Formal and Informal Rules in Elinor Ostrom's IAD Framework

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ABSTRACT

Elinor Ostrom's Institutional Analysis and Development (IAD) framework has been described as "one of the most developed and sophisticated attempts to use institutional and stakeholder assessment in order to link theory and practice, analysis and policy." But not all elements in the framework are yet sufficiently well-developed. This paper focuses on one such element: the "rules-in-use" (a.k.a., "working rules"). Specifically, the paper begins a long overdue conversation about relations between formal legal rules and "working rules" by offering a tentative and very simple typology of relations. Type 1: Some formal legal rules equal or approximate the working rules; Type 2: Some legal rules plus widely held social norms equal or approximate the working rules; and Type 3: Some legal rules bear no evident relation to the working rules. Several examples, including some previously used by Lin Ostrom, are provided to illustrate each of the three types, which can be conceived of as nodes or ranges along a continuum. The paper concludes with a call for empirical research, especially case studies and meta-analyses, to determine the relevant scope of each of these types of relations, and to provide data for further our understanding of how different types of rules, from various sources, function in institutional analysis.

Key Words: *enforcement*; *IAD framework; institutions; law; monitoring; social norms; working rules*

INTRODUCTION

The Institutional Analysis and Development (IAD) framework has been described as "one of the most developed and sophisticated attempts to use institutional and stakeholder assessment in order to link theory and practice, analysis and policy" (Aligica 2006:89). But it suffers from notable weaknesses, including its inability to account for the complex relations between formal legal rules and "rules-in-use" (or "working rules"). The purpose of this paper is to begin a process of exploring the variable relations between legal rules and "working rules," to enhance the IAD framework's utility.

The first section of this paper briefly reintroduces the IAD framework. The second section focuses on the role of formal and informal rules in the IAD framework. The third section offers a tentative typology of relations between formal legal rules and the "working rules" of the game. The paper concludes with a call for further (qualitative as well as quantitative) empirical research concerning the relations between formal legal rules and "working rules," including the social and legal *processes* that influence or determine those relations.

THE IAD FRAMEWORK: ITS FUNCTION AND EVOLUTION

Originally developed in the 1980s by Elinor Ostrom and colleagues at the Workshop in Political Theory and Policy Analysis at Indiana University (see Kiser and Ostrom 1982), the IAD framework as it stands today is the product of several important influences. Foremost among them are the political theories of Ostrom's husband and partner, Vincent. A second important influence was Elinor Ostrom's increasing engagement with game theory, especially during and after her semester studying with Reinhard Selten in Bielefeld in 1981. It is easy to see this influence in the very structure of the IAD (below), with actors in positions, entering into social interactions with their own strategies (as well as ethics and ideas), and operating under sets of rules that structure "the game." The "action situation" might as well be, and sometimes is in fact, a "decision node" in an iterated game. And in the IAD framework, just as in the theory of games, jointly produced outcomes from social interactions affect the material welfare of the actors.

The IAD framework evolved significantly over time. Figure 1 might be called the "standard version," because Ostrom used it in her most complete explication of the framework (E. Ostrom 2005:15) and regularly thereafter (e.g., E. Ostrom 2010:646). As in most versions of the IAD framework, the centerpiece is the action situation, where individuals meet in social fora, establishing patterns of interaction that generate outcomes for those individuals, as well as social and ecological effects. Actors enter action situations in positions (citizen, seller, buyer, senator, litigant, judge, etc.), with (limited) information, strategies (conditional cooperator, rent-seeker, free-rider, etc.), and behavior, all of which are to varying degrees shaped by existing biophysical conditions, the attributes of the community in which they live, and the "rules-in-use."

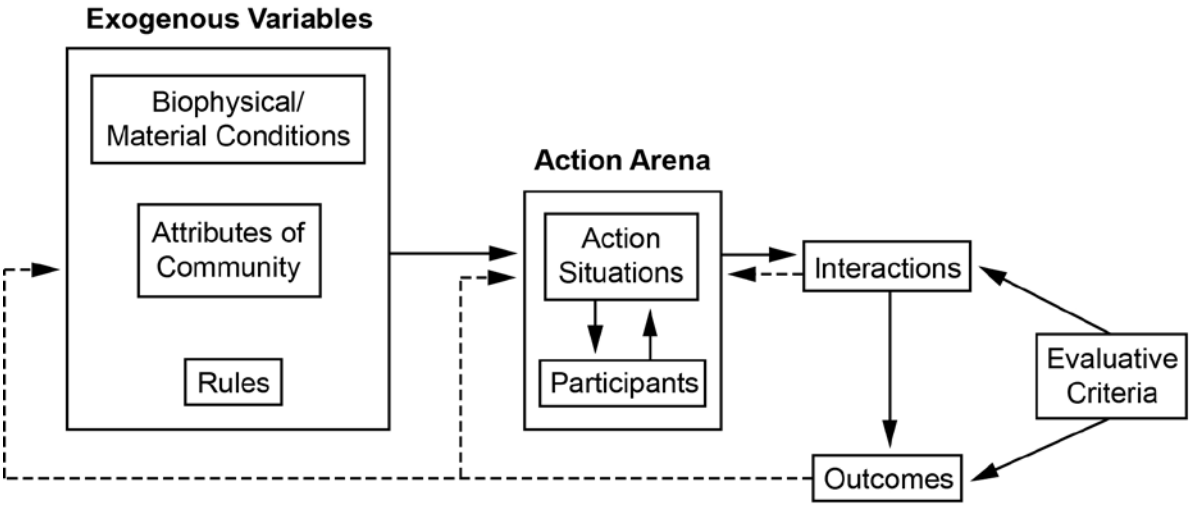

Figure 1. The IAD Framework

In this version of the framework, Ostrom refers to the variables preceding the action situation as "exogenous." This makes sense in so far as they are external to a given action situation. But the variables are, in fact, endogenized to the framework by virtue of the feedback loops from the Outcomes box, as patterns of interaction effect biophysical conditions,

community attributes, and "rules-in-use." It would be more appropriate to think of those variables as the "Social and Ecological Context" within which a focal action situation arises.[1]

Constitutional, policy, and operational levels under the IAD framework

One of the unique features of the IAD framework is its utility across a wide range of social settings, including markets, courtrooms, corporate boardrooms, clubs, faculty meetings, and family dinner table, and at different levels of social choice, including: constitutional-level choice, with constitutional rules as outputs establishing the meta-rules of the game; policy making,[2] with laws and regulations (enacted in compliance with the constitutional rules) as outputs establishing rules; and patterns of interaction among individuals in their ordinary (operational-level) dealings in society in accordance (or not) with various constitutional and legal rules. Choices made at each level have outcomes (in addition to outputs) that can affect the biophysical conditions, community attributes, and "rules-in-use" at other levels. Figure 2 illustrates the relations between levels of choice, rules, and outcomes.

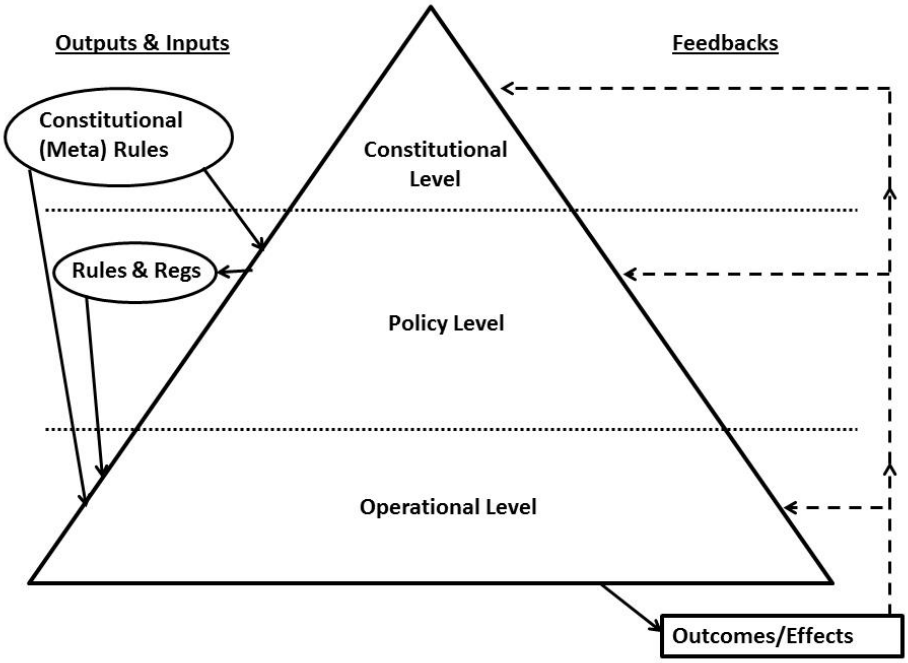

Figure 2. Levels of Social Interaction

[1] One implication of this treatment is that those boxes might be replaced by the first-tier variables of Ostrom's subsequently developed SES framework (see E. Ostrom 2007, 2009).

[2] I prefer the term "policy-level" to "collective choice-level," the term usually employed by Lin Ostrom others using the IAD framework, because it is more specific. Constitutional-level decisions are just as much collective-choice decisions as are lower-level policy decisions.

To illustrate the crosscurrents across various levels of interaction, consider the case of "Prohibition," a massive but doomed effort at social engineering undertaken in the United States between 1920 and 1933. The Eighteenth Amendment to the U.S. Constitution, which took effect on January 16, 1919 (subsequently amended as of January 17, 1920), prohibited the production, transport, and sale (but not the private possession or consumption) of alcohol throughout the country. It was the outcome of a "constitutional action situation" driven by a coalition of "Baptists and Bootleggers" (see, e.g., Yandle 1983).

The U.S. Constitution provides two separate sets of procedural meta-rules (i.e., rules for establishing rules) for its own amendment: Under Article V, the Constitution is amended when three-fourths of the states ratify a proposed amendment enacted by two-thirds super-majorities in both houses of Congress. Alternatively, the states can amend the Constitution without congressional action, on their own initiative. Two-thirds of the states can call a constitutional convention at which amendments can be adopted by simple majority vote, subject to ratification by three-fourths of all the states.

The Eighteenth Amendment was adopted pursuant to the first of these processes. It provided a constitutional meta-rule establishing Prohibition, which Congress subsequently supplemented by enacting, in a "policy action situation," the Volstead Act (Pub. L. 66–s66). That statute, which survived a veto by President Woodrow Wilson (in accordance with other procedural meta-rules of the game empowering Congress to override a presidential veto upon two-thirds super-majority votes in each chamber), created more precise "rules of the game" governing alcohol, including some exceptions and exemptions, in general accordance with the "meta-rule" established in the Eighteenth Amendment.

Initially, compliance with Prohibition was high (Miron and Zwiebel 1991), but over time compliance with Prohibition at the "operational level" dropped off steeply as it led to the "black markets" in alcohol emerged, enriching and empowering organized crime "families," which competed with one another through the use of violence and corruption of law enforcement. These developments soon "led to widespread public disenchantment with Prohibition" (Miron and Zwiebel 1991:2). Alcohol consumption rebounded toward pre-Prohibition levels, and Congress ultimately proposed a new constitutional amendment to re-legalize alcohol production and sales. What became the Twenty-First Amendment originated in a "policy action situation"—Congress's February 1933 enactment of the Blaine Act, which proposed to amend the Constitution to repeal the Eighteenth Amendment. Before the year was out, three-quarters of the states had ratified the Twenty-First Amendment (in a series of constitutional action situations), thereby ending America's single greatest experiment in social engineering.

This was a case—really, a series of related action situations at constitutional, policy, and operational levels—in which higher-level rules (or meta-rules) affected action situations at lower levels, while feedback mechanisms, in turn, led to further changes in the constitutional meta-rules of the game. Simply put, one constitutional-level action situation designed to reform individual behavior was ultimately negated by patterns of interaction at the operational level,

reflective of powerful social norms, by another constitutional-level action situation in which the meta-rules of the game were changed to bring them into conformity with social behavior.[3]

In Ostrom's terminology, the IAD is neither a theory nor a model but a *framework*—a sort of conceptual umbrella under which various theories and models might be deployed and tested as mechanisms for understanding or explaining "social dilemmas" or interactions (see, e.g., E. Ostrom 2005:27–29). It is not atheoretical, but provides a "metatheoretical conceptual map" (E. Ostrom and Cox 2010:455) for understanding and assessing the most important elements a given collective action setting. Its primary function is to *organize our thinking* about social interactions (both formal and informal), as well as their outcomes, prior to assessing particular cases or diagnosing specific problems. For that purpose it is eminently useful.

Many of the IAD framework's elements have been well developed over the years (see, most importantly, E. Ostrom 2005 and McGinnis 2011*a*), but Ostrom always considered her elements, definitions, and the overall structure of the framework itself to be provisional and subject to contestation, further development, and even refutation. She was almost continually revising and refining the framework and its elements. The focus of this paper is on the element labeled, "Rules." Ostrom delineated various *types* of rules that condition social interactions. But she wrote little about the *sources* of rule-types and, more importantly for present purposes, *relations* between different types of rules, *processes* by which formal legal rules influence, and are influenced by, "rules-in-use" or "working rules."[4] My purpose here is to spur a more concerted effort to understand and delineate the roles (plural) that formal legal rules play in determining "working rules" within the IAD framework.

FORMAL LAWS, RULE TYPES, AND THE IAD FRAMEWORK

Roscoe Pound (1910) was the first scholar to distinguish between "rules-in-form" and "rules-in-use," though he preferred the terms "law-in-books" and "law-in-action." Nevertheless, the term "rules-in-use" sometimes is taken to imply that "rules-on-paper" are irrelevant. For that reason, I prefer the label "working rules" (following Commons 1959:531, V. Ostrom 1976:842, E. Ostrom 2005:19), or simply "rules," which are broader terms that do not implicitly or explicitly conflict either with informal norms or formal legal rules. Among the "working rules," the role of formal legal institutions has been, relatively speaking, neglected in IAD elaborations and applications. In part, this is because many such applications focus on local and (relatively) informal community decisions, rather than rule-making within formal legal structures. It is important, however, not to neglect the important function formal rules play in many – perhaps the vast majority – of action situations in which most actors find themselves on a daily basis.

[3] Needless to say, the history of Prohibition presented here is simplified in order to elucidate the cross-level effects of action situations at constitutional, policy, and operational levels. For a less simplistic, but still concise, history of Prohibition, see Menell (1969).

[4] See Ostrom (1986), where she attempted to explicitly connect legislative voting outcomes and bureaucratic procedures. More generally, McGinnis (2011*b*:53, 70–71) has observed that rules-in-use are themselves outputs of other action situations. In neither case was the author concerned primarily with explicating the relations between formal laws and working rules.

What a "rule" is

Schlager and Ostrom (1992:250) define "rules" as "generally agreed-upon and enforced prescriptions that require, forbid, or permit specific actions for more than a single individual." This statement can usefully be decomposed into two elements that together comprise a rule: (1) deontic specification, i.e., the rule must specify actions that specified actors may, must, or must not perform; and (2) levels of compliance/enforcement, i.e., the rule must be obeyed and/or enforced to some, inevitably uncertain level below which it would no longer be considered a rule (see, e.g., Elmes 1966:51[5]) but something less, such as a standard, guideline, recommendation, ethic, signal, expression, or simply an empty gesture. For the sake of conceptual clarity, the examples of rules provided in this paper intentionally steer clear of the admittedly fuzzy boundaries of both deontic specification and obeisance/enforcement.

A spectrum exists between complete non-enforcement and 100% enforcement. Presumably, no one would require perfect enforcement as a defining condition for a "rule." For most rules, actual enforcement levels (not to mention the socially optimal level of enforcement) is far below 100% (see, e.g., Cole and Grossman 2010:346–347). But the problem of under-enforcement is tricky. At some point along the enforcement continuum, between perfect non-enforcement and perfect enforcement, the actual enforcement rate could become so low that it no longer makes sense to call the rule a "rule." Just where that point lies seems objectively indeterminate and so inherently subjective.

Formal legal rules are important for the IAD framework

Virtually all legal scholars today appreciate that formal legal rules and processes—including court rulings, duly enacted statutes, and subsidiary regulations—are not the only institutions that structure social relations. They have written about the important, sometimes dominant, roles of custom (see, e.g., Ehrlich [1936] 2009:chap. 19, Smith 2009), social norms (see, e.g., Ellickson 1991) and "legal pluralism" (see Griffiths 1986).[6] By contrast, formal legal rules sometimes are derided as "dead letters" because they are unable, by themselves, to affect behavior (see Kingston and Caballero 2009); or they are said to serve only an auxiliary function, "re-institutionalizing" existing customary rules that in the first place arise from social norms or customs within organizations, including churches, families, communities, and cultures (Bohannan 1965:34–37). Were that invariably the case, formal legal rules could safely be ignored without consequence. As it happens, however, formal legal rules are very often of great importance for understanding social interactions and individual behavior.

Elinor Ostrom would not disagree. In fact, she regularly invoked formal legal rules to explicate functional rule types. Formal legal mechanisms and processes featured prominently in her works on water allocation in Southern California, beginning with her 1965 PhD dissertation, which concerned the role of public entrepreneurs in devising groundwater management systems

[5] "The laws of the land share one great weakness with all other laws; they are not laws unless they are enforced."
[6] According to some legal pluralist theories, the legal academy is dominated by "legal centrists" who treat state-based legal norms as dominant. Any observer of the structure of professional legal education would have to concur, which is not to concede, however, that state-based legal rules do not predominate (at least in certain societies).

in California. Formal proceedings in state courts facilitated negotiations among stakeholders resulting in complex interagency agreements that were designed to ensure replenishment of groundwater supplies and prevent saltwater intrusion (see E. Ostrom 1965; also see V. Ostrom and E. Ostrom 1972:8[7]).

Ostrom wrote a great deal about various *types* of rules that condition activity in action arenas (see Crawford and Ostrom 1995, E. Ostrom 2005:chaps. 5 and 7), but she never explained how formal laws related to the "working rules." Table 1 describes Ostrom's rule types; and Figure 3 shows how those rules are supposed to come into play in action situations.[8]

Table 1 Types of Rules

Type of Rule	Function of Rule
Position rules	Create positions (e.g., member, judge, voter, representative) that actors may hold.
Boundary rules	Define (1) who is eligible to hold a certain position, (2) the process by which positions are assigned to actors (including rules of succession), and (3) how positions may be exited.
Choice rules	Prescribe actions actors in positions must, must not, or may take in various circumstances.
Aggregation rules	Determine how many, and which, players must participate in a given collective- or operational-choice decision.
Information rules	Authorize channels of information flows available to participants, including assignation of obligations, permissions, or prohibitions on communication.
Payoff rules	Assign rewards or sanctions to particular actions that have been taken or based on outcomes.
Scope rules	Delimit the range of possible outcomes. In the absence of a scope rule, actors can affect any physically possible outcomes.

[7] "The structure of incentives inherent in the law of water rights is clearly not sufficient to constitute a variety of collective enterprises capable of increasing the supply of water services available to a community of water users. Such users must have access to courts, legislatures and other decision-making facilities capable of taking authoritative decisions in determining, enforcing and in altering decision-making arrangements."

[8] I am not here arguing that Ostrom's rule types constitute all possible rule types affecting action situations (there may be others) or, more importantly, that her rule types are always instituted as actual rules, under her strict definition of "rule" (discussed above). It is easy to imagine, for example, that a player's "position" in some focal action situation is determined by custom or tradition rather than "rule." Nevertheless, the various formal legal rules by which she exemplifies the rule types in *Understanding Institutional Diversity* are, in fact, rules on her definition.

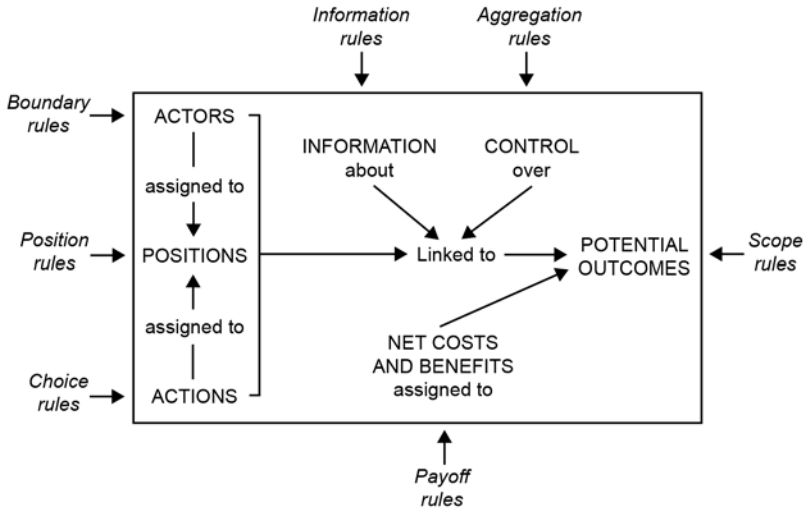

Figure 3. How Various Types of Rules Affect Action Situations.

Interestingly, in *Understanding Institutional Diversity*, Ostrom (2005:chap. 7) relies almost exclusively on *formal* legal rules and processes to explicate the rule types in Table 1 and Figure 3. For example, in describing "position rules," she refers to the U.S. Constitution's age and citizenship conditions for membership in Congress, rules of criminal procedure requiring arrested actors to participate in court proceedings against them, and the general requirement to pay taxes consistent with the tax code (E. Ostrom 2005:195–196). She illustrates "exit rules" with legal requirements of term limits for some elective officeholders (as well as prisoners), and by reference to litigants in civil justice settings who choose to settle out of court (E. Ostrom 2005:198–200). "Aggregation rules" are exemplified by formal amendment processes for legislation, a task requiring the cooperation of multiple legislators (E. Ostrom 2005:202). Ostrom explains "payoff rules" by reference to labor contracts. And "scope rules" are illustrated by government regulations that specify the goal to be achieved, but allow regulated entities discretion in how best to achieve that goal (E. Ostrom 2005:209). This extensive reliance on formal legal rules to exemplify rule types suggests that, for Ostrom, legal rules were more than just words on paper.

Ostrom (2005:62, fig. 2.4) also directly related (with arrows) formal legal rules (as well as informal social norms) to "[o]perational rules in use" (see Fig. 4). But, again, she failed to explain or offer examples of processes by which those relations arise or persist.

Most tellingly, the very structure of the IAD framework, which is designed to work at different levels of social choice, suggests that formal legal rules often (if not always) are expected to play a significant role. The framework's differentiation of constitutional- and collective-level choices presupposes that the outputs of those processes—constitutional and legal rules and regulations, respectively—can and do affect operational-level choices (see E. Ostrom 2005:214–215). Thus, the law is imbricated within the structure of the IAD framework.

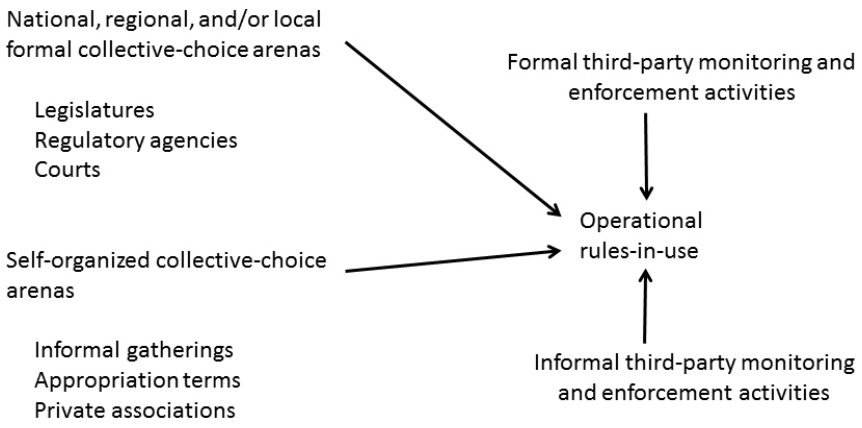

Figure 4. How Formal and Informal Institutions Create "Operational Rules in Use."

Nevertheless, in the framework itself, formal legal rules appear only as generic "rules," or more often in the somewhat loaded phrase, "rules-in-use," which is often used (though not by Ostrom herself) in a way that denigrates formal legal rules. So, the question remains, by what process(es) and to what extent are formal legal rules translated or converted into "rules-in-use" (or "working rules")? This is decidedly not a question about formal institutions (laws) *versus* informal institutions (social norms) (see North 1990:3) but of how rules of any kind are understood, given effect, or operationalized within a given community. That process of translation or "mobilization" itself undoubtedly involves "patterns of interaction" observed across potentially numerous and diverse action situations.

A TENTATIVE TYPOLOGY OF RELATIONS BETWEEN FORMAL LAWS AND "WORKING RULES"

Relations between formal legal rules and "working rules," as well as those between formal legal rules and informal social norms (on which see, e.g., Hart 1961, Posner 2000, Brennan et al. 2013), are more complex and multidirectional than often is supposed. Institutionalists, both "old" (or "classical") and "new," appreciate that monitoring, enforcement, and sanctions are critical components of successful collective action, including for common-property management of common-pool resources, as evidenced in Ostrom's "design principles" (E. Ostrom 1990:90, table 3.1). Less well appreciated is that monitoring, enforcement, and sanctioning regimes are themselves complex adaptive systems, so that relations between formal laws and rules-in-use cannot be explained simply by a casual reference to monitoring, enforcement, and sanctioning. Rather, analysts must dig into the actual monitoring, enforcement, and sanctioning institutions and organizations of specific cases to learn whether, and to what extent, legal rules influence or determine the "working rules."

This section offers a (too) simple three-part typology of relations between formal legal rules and "working rules": (1) the formal legal rule *is* the "working rule," (2) the formal legal rule significantly influences the "working rule" (and sometimes vice versa), and (3) the formal legal rule bears no apparent relation to the "working rule." To illustrate each of these categories,

I adapt several of the examples Ostrom (2005:chap. 7) used to illustrate different rule types that affect action situations.

Type 1. Some legal rules ≈ [9] working rules

Some legal rules are so clear and controlling (within the relevant community) that they require virtually no interpretation or conversion (*via* implementation) into working rules. Ostrom (2005:195) exemplifies the notion of "boundary rules," for example, by referring to age requirements or term limits for certain political officeholders. It is difficult to imagine a plausible theory of constitutional interpretation under which the rule that an individual must be at least thirty-five years old to serve as president of the United States might be interpreted to allow a thirty-year-old individual to serve in that position. Technically, the constitutional rule is not self-enforcing—we can imagine a case where judicial enforcement of the rule is required—but it is so close to being self-enforcing in practice that it might be said to serve as both the formal rule and the working rule (or "rule-in-use").

Similarly, standard weights and measures, although they must be enforced from time to time against non-compliers, constitute the working rules. No act of interpretation is necessary to understand rules ranging from established time zones, rules of the road requiring drivers to use the left (or right) side of the road, the designation of the length of a mile or kilometer, setting the weight of one "ton" or the volume of a "liter." Individuals quickly learn to organize their activities around such rules and become habituated to them, almost as if they were part and parcel of their thought processes. These working rules are exactly the same as the formally institutionalized legal rules.

Many (but not all) rules in sports and games are also of this nature. In football (known as soccer among Americans), the entire ball must cross the entire goal line for a goal to be scored. There certainly are close calls in which it is difficult to determine whether a goal has in fact been scored (a problem diminished by improved goal-line technology). But such factual issues do not alter the relation between the formal rule and the working rule, which is one of identity. The rule is enforced as written, even in cases where its enforcement is difficult and/or contestable.

It might be objected that all the examples cited are relative rarities among all of the working rules in the world. That, however, is an empirical question that has hardly been raised, let alone studied systematically. Moreover, some of the rules listed above—certainly rules of the road and standard weights and measures—are among the most important rules in modern commercial societies.

Type 2. Some legal rules + widely held social norms ≈ working rules

Some legal rules that *could* be working rules if strictly enforced (like those in the preceding section) are not coextensive with the working rules because they are publicly known not to be strictly enforced and a prevalent social norm exists that, in effect, translates the formal legal rule

[9] The mathematical symbol "≈" means "approximates" or "nearly equals."

into a different but related working rule. A prime example here, to which Ostrom sometimes referred (see, e.g., E. Ostrom 2005:18), is the speed limit for motor vehicles on public highways. Posted speed limits represent the formal legal rules, and some motorists follow them strictly. But most motorists understand that enforcement is costly (and therefore imperfect) and that law enforcers are unlikely to pull them over unless they exceed the posted speed limit by a substantial amount. So, they follow an almost universal (at least in the United States) social norm of driving approximately five miles per hour above the posted limit (in good driving conditions).

Notice that the norm itself tells us nothing about the actual speed anyone is likely to drive on a given road–the working rule–unless we also know the posted (formal legal) speed limit. Moreover, motorists know that reliance on the working rule is not foolproof. Should a highway patrol officer choose to ticket a driver for exceeding the posted speed limit by only three miles per hour, a court of law will strictly enforce that decision, regardless of the prevailing social norm. The result would no doubt strike the unfortunate motorist as grossly unfair, but in case of conflict the formal legal rule would trump the working rule.[10] The bottom line is that, even if the working rule is not completely determined by the law-in-form (i.e., the posted speed limit), the formal legal rule plays an important role in determining the working rule.

To take another example from the sport of soccer, a rule-in-form provides that when a player from one team kicks the ball over the sideline, the other team takes possession of the ball for a "thrown in." In some circumstances, that formal rule simply *is* the working rule. But in certain well-understood circumstances, the formal rule is modified by a social norm (based on a notion of fairness or equity). So, if a player from Team A is injured on the field, and Team B kicks the ball out of play so that player can receive treatment, Team A obtains possession of the ball pursuant to the formal rule. However, in accordance with the social norm, Team A returns the ball to the possession of Team B as soon as play resumes. This situation might be viewed as an instantiation of Aristotle's injunction that general rules of law must be tempered by equity in order to do justice given the specific facts of individual cases (Aristotle 1941, *NE*, Book V, chap. 10, §1137b12–27).

How many cases are of this type, in which the working rule combines a formal legal rule with some informal social norm(s)? Once again, that is an empirical question requiring further investigation. No basis exists for presuming that this category is insubstantial. To the contrary, this category might well prove the largest.

Type 3. Some formal legal rules $\notin$[11] working rules

Some subset of legal institutions play no significant role in the organization of social behavior because they simply do not affect social interactions; indeed, some of them are not even intended

[10] There are of course special cases, such as where a motorist might bribe the police officer to avoid enforcement of the speed limit (whether the formal limit or the normal limit), but I am writing here about generalities, not special cases. Where bribery is not a special case but reflects, instead, a regular "pattern of interaction," that obviously implies that the rules-in-form are related only in a more attenuated way (if at all) to the working rules.

[11] The mathematical symbol "$\notin$" means "is not an element of (or in)."

to do so, being in the nature of precatory or symbolic acts. An example would be a law establishing an official state bird or tree.

In other cases, laws that are intended to have an impact on social behavior simply fail, as we saw earlier with the case of Prohibition in the United States. Robert Ellickson's (1991) famous book, *Order without Law*, presents another well-known case in point. California state law generally required cattle ranchers to "fence in" their cattle, in order to prevent them from damaging neighboring properties or wandering onto public highways. But Shasta County, by special exemption, was allowed to adopt a bifurcated rule. Cattle ranchers in some parts of the county were subject to the general state law of "fencing in." But in other sections of the county cattle ranchers could let their cattle roam free. In those sections, if a neighbor wanted to avoid property damage from wandering cattle, she had to "fence out" the cattle. Obviously, these alternative rules were about cost allocation between cattle ranchers and their neighbors. Under a legal rule of "fencing in," the cattle rancher bears the costs; under the rule of "fencing out," neighboring landowners bear the cost.

What Ellickson found when he went to Shasta County to conduct empirical research was that virtually no one abided by either of the alternative legal rules. In fact, they did not know the legal rules and, somewhat more surprisingly, neither did local lawyers who were sometimes called upon to help resolve disputes. However, in most cases disputes did not arise or did not long persist because local residents (with a few notable exceptions[12])—including cattle ranchers, crop farmers, and others—operated under a strong social norm of neighborliness, according to which neighbors cooperated, sharing the costs of fencing cattle out or in.

In Ellickson's case, a strong and effective social norm obviated and displaced the formal legal rules adopted by the county (pursuant to state law). But how generalizable is Ellickson's case? In the absence of many similar studies, we cannot even conduct a meta-analysis to help us answer that question. What we require is a great deal more empirical research. In the absence of that research, we cannot reliably conclude that strong social norms generally are more important or more influential than formal legal rules.

Just as importantly, the supposed dichotomy of social norms *versus* laws might generally be the wrong way to think about relations between those two categories of institutions.[13] As already established, formal laws often influence or even determine working rules. At the same time, it is clear that social norms often influence the substance of formal laws. So, for example, the unofficial norms regarding water use adopted by miners during the California gold rush (1850s) were subsequently recognized in courts of law (*Hicks v. Bell*, 3 Cal 219 (1853); *Irwin v. Phillips*, 5 Cal 140 (1855)), then codified into state law (Civil Code of the State of California 268–70 (1872)), and ultimately constitutionalized (see Debates and Proceedings of the Constitutional Convention of the State of California 482 (1880)).

[12] Some outliers existed, but they were dealt with, usually to good effect, by social sanctions, including as a last resort ostracism.

[13] Brennan et al. (2013:51), for example, distinguish formal and non-formal norms along dimensions, including (1) the mechanisms by which they are created, (2) the mechanisms by which they are enforced, (3) *de re v. de dicto* "normative attitudes," and (4) effects on actions vs. effects on actions, attitudes, and modes of deliberation.

In the somewhat similar context of irrigation rules, Insa Theesfeld (2004:253) finds a dynamic relationship between formal rules and "rules-in-use" that, sometimes at least, can lead to an ever-increasing reduction in the relevance of the formal rules, followed eventually by their eventual replacement with new formal rules:

> First, rules-in-use pave the way for opportunistic strategies. The opportunistic strategies in turn change the rule-in-use, and the incongruity between formal and effective rules increases. Because of the higher incongruity, possibilities for opportunistic strategies increase once again. Second, opportunistic strategies appear and, in response, a certain rule-in-use develops. This effective rule is not congruent with the formal rule. The incongruity increases and the possibilities for opportunistic strategies increase once again. Finally, in the long run, growing incongruity enables a feedback that influences the development of the formal rules.

Theesfeld's account of how "opportunistic strategies" alter "rules-in-use" and, ultimately, formal rules is, once again, congruent with the history of Prohibition in the United States. Moreover, the kind of strategic opportunism highlighted in her treatment of formal rules and "rules-in-use" is very much present in the IAD framework's "Community Attributes" box (see Fig. 1). Actors enter into action situations in various positions (citizen, corporate CEO, lobbyist, fund-raiser, legislator, law enforcer, judge, etc.), possessing whatever powers and strategies. The implication, as I suggested earlier, is that the various processes by which formal rules are transformed into working rules are themselves action situations, including law enforcement and other action situations in which legal rules are evaluated and/or interpreted. It is the "pattern of interactions" resulting from those situations that ultimately determines (1) what the working rules are, (2) whether those rules deviate significantly from the formal rules, and (3) the extent of any such deviation. Importantly, Theesfeld (2004) does not presume a high level of "incongruity" between formal rules and "rules-in-use." That is, after all, an empirical question.

When a particular legal rule appears to have no bearing on a particular working rule, we should not assume that the working rule is superior or more desirable. Some social norms are inefficient, morally abhorrent, resistant to change,[14] or all of the above. After the U.S. Civil War, social norms of racism gave rise to state laws that perpetuated the oppression of former slaves, despite their supposedly superior constitutional rights under the newly enacted and ratified Fourteenth and Fifteenth Amendments to the U.S. Constitution. Indeed, the Fourteenth Amendment's Equal Protection Clause went virtually unenforced before the turn of the twentieth century, and the last vestiges of *official* "Jim Crow" were not extirpated in the southern United States until passage of the Civil Rights Act in 1964 and the Voting Rights Act in 1965 (see generally Woodward [1955] 2002, Ackerman 2014).[15]

In the case of civil rights for African Americans, the deplorable social norms were so powerful that they could not simply or easily be displaced even by a strong constitutional rule with inconsistent and ineffectual federal enforcement efforts. Eventually, over a long period of

[14] Leach and Lowndes (2007:186) observe that "informal rules may prove especially tenacious and resistant to change, existing in parallel—or even direct contradiction—to formal rules."
[15] Unofficial vestiges of "Jim Crow" persist to the present day (see, e.g., Bodo 2011).

time, they were eroded (but still not eradicated) by a combination of: legal processes, including court decisions like *Brown v. Board of Education*, 347 U.S. 483 (1954); policy decisions, for instance racial integration of the military in 1948 by Executive Order of the President;[16] as well as, less formal political and social pressures. This goes to show that, in some cases at least, "opportunistic strategies" of opposition may prevail for some time but ultimately be subdued by consistent enforcement of countervailing formal legal rules.

Even in less politically divisive circumstances of incremental law reform, changes in formal rules often are "filtered" by those charged with implementing or carrying out the reforms. The result can be institutional changes that are "differentially interpreted, mediated and (in some cases) neutralized" (Lowndes and Leach 2004:559). Thus, in a series of case studies of implementation of the UK's Local Government Act of 2000, Lowndes and Leach (2004) found that local government authorities overwhelmingly implemented the reform law in ways that minimized the total amount of change.

The three types of relations between formal legal rules and "working rules" described in this paper can be conceived as ranges along a continuum, with Type 1 and Type 3 at either end and Type 2 in the middle. The problem, of course, is that such a stylized continuum gives us no real clue as to the actual roles each of the three types of relations between formal rules and working rules play in real-world action situations. For that, we require multiple empirical studies and meta-analyses of cases involving each type of relation. It is simply not enough to extrapolate from a few discrete cases that formal legal rules are all that matter, are part of what matters, or do not matter at all.

CONCLUSION

Perhaps because Elinor Ostrom most often used the IAD framework to study small-scale communities that successfully established working rules to self-govern local common-pool resources, she did not spend much time studying how and to what extent formal legal rules influence "rules-in-use."[17] But she intended the IAD as a generalized framework for diagnosing and possibly predicting collective action, including in dynamic settings. It was not designed only to diagnose local common-pool resource issues, where formal legal rules might be expected to play a very limited role.

But even in local common-property regimes, rules often are codified and more or less formal mechanisms established for monitoring and enforcing compliance. When a group of fishers establishes a common-property regime along with rules regulating who can fish where and when, those rules often are *formalized* in writing and supported by other institutions for monitoring, enforcement, and sanctioning (see, e.g., Berkes 1986). Many local fisheries' management schemes are highly sophisticated—much more like formal legal rules or corporate bylaws than like informal social norms.

[16] Executive Order 9981, 3 CFR 722 (1948).

[17] She did, however, observe cases where "formal rules" prevented effective management of local common-pool resources by delegating insufficient authority to local users (see, e.g., E. Ostrom 1995:39). Even then, it was not the existence of formal rules per se that was the problem.

The clearest evidence that Ostrom expected formal legal rules to play a significant role in IAD settings comes from the framework itself, which she employed at constitutional and policy levels of collective choice, where formal rules (and meta-rules) come from. And, when she parsed different kinds of "rules-in-use" in her most in-depth treatment of the IAD framework in *Understanding Institutional Diversity*, she almost exclusively relied on formal legal rules to exemplify them.

Given all that, it seems that formal legal rules should play a more substantial role in studies employing the IAD framework than they have done so far. But a great deal more empirical work needs to be done to assess how often, how many, and simply how various formal rules affect the working rules of the game. This is a job for both legal scholars and social scientists. Even before that empirical work is done, however, scholars using the IAD framework should play closer attention not only to the working rules that affect the action situations they are studying but also how those working rules are formed through other action situations, including (but not exclusively) formal legal processes.

LITERATURE CITED

Ackerman, B. 2014. *We the people: volume 3: the civil rights revolution*. Belknap Press, Cambridge, Massachusetts, USA.

Aligica, P. D. 2006. Institutional and stakeholder mapping: frameworks for policy analysis and institutional change. *Public Organization Review* 6:79–90.

Aristotle. 1941. Nicomachean ethics. Pages 927–1112 *in* R. McKeon, translator. *The basic works of Aristotle*. Random House, New York, New York, USA.

Berkes, F. 1986. Local-level management and the commons problem. *Marine Policy* 10(3):215–229.

Bodo, L. D. 2011. Somewhere between Jim Crow and post-racialism: reflections on the racial divide in America today. *Daedalus* 140:11–36.

Bohannan, P. 1965. The differing realms of the law. *American Anthropologist* 67(6):33–42.

Brennan, G., L. Eriksson, R. E. Goodin, and N. Southwood. 2013. *Explaining norms*. Oxford University Press, Oxford, UK.

Cole, D. H., and P. Z. Grossman. 2011. *Principles of law and economics.* 2nd edition. Wolters Kluwer, New York, New York, USA.

Commons, J. R. 1959. *Legal foundations of capitalism.* University of Wisconsin Press, Madison, Wisconsin, USA.

Crawford, S. E. S., and E. Ostrom. 1995. A grammar of institutions. *American Political Science Review* 89(3):582–600.

Ehrlich, E. [1936] 2009. *Fundamental principles of the sociology of law*. Transaction, New Brunswick, New Jersey, USA.

Ellickson, R. C. 1991. *Order without law: how neighbors settle disputes*. Harvard University Press, Cambridge, Massachusetts, USA.

Elmes, F. 1966. Government and people: III: when is a law not a law? *Police Journal* 39:47–54.

Griffiths, J. 1986. What is legal pluralism? *Journal of Legal Pluralism and Unofficial Law* 32:1–55.

Hart, H. L. A. 1961. *The concept of law.* Clarendon Press, Oxford, UK.

Kingston, C., and G. Caballero. 2009. Comparing theories of institutional change. *Journal of Institutional Economics* 5:151–180.

Kiser, L. L., and E. Ostrom. 1982. The three worlds of action: a metatheoretical synthesis of institutional approaches. Pages 179–222 *in* E. Ostrom, editor. *Strategies of political inquiry*. Sage, Beverly Hills, California, USA.

Leach, S., and V. Lowndes. 2007. Of roles and rules: analyzing the changing relationship between political leaders and chief executives in local government. *Public Policy & Administration* 22:183–200.

Lowndes, V., and S. Leach. 2004. Understanding local political leadership: constitutions, contexts and capabilities. *Local Government Studies* 30(4):557–575.

McGinnis, M. D. 2011*a*. An introduction to the IAD and the language of the Ostrom Workshop: a simple guide to a complex framework. *Policy Studies Journal* 39(1):169–183.

McGinnis, M. D. 2011*b*. Networks of adjacent action situations in polycentric governance. *Policy Studies Journal* 39:51–78.

Menell, S. J. 1969. Prohibition: a sociological view. *Journal of American Studies* 3:159–175.

Miron, J. A., and J. Zwiebel. 1991. Alcohol consumption during Prohibition. *American Economic Review* 81(2):242–247.

North, D. C. 1990. *Institutions, institutional change, and economic performance*. Cambridge University Press, Cambridge, Massachusetts, USA.

Ostrom, E. 1965. Public entrepreneurship: a case study in ground water basin management. Dissertation, University of California, Los Angeles, California, USA. http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/3581/eostr001.pdf?sequence=1.

Ostrom, E. 1986. Multiorganizational arrangements and coordination: an application of institutional analysis. Pages 495–510 *in* F. X. Kaufmann, G. Majone, and V. Ostrom, editors. *Guidance, control, and evaluation in the public sector*. Walter de Gruyter, New York, New York, USA.

Ostrom, E. 1990. *Governing the commons: the evolution of institutions for collective action.* Cambridge University Press, New York, New York, USA.

Ostrom, E. 1995. Designing complexity to govern complexity. Pages 33–45 in S. Hanna and M. Munasinghe, editors. *Property rights and the environment: social and ecological issues*. Beijer International Institute for Ecological Economics and The World Bank, New York, New York, USA.

Ostrom, E. 2005. *Understanding institutional diversity*. Princeton University Press, Princeton, New Jersey, USA.

Ostrom, E. 2007. A diagnostic approach for going beyond panaceas. *Proceedings of the National Academies of Sciences* 104(39):15181–15187.

Ostrom, E. 2009. A general framework for analyzing sustainability of social-ecological systems. *Science* 325(5939):419–422.

Ostrom, E. 2010. Beyond markets and states: polycentric governance of complex economic systems. *American Economic Review* 100(3):641–672.

Ostrom, E., and M. Cox. 2010. Moving beyond panaceas: a multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation* 37(4):451–463.

Ostrom, V. 1976. John R. Commons's foundations for policy analysis. *Journal of Economic Issues* 10(4):839–857.

Ostrom, V., and E. Ostrom. 1972. Legal and political conditions of water resource development. *Land Economics* 48(1):1–14.

Posner, E. 2000. *Law and social norms*. Harvard University Press, Cambridge, Massachusetts, USA.
Pound, R. 1910. Law in books and law in action. *American Law Review* 44:12–36.
Schlager, E., and E. Ostrom. 1992. Property-rights regimes and natural resources: a conceptual analysis. *Land Economics* 68(3):249–262.
Smith, H. E. 2009. Community and custom in property. *Theoretical Inquiries in Law* 10:5–41.
Theesfeld, I. 2004. Constraints on collective action in a transitional economy: the case of Bulgaria's irrigation sector. *World Development* 32:251–271.
Woodward, C. V. [1955] 2002. *The strange career of Jim Crow*. Oxford University Press, Oxford, UK.
Yandle, B. 1983. Bootleggers and Baptists: the education of a regulatory economist. *Regulation* (May/June): 12–16.