but they are also consistent with cooperation theory—and equally so. Cooperation theory, recall, is an efficiency theory. It is therefore silent about the distribution of changes in social wealth resulting from institutional change. Depending upon the ex ante bargaining power of group members, the distribution of a social surplus secured through an efficiency enhancing institutional change may be very equal; alternatively, it may be very unequal. Indeed, some group members are likely to lose from efficiency enhancing institutional change. Cooperation theory posits only that, in aggregate, other group members benefit still more, which is consistent with many distributional outcomes, including many that involve a large number of losers. Since the hypotheses that CM use to evaluate cooperation theory cannot in fact evaluate that theory, the results of their tests of conflict theory are uninformative about which of these theories “is a better explanation of institutional change.”

As above, the problem here is not one of inferior data; it is methodological. CM's analysis, which falls into the methodological pit of attempting to evaluate cooperation theory by evaluating changes in aggregate benefits (costs), does not and cannot empirically reject cooperation theory. And this, in turn, sets up their analysis to fall into the other methodological pit: attempting to evaluate the superiority of conflict theory with tests of that theory alone.

In the end, one learns from CM's quantitative analysis that, among the Maasai, changing from private property to common property led to familiar commons problems and benefited *ex ante* more powerful herders. However, one does not learn that cooperation theory does not explain institutional change among the Maasai or even that conflict theory "better explains" that change, as CM conclude. In fact, given what *is* learned from CM's analysis, it is possible, and perhaps even likely, that the question their analysis seeks to answer—"Which theory 'is a better explanation of institutional change' among the Maasai?"—does not make sense, for what *is* learned is consistent with conflict-and cooperation-theory mechanisms having worked hand-in-hand to generate the change to common property.

In the Maasai environment, the aggregate benefits of common property may exceed the aggregate costs; a move to common property may increase aggregate net benefits (Leeson and Harris, 2018). However, this move may offer *ex ante* more powerful herders opportunities to gain disproportionately, even at *ex ante* less powerful herders' expense. That prospect incentivizes the former to encourage pasture recombination with the latter, resulting in just what CM find: disproportionate benefits for more powerful herders, more intense grazing, and vegetative degradation in common property.

Conclusion

The empirical evaluation of rational choice theories of institutional change has great potential. To realize that potential, however, and to avoid unproductive "wheel-spinning," the special challenges such evaluation confronts must be recognized and steps taken to surmount them. In the hope of aiding this endeavor, our analysis identifies two crucial but easily overlooked "methodological pits" attendant to empirically evaluating conflict and cooperation theories of institutional change.

Those theories are mutually consistent, and the mechanisms of institutional change they identify may be complementary. Methodologically, this implies that researchers cannot expect to be able to evaluate the superiority of one theory or the other with a test of that theory alone. In addition, it implies that attempting to identify which theory is "superior" might not be sensible in the first place.

Furthermore, cooperation theory, as an efficiency theory, is about changes in aggregate net benefits. Since aggregate net benefits may rise both when aggregate benefits (costs) increase and when aggregate benefits (costs) decrease, researchers cannot expect to be able to test cooperation theory using predictions about changes in aggregate benefits (costs). In addition, the interdependency of changes in important aggregate benefits and costs attendant to institutional change must be minded when conceiving

of predictions for this purpose. Avoiding these methodological pits is not sufficient for productive empirical analyses and sound conclusions, but it is necessary and a good point from which to start.

Authors' note

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Notes

1. Cooperation theory is also referred to as the efficiency perspective, harmony paradigm, naïve theory, voluntary conceptualization, functionalism, and the economic theory. Conflict theory is also referred to as the distributive perspective or distributional theory, interest-group or political theory, and power conceptualization (see, for instance, Acemoglu et al., 2005; Allio et al., 1997; Campbell, 2010; Eggertsson, 1990; Murtazashvili, 2013; Ogilvie, 2007; Tang, 2011; Toboso, 1995).
2. There are several ways of saying this: “increases social wealth”; “increases aggregate net benefits”; “is Kaldor-Hicks efficiency improving”; “is potentially Pareto efficiency improving” (i.e. would be Pareto efficiency improving if redistribution were costless).
3. Knight (1992) and Knight and North (1997) are explicit that conflict theory does not predict efficiency reducing institutional change.
4. See also, Olson (1993).
5. Benefits and costs are realized over time, sometimes at different points in time. Thus, they should be understood to refer to present discounted values.
6. Post-reaggregation land arrangements may be considered localized club goods rather than traditional commons. In Ostrom's (1990: 48) terminology, reaggregation resulted in a “limited-access common pool resource” rather than an “open-access common pool resource.” Nevertheless, in keeping with CM's terminology, we refer to this land arrangement as “common property.” Although reaggregation did not change the legal rules surrounding land use, it is reasonable to consider it an institutional change. Institutions are the “humanly devised constraints that shape interaction” or “rules of the game,” formal and informal (North, 1990: 3, 4). Reaggregation significantly altered the rules of land use.
7. Especially since, according to Coleman and Mwangi (2015), drought-insurance opportunities were “the primary motivation for land recombination” among the Maasai (p. 858).

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