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Law without the State: Legal Attributes and the Coordination of Decentralized Collective Punishment

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Abstract

Most economic and positive political theory presumes the existence of an effective legal regime (protecting property rights or implementing legislative or judicial choices, for example). Yet social science has devoted little systematic attention to the question of what constitutes distinctively legal order. Most social scientists take for granted that law is defined by the presence of a centralized authority capable of exacting coercive penalties for violations of legal rules. Moreover, the existing approach to analyzing law in economics and positive political theory works with a very thin concept of law, one that does not account for the distinctive attributes of legal order as compared with other forms of social order. This approach, however, leaves us with few tools to answer key questions about the emergence and maintenance of legal order, particularly in settings with weak governance. In this paper we discuss three of the key case studies that appear in the law, economics and politics literature and which explore the role of "law" in securing social order: medieval Iceland, California during the gold rush and the world of the medieval merchants in Europe and the Muslim Mediterranean. Drawing on a model we have developed elsewhere (Hadfield and Weingast 2012**)**, we reinterpret these case studies to demonstrate how a theoretically-informed approach to law, one that employs a rich conception of what is distinctive about law and which, in particular, attends to the problems of coordinating decentralized collective punishment, illuminates key questions about the emergence, stability and function of law in supporting economic and democratic growth

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I. Introduction

As Dixit (2006, 3) observes, "conventional economic theory . . . takes the existence of a well-functioning institution of state law for granted. It assumes that the state has a monopoly over the use of coercion." Scholars routinely make this presumption without analysis. Compliance with property rules, economic regulation, or contract obligations are presumed to rest on the capacity of a centralized state authority to impose coercive penalties for rule violations such as fines, damages or imprisonment. Social scientists conventionally presume that the absence of state coercion implies "lawlessness" or, more precisely, reliance on alternative non-legal methods of achieving economic governance and social order, such as reputation or social sanctions. Distinguishing law from social norms Ellickson (1992,127), for example, defines law as rules that are enforced by governments rather than social forces.

Modern developed economies all have well-established systems of law. The assumption that a legal order is, by definition, characterized by centralized coercive force to impose penalties for rule violations is therefore natural; for example, when analyzing central topics in economics, such as optimal tax policy, the design of contractual mechanisms to induce an agent or partner to exert efficient levels of effort or reveal private information, or regulations to control pollution. But identifying a legal order with a centralized, coercive authority leaves us with few tools with which to analyze systematically the emergence or construction of legal order as an economic or political phenomenon where legal systems are not already well-established.

Scholars in the law, economics, and politics literatures have, however, studied several important historical examples of the emergence of a legal order prior to the rise of nation-states. These examples include:

Medieval Iceland. Dating back to Bryce (1901), medieval Iceland has served as a canonical example of a minimal state, one that sustained three hundred years of relatively stable legal order despite the absence of a centralized government with coercive power. Friedman (1979) integrates this example into the law and economics literature, arguing that the case shows the potential for law to be enforced exclusively through private rights to extract retribution and compensation.

Gold Rush California. Umbeck (1977) analyzes the emergence of a stable system of property rights in Gold Rush California beginning in 1848 at a time when California lacked a government capable of enforcing legal rules (see also McDowell 2002, 2004 and Clay and Wright 2005). McDowell (2004), for example, uses the economic theory of the spontaneous evolution of self-enforcing norms to minimize losses due to conflict over resources (Sugden 1986) to argue that the particular rules that governed the mining camps of the Gold Rush were able to establish peaceful legal order based only on the exercise of self-interest in the context of a coordination game.[1]

Medieval Merchants. Set in the context of medieval Europe and the Muslim Mediterranean, a large and influential literature in law, economics and positive political theory has emerged that studies the rise of legal and cultural institutions designed to facilitate commerce (Benson 1989a, Grief 1989, 2006, Greif, Milgrom and Weingast 1994, Milgrom, North and Weingast 1990, and Trakman 1983). This literature explores

[1] McDowell's work is an example of the much broader theoretical literature on the focal point role of law as a coordinating device (McAdams 2000, Myerson 2004).

the role of non-governmental institutions in supporting the expansion of impersonal trade, such as merchant guilds, the Law Merchant, and the closed communities of traders such as the Maghribi. The literature on medieval merchant law seeks to explain how and why these formal legal institutions emerged prior to the rise of nation-states in the institutionally much more diversified and fluid context of the Commercial Revolution.

These cases demonstrate that it is problematic to identify law with centralized coercion and they shed some light on the nature of legal order in settings without centralized coercive authority. A missing element in all these works, however, is attention to the characteristics of law itself. Virtually all these works employ a thin conception of law. They do not explain what attributes a set of rules must have to be considered law; nor do they explain why the decentralized systems they study produce rules with distinctively legal attributes.

In this paper, we revisit these three canonical cases to study in greater detail the role of legal institutions in supporting order in settings that lack a well-organized central enforcement authority. We go beyond the literature in three ways.

First, we draw on a framework developed in in our earlier work (Hadfield and Weingast 2012) to analyze these historical cases using a rich, functional conception of law, one that differentiates it from other forms of rules, such as custom or regulation. As in both H.L.A. Hart (1961) and Fuller (1964), our framework isolates the capacity for deliberate control over the normative classification as the central feature distinguishing a legal from a purely social order.[2] We then look at what further characteristics the

[2] Hart (1961) emphasized the capacity to choose the content of norms as a defining feature of a legal system: his secondary rules for making (or changing) primary rules of behavior speak to this distinction

institutions supporting legal order must possess in order to sustain equilibrium legal order in a setting that relies exclusively on decentralized collective punishment. By decentralized collective punishment we mean punishments delivered by ordinary individuals—not officials—to penalize rule violations. Such punishments include criticism, social ostracism, commercial boycott, reputational degradation, and physical retaliation. The literature classifies these types of enforcement mechanisms as informal and social, as contrasted with the formal penalties imposed by an entity with formal coercive authority. They are the types of enforcement emphasized by the existing treatment of our three cases.

Hadfield and Weingast (2012) show that equilibrium legal order can be achieved in an environment that lacks the capacity for centralized coercive enforcement in the following circumstances: there is an identifiable entity that serves as an authoritative steward of a unique, clear and non-contradictory normative classification that is prospective and reasonably stable. This classification must be public and common knowledge. It must enable ordinary individuals to predict reasonably well the classifications that the system will reach through the use of impersonal, neutral, and independent reasoning to extend generalizable classifications to specific and novel circumstances. To accomplish the latter and improve the potential for the general classifications to capture the interests and information of idiosyncratically informed individuals, we suggest the institution coordinating legal order must also be open in the sense that it provides a mechanism whereby idiosyncratic knowledge and reasoning can be integrated into generalized reasoning. Finally, the equilibrium classification employed

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between spontaneous order and legal order. Fuller (1964) emphasized the attributes of the deliberate "enterprise" of governing by rules necessary to achieve a governor's desired outcome.

by the coordinating institution must make those who participate in enforcing its judgments better off under the system as a whole. If this condition fails, individuals will not participate. This condition, in turn, requires that the classification be sufficiently universal in the sense of attending to the needs and interests of those who play an important role in decentralized enforcement.

Our second departure from the existing literature, then, is the deployment of an equilibrium framework that focuses on the relationships between the attributes of distinctively legal institutions and the coordination and incentives necessary for decentralized enforcement.

Third, we contribute to the existing analysis of the canonical cases of medieval Iceland, California during the gold rush, and the world of the medieval merchants. Our model allows us both to see the features of these systems in a new light and to bring a fresh perspective to the analysis of why these systems, ultimately, were displaced.

We demonstrate that, in each case, the system of rules possessed the key characteristics our framework associates with law; namely, that the rules were characterized by legal attributes and there existed an authoritative steward capable of deliberately articulating and changing the rules. For example, the Law Speaker in Medieval Iceland, with expertise in legal rules and reasoning, comes through in our analysis as an authoritative steward capable of articulating the law and making definitive rulings about the law. As another example, during the gold rush, a "one claim only" rule emerged in the mining camps, placing limits on the size and number of claims on which a miner could work. While the existing literature attributes this rule to ideology or a miner's uncertainty about his future interests, our analysis suggests interpreting this rule

as a universality constraint necessary to secure widespread participation in enforcement might be expressed. As a final example, the literature on medieval merchants documents the gradual but critical shift from order secured through closed community-based systems – such as the Maghribis or the medieval guilds – to order secured through public and state-based courts. These scholars attribute this shift to changes in belief systems or the availability of centralized force. Our approach adds to this view. We emphasize that more broadly-based formal legal institutions also helped achieve more widespread and stable coordination of decentralized enforcement efforts.

Section 2 presents a brief theoretical overview of the relationship between the legal attributes and the problem of coordinating and incentivizing decentralized collective enforcement. We then discuss each of our cases—medieval Iceland, gold rush California and the world of the medieval merchants—in Sections 3, 4 and 5. Section 6 offers some observations about the role of centralization and coercion. Our conclusions follow.

II. What is Law? A Coordination Account of the Characteristics of Legal Order

By eschewing the assumption that a legal system is defined as a body of rules that are written and enforced by a centralized public authority with effective coercive power, we face the problem of choosing an alternative basis on which to say that law exists in a given environment. If, for example, Medieval Iceland lacked any government enforcement authority, then what does it mean to assert that Icelandic society in the eleventh century had a legal system?

Although economists and positive political theorists have generally not explored this question systematically (Benson (1989b) and Kornhauser (2004) are exceptions),

legal anthropologists and sociologists have. Anthropologists have faced the question of determining whether pre-industrial communities such as foragers or hunter-gatherers possess a legal system and if so, how to identify its content. Hoebel (1954), for example uses the following definition to analyze the legal practices and rules among those he called "primitive man:"

> A social norm is legal if its neglect or infraction is regularly met, in threat or in fact, by the application of physical force by an individual or group possessing the socially recognized privilege of so acting. (Hoebel 1954, p. 28)

Sociologists have considered the question of the various forms of social order and the distinctive features of legal order. Weber defined legal order as order achieved at least in part by the probability that a "coercive apparatus" would be mobilized to impose a penalty, physical or psychological, in reaction to a norm violation simply because the norm is violated—and not to achieve any other material benefit. The "coercive apparatus" is understood by Weber to be "one or more persons whose special task it is to hold themselves ready to apply specially provided means of coercion (legal coercion) for the purposes of norm enforcement." (Weber 1978, p. 313) Recognizing that "a consociation specifically dedicated to the purpose of 'legal coercion' . . . has not always been the monopoly of the political community" (p. 317), Weber explicitly takes account of the possibility that law may exist in environments that lack a state, and indeed may possess instances of "legal order" that co-exist with the state but are not enforced by the state.

We approach the problem of identifying law without presuming state enforcement by first placing law within this broader framework of distinguishing among different

types of social order.[3] All human societies display various forms and degrees of social order, meaning behavior that is patterned in identifiable ways. People shake hands when they meet; they pay their bills; they stand an appropriate distance apart when speaking to a stranger. Order arises from many sources including biology, technology, morality and social sanction. If we are to call the resulting order "legal", we suggest, it should at least possess the following necessary characteristics. Note that we are not making the reverse claim: that any social order that possesses the following characteristics is legal; nor are we claiming that these characteristics are sufficient to identify an order as legal.

1. **Behavior is patterned on a *normative classification*, that is, the orderliness of behavior is with reference to a designation of some behaviors as preferred to other behaviors.**
2. **The content of the normative classification is capable of being deliberately chosen, articulated and identified by an identifiable actor or entity.**

Hadfield & Weingast (2012) model an environment that potentially meets these initial criteria so that we can say that we may be modeling a legal order. That is, we consider an environment that includes institutions that are capable of supplying a deliberately chosen normative classification of conduct and where the incentive for actors to choose behavior that the classification designates as preferred (we will say "not wrongful") is to avoid incurring a penalty. We do not, however, assume that an institution that supplies the normative classification is an institution also capable of imposing penalties for wrongful behavior. We model instead an environment in which the only way in which behavior classified as wrongful by an institution can be punished is through decentralized enforcement efforts. Specifically we look at a form of collective

[3] Kornhauser (2004) proposes a similar exercise, developing a social-scientific account of law by placing the question within the broader framework of developing a social-scientific theory of governance structures. Kornhauser's approach is in the spirit of ours but has not as yet proposed a particular set of criteria for distinguishing between legal governance and other forms of governance.

punishment whereby delivery of an effective penalty depends on independent and simultaneous decisions made by individual (non-official) actors to punish a wrongdoer.[4] We then ask the question: is it possible to secure an equilibrium in which wrongdoing, according to the classification of some institution, is effectively deterred by this form of collective, decentralized, punishment without resort to a centralized, state-based source of coercion? If so, we argue, we will have shown the potential to achieve a social order that meets the above criteria for a legal order and so may be properly characterized as a legal order.

A key assumption in our model is that individual judgments about what constitutes wrongful behavior are the product of what we call an *idiosyncratic logic* employed by each potential punisher. By idiosyncratic we mean that the potential punisher's reasoning is (in the extreme) inaccessible to others. This assumption captures an important and economically valuable form of heterogeneity, arising from the division of labor and specialization: the potential punishers (and beneficiaries of a stable system of rules) may be in different countries or industries; they may employ different production methods; they may organize their relationships and contracts with others in different ways. Social welfare in this economy is higher if rule violations can be deterred. But in the absence of a centralized third-party institution capable of punishing rule violations, deterrence must be achieved through the delivery of decentralized

[4] There is a burgeoning literature in behavioral economics and evolutionary game theory that considers the role of this type of punishment in generating cooperation. This literature sometimes refers to such punishment as "altruistic punishment" because punishers do not receive a direct material benefit for engaging in costly punishment. Fehr & Gachter (2002) show that people in laboratory settings are frequently willing to engage in such conduct; Henrich et al (2010) demonstrate this for several populations around the world. Boyd, Gintis & Bowles (2010) model the role of such a punishment strategy in the evolution of cooperation. Basu (2000) expressly considers the coordination of the actions of official enforcers. This literature is discussed in more depth in Hadfield & Weingast (2012).

punishments. Our model assumes in particular that the only available form of punishment to secure deterrence is decentralized collective punishment.

Achieving deterrence therefore requires coordinating collective punishment in response to particular actions. This presents two essential problems. First, because each potential punisher has an idiosyncratic logic for assessing wrongfulness, none are able to determine unilaterally when to punish in response to possible rule violations. The punishers need a coordination device that tells them when to punish. Second, because punishment is individually costly, punishers need an incentive to punish. Note that unlike the law and social norms literature, as well as some recent legal philosophy literature, this is not a pure coordination game: coordination alone provides an insufficient incentive to participate.

Hadfield and Weingast (2012) show that there exists an equilibrium in this repeated game in which a third party institution supplying a publicly accessible normative classification system—what we call a *common logic*—can resolve the coordination and incentive problems and secure deterrence of actions that are deemed wrongful by the common logic. Thus the equilibrium satisfies the minimal criteria we suggest are necessary (but not sufficient) to reasonably identify social order as legal order: behavior is patterned on the basis of a normative classification, the content of which can be deliberately supplied and changed by an identifiable entity.

Moreover, as we investigate the characteristics of that equilibrium, we see that it possesses characteristics that are generally thought by legal scholars and philosophers to be distinctively legal. In particular, we argue that the equilibrium we have identified is characterized by attributes that are frequently identified as marking the existence of law

by legal theorists such as Fuller (1964), Raz (1977) and Waldron (2008).[5] These attributes are:

- *Generality, stability, prospectivity and congruence*
- *Qualified universality*
- *Clarity, non-contradiction, uniqueness: authoritative stewardship*
- *Impersonal, neutral and independent reasoning*

Each of these attributes plays a role in resolving either the coordination problem or the incentive compatibility problem facing the reliance on decentralized collective punishment.[6]

Consider the coordination problem first. The common logic serves as a coordinating device by providing a publicly accessible, clear and unique classification of conduct based on impersonal reasoning and either general rules or generalizable categories. Potential punishers can determine the classification of conduct by the common logic, even in light of new or novel circumstances (which we expect to arise in the context of diversity and economic growth.) The common logic reaches a unique classification for any performance and thus punishers receive the same signal about whether to punish or not. Moreover, the classification is common knowledge. Hence, contingent on each potential punisher having concluded that the other punishers who are needed to make punishment effective also have an incentive to punish, all punishers can predict that if they punish, the others will too. Furthermore, it is common knowledge that the potential wrongdoer can also access the common logic, implement the same

[5] These theorists disagree about whether all of these attributes are required to properly identify a system as legal, as opposed to one that displays the normatively desirable characteristics of the rule of law. We do not distinguish between these claims here. See Hadfield & Weingast (2012) for more discussion.
[6] For a complete analysis of these attributes and their relationship to the equilibrium we describe, see Hadfield & Weingast (2012).

impersonal reasoning, and make this prediction. The punishers can therefore predict that the potential wrongdoer will avoid conduct that triggers collective punishment.

A key feature of the common logic helps to ensure that the logic can perform this coordination role. We refer to this as *authoritative stewardship*. By this we mean that that there is a single identifiable institution whose responsibility is to resolve any ambiguity or uncertainty about the classification reached by the common logic. The steward also helps adapt the common logic to changing circumstances. This institution serves to ensure both uniqueness and common knowledge of uniqueness. Suppose the conduct in question is particularly novel or complex, requiring the elaboration of a general principle in the context of previously unseen facts. For the common logic to continue to perform its role in coordinating punishment, it must be that all agents are known to treat the steward as the authoritative and final means of resolving ambiguity in the logic.

Other features of the common logic help to resolve the incentive compatibility problem of participation in collective punishment. In our model, the incentive to participate is that it secures the benefits of the coordinated equilibrium in which rule violations are deterred. This benefit is enjoyed by an individual agent only if the common logic classifies as wrongful conduct that the agent judges, according to its idiosyncratic logic, to be undesirable. The concordance between the common and the idiosyncratic logic need not be perfect, but the two logics must be sufficiently convergent that the agent is better off in the coordinated equilibrium with some deterrence than the uncoordinated equilibrium with none. As we show in Hadfield & Weingast (2012), by participating in punishment activity, an individual agent signals to the other agents that

the common logic that coordinates deterrence is or continues to be sufficiently convergent with its own idiosyncratic logic to make continued coordination valuable.

The resolution of the incentive problem thus requires that each agent be able to assess the value of future coordination under the common logic, that is, to determine how often the common logic will classify as wrongful conduct that the agent judges to be wrongful. As with the coordination problem, this requires a clear, accessible reasoning scheme that is impersonal in the sense that its classifications do not depend on the identity of the individual who is implementing the reasoning. The common logic must be universal in the qualified sense that it includes rules that benefit all those who are necessary to make collective punishment effective. To allow necessary punishers to assess how the common logic might be of benefit to them, the common logic will have to consist of general principles that each agent can elaborate on the basis of its private information about the nature of the facts and circumstances that would be relevant if the agent suffered a wrong. It is also likely in a complex world that the common logic will possess open processes for elaborating general principles, allowing agents who object to conduct as wrongful to introduce privately known facts and idiosyncratic reasoning about why those facts should result in a finding of wrongfulness under the common logic. With such openness, a system can achieve higher levels of convergence between idiosyncratic and common logic and hence is more likely to be adopted and remain stable over time. Finally, the common logic must be stable for a period of time sufficient to allow punishers to recoup their upfront investments in costly punishment to signal participation.

The virtue of our model, then, is that it provides a positive basis for predicting that an equilibrium in which the deterrence of wrongful behavior is supported exclusively

by decentralized collective punishment is likely to possess attractive normative characteristics frequently associated with the rule of law.[7] Because these legal attributes play an instrumental role in establishing an equilibrium legal order in the absence of centralized coercive force, we can therefore look to see the extent to which a particular historical setting lacking centralized coercion displays these attributes. We expect that the efficacy and robustness of an effort to secure legal order on the basis of decentralized enforcement alone will be correlated with the presence of the legal attributes we identify. We thus have more theoretical tools to bring to bear on what Greif (2006, 350-376) calls the project of "interactive context-specific analysis." With this in mind, we turn to examine our three specific case studies.

III. Medieval Iceland

The age of blood feuds in Iceland was also an age of extensive and complex laws and litigation (Bryce 1901, Miller 1990). Shortly following settlement by the Vikings, the first general assembly, known as the Althing, was held in 930 at Law Rock. Here, freemen assembled every year to vote on rules and, more importantly, hear lawsuits "argued with an elaborate formality and a minute adherence to technical rules far more strict than is now practised anywhere in Europe" (Bryce, p. 274). Lawsuits were argued on the basis of both customary rules and those generated at Law Rock. They were heard by ad hoc panels of judges selected by the Chieftains of the individual Things into which the Republic of Iceland was divided. Individual Things might hear disputes throughout the year; the annual Althing decided disputes that transcended the capacity or authority of the individual Things.

[7] We note that Kornhauser (2004) suggests that a social-scientific concept of law would treat law as a term of commendation for a governance structure.

Despite elaborate procedures for litigation, the Icelandic system had no centralized authority to enforce its rules. Again according to Bryce (281),

> There was no police, no militia, no fleet, no army… Such State organizations as existed came into being for the sake of deciding lawsuits. There it ended. When the decision had been given, the action of the Republic stopped. To carry it out was left to a successful plaintiff.

In fact, the only government official in the entire Icelandic republic was an individual known as the Law Speaker. He was elected at the Althing to a three-year term and paid out of public coffers. His job was, however, not to adjudicate disputes. His sole duties were to memorize and recite at the Althing the entirety of the law, composed of both customs and legislated rules, to answer queries from potential litigants about the law, and to serve as the only person recognized as able to declare with finality the content of the rules in the event of uncertainty in a court proceeding.

The Icelandic system satisfies our axioms about what constitutes a legal system: behavior was organized on the basis of a normative classification, as articulated by the Law Speaker and chosen by the Althing. The Icelandic rules governed almost every detail of mundane life (Miller 1990), not just killing and plunder: moving bones to relocate a cemetery, how to separate and account for hay blown into a neighbor's field, baptismal practices, marriage contracts, loan agreements, sales of good, and more.

Friedman (1979) uses Iceland as an example of a legal system independent of governmental authority for enforcement, but which instead relied on a purely private system to enforce rights (especially rights of property and against personal injury). He analyzes the Icelandic system as a relatively "pure" case in which victims obtain the exclusive private right to prosecute, and receive monetary compensation from, a wrongdoer. This "property" right in prosecution, he suggests, could have produced a

relatively efficient system of deterrence: the holder of the right could have contracted with private "enforcers" to extract payments and such enforcers, advertising their customer list to potential wrongdoers, could have internalized the externalities enjoyed by the community from the prosecution of individual injuries. Friedman interprets the voluntary association of freeman into Things and other family and friend-based coalitions as an example of the formation of groups that took on the obligation to assist in the prosecution of injuries and collection of compensation on behalf of their members.

This analysis leaves a series of questions unresolved. If harms were felt at the level of the coalition, why did the coalitions look to public rules and litigation controlled by those outside the coalition to determine when and how they sought compensation? The analysis also provides no explanation of why coalitions limited their compensation to the legislated amounts rather than set its own rules for when and how it retaliated against wrongs it perceived. The analysis only accounts for inter-coalitional harms: What governs relations within the coalition, and how did the coalitions solve the free-rider problem? Finally, analyzing the Icelandic system as one based on inter-coalitional injury and retaliation reduces the system to an instance of the clan-based warfare that characterized many early (and some modern) human societies. Were the legal aspects of the system—the Althing, the courts, the convoluted rules of procedure, the specified levels of compensation, the detailed regulation of everyday life, the pronouncements of the Law Speaker—merely epiphenomenal, playing no functional role?

Our model analyzes explicitly what Friedman treats in summary fashion: what it takes, institutionally, for the coordination of collective punishment of a wrongdoer by

ordinary individuals to be effective and to be sustained as an equilibrium. By focusing explicitly on the problem of coordinating collective punishment, our approach accounts for the distinctively legal features of the medieval Icelandic system and suggests that they were essential to its achievement of some degree of legal order.

Consider in more detail the collective punishment system. If a person was declared in violation of the republic's rules by a court, the court announced the prescribed penalty. If monetary compensation was not paid, then the violator was declared either a lesser or greater outlaw (Bryce 162). A *lesser outlaw* had all his property confiscated and was banished from the Republic for three years; a *greater outlaw* lost all his property, was banished permanently, and could be killed by anyone with impunity. Once declared an outlaw, anyone might punish the offender unilaterally—taking the offender's property or killing him, for example.

Outlawry is a collective punishment. To be effective, it requires all individuals to participate by refusing to give shelter and aid to an outlaw. Why did people participate in this punishment? It must surely have been costly to some, such as those who depended on the outlaw for support or income. Even where the Icelandic punishment regime appears to rest on unilateral action—such as by authorizing anyone to take an outlaw's property or to kill him—efficacy still rests on voluntary participation by multiple individuals and is an example of a regime based on decentralized collective punishment.

The coordination problem associated with decentralized collective punishment becomes visible in this system when we consider how the rest of the community—whether a member of the same Thing or another—responds when someone retaliates

against the convicted offender. Suppose that A perceives an injury done by B, files a lawsuit, and obtains a court judgment that B owes A compensation but that B does not pay. A brings another lawsuit and has B declared an outlaw. C then helps himself to B's sheep. C is engaging in unilateral action to enforce the outlawry judgment. How does the rest of the community respond to C's action?

For retaliation to succeed against those declared in the wrong, a retaliator needs to be assured that the community at large interprets his or her action as an appropriate response to the declaration rather than as an independent harm. Abstractly, this requires that the community coordinate on what constitutes authorized retaliation; that in turn requires coordination on what constitutes a rule violation and when the obligation of compensation is considered unsatisfied and thus cause for a decree of outlawry in the first place. Those who refrain from punishing retaliators acting in accord with the public rules and decisions, participate, if passively, in this form of collective punishment. Without coordination on the classification of authorized retaliation, individuals cannot be confident about the deterrence effect of decentralized punishment.

The institutional features that characterized the Icelandic system helped to resolve the problems of coordination and incentive compatibility in the service of supporting decentralized collective punishment. Consider the function of the Law Speaker. Our framework explains the use of a single designated Law Speaker by the need for an authoritative steward to coordinate and incentivize participation in decentralized collective punishment. Our model suggests that individuals have an interest in determining how the common logic classifies particular actions. This public classification allows them to avoid committing a wrong and to determine whether their own

participation in punishment is called for. The Law Speaker's duties specifically included an obligation to recite the rules publicly and to respond to any queries posed to him about the rules. The Law Speaker thus serves as a quintessential example of an institution that exercises authoritative stewardship over the common logic.

Other features of the Icelandic regime can be understood in terms of their role in resolving the incentive compatibility problem facing the decentralized collective punishment on which the regime relied. Although adjudication was performed by ad hoc groups of judges appointed to resolve particular disputes, decisions were not ad hoc. Legal rules and reasoning were expressed in *general* terms. Miller (1990, 62) recounts, for example, a law declaring that:

> It is prescribed that there shall be no such things as accidents [but that] if a man does worse than he intends to do and damage [to livestock] results from his clumsiness, that is not punishable at law and he shall make amends for the damage within two weeks time as it is evaluated by five neighbors. Otherwise it shall not be judged an accident.

Stated in this manner, a general rule is also *universal.* A universal rule tells a person who invests in punishing the person who fails to make amends for damage done to a neighbor's livestock that he can do so in the confidence that the rules about accidents will apply to him in the same way if he suffers uncompensated damage in the future.

The Icelandic laws appear to have drawn fewer distinctions between free men and women than did other Anglo-Saxon regimes. Each was (at least officially) entitled to have their death compensated at the same rate, for example. (Miller 29) Our model suggests a possible account for this: in a regime that depended significantly on women's participation in punishments—refusing aid to an outlaw, for example—we predict a

common logic that attends sufficiently (relative to their alternative payoff if they decide not to participate) to their interests.

The incentive to help the wronged neighbor to punish was also supported by the *stability* and *prospectivity* of the Icelandic rules. In this system, leaders could not emerge at random times and announce a new set of rules—whether for sincere policy reasons or to achieve corrupt objectives. Instead, the rules were either derived from custom, which is inherently slow to change, or they were legislated at an annual public event—the mid-summer Althing at Law Rock. This system gave a basis for A's reasonable expectation that if A helped this year to punish the trespasser who damaged B's livestock, the same rules would be in place three years hence to generate an incentive for B to help out A if A suffered similar harms. The stability and prospectivity of Iceland's general rules also gave A the basis to feel reasonably confident that his participation in punishment on B's behalf today would not later be deemed a wrongful act itself by a change in the rule that authorized retaliation at the time he decided to participate.

The Icelandic rules also displayed the use of *impersonal reasoning*. Ad hoc courts were composed of groups of individuals; this implies that the rules were expected to be capable of interpretation and application by individuals in consistent ways. The designation of a single individual with special authority to resolve uncertainty about the content of rules—the Law Speaker—also demonstrates the reliance on impersonal reasoning. For the Law Speaker was elected only to a three-year term, indicating that the content of rules was capable of being articulated by anyone who might be chosen for that office and not dependent on the reasoning of a particular person.

The violence of Viking society puts the importance of these institutional attributes into sharp focus. Violence is far more likely to spiral out of control in the absence of centralized coercion given the problems of ambiguity or instability about what counts as justified violence. Ambiguity about judgments is likely to plague a system based solely on emergent social norms. An unwillingness to channel violence to track a system of rules is likely to be characterized by ad hoc judgments according to poorly articulated, unstable, or highly personalized criteria. Icelandic society was not close-knit; freemen lived fiercely independent lives only loosely affiliated with a Thing headed by a chieftain who exercised little coercive power over his Thingmen (Miller, 21-28). This environment is unlikely to have spontaneously developed a unique, common knowledge classification of behavior across the myriad circumstances that might breed conflict.

The emergence of a formal institution—the Law Speaker—for resolving ambiguity, formal institutions—ad hoc courts—for applying rules based on impersonal reasoning and a formal institution—the Althing—for publicly designating general rules in a stable and slow-changing way thus indicates a critical shift in the mechanism by which Iceland achieved some level of social order. We argue that the adoption of these institutions is usefully identified as a critical step in creating legal order, despite the absence of a centralized coercive authority.

IV. The California Gold Rush

"When gold was discovered on January 24, 1848, the territory [of California] had none of the usual legal institutions such as a legislature, courts, police or jails"

(McDowell 2004, 772).[8] Yet disputes over claims were generally rare, and surprisingly little violence arose, at least over the right to engage in the hard work of extracting gold from a digging (Zerbe & Anderson 2001). Instead,

> a common or customary law of the diggings emerged that allowed a miner to hold a small claim for as long as he was working it or left his tools in his hole. When diggings looked promising, however, and likely to attract many miners, those who were on the spot held a meeting to pass a more detailed mining code for that particular area[,] … [choosing] a chairman, appoint[ing] a committee to draft a code, and a short time later, approv[ing] it by majority vote (McDowell 2004, 778).

The substantive content of the codes "varied in detail from camp to camp, and they could be modified at a subsequent miners' meeting, in which case the rights of claim holders might change from one day to the next" (773). Notably, most codes settled on limiting each miner to possession of a single claim—although the size of the claim did not settle to a uniform dimension—and required that a claim be actively worked; a miner who staked a claim and then disappeared no longer held a claim. In most cases, neither the procedural nor the substantive rules distinguished between those who held claims and those who did not at the time of the meeting, nor between those who were already at the camp and those who arrived later. The rules established at the camps made those working claims vulnerable to legitimate claim jumping by newcomers; for example, if the miner who held the claim failed to meet the requirement of sustained working of the claim.

When disputes arose between American miners, they were often referred to third parties including ad hoc arbitrators and juries of miners. The miners at Jackass Gulch, for

[8] California had no centralized authority when the gold rush began. Due to the national crisis over the territories gained from Mexico, Congress failed to organize California as a legal "territory" that provided a territorial government. Statehood, creating California's first American government, occurred two and a half years after the discovery of gold, on September 9, 1850 as part of the larger Compromise of 1850 ending the national crisis.

example, specified in their code that "as soon as there is sufficiency of water for working a claim, five days absence from said claim, except in case of sickness, accident or reasonable excuse, shall forfeit the property." They declared that any disputes—about what counted as a "sufficiency" of water or as a "reasonable" excuse, for example—would be decided by a jury of 5 persons (Umbeck, 1977, 217).

"Almost all litigants complied with [jury or arbitrator] decisions without further ado" (McDowell, 788). In the apparently rare cases in which they did not comply immediately, the community would announce clearly to the violator that they were to abandon the diggings or risk community punishment (800). These collective efforts were decentralized in the sense that every participant had to decide whether or not to incur the cost of rising up to protect someone else's claim.

Umbeck (1977), drawing on the early property rights literature, highlights the private incentive to create and protect property rights when the value of private property exceeds the cost of the institution of property rights. He suggests property rights in California were stable despite the absence of an external enforcer because it was in the interests of all miners to agree to a set of rules and participate in enforcing them. While an important contribution, Umbeck's work is under-theorized: it fails to explain the particular features of the rules and procedures of the mining camps; and it provides no compelling account of the incentive for individuals to either abide by the rules or help enforce them.

Later contributions attempt to remedy these defects using the framework of coordination games. Zerbe & Anderson (2001) use Kreps's (1990) theory of corporate culture to argue that the particular rules and procedures in the camps can be explained as

focal points based on shared cultural norms, which selected an equilibrium on which miners coordinated. Participation in enforcement, they suggest, is also explained by shared norms of fairness and culturally-induced preferences for seeing wrongdoers punished.[9] McDowell (2002) challenges Zerbe and Anderson's views about shared culture, emphasizing the ambiguity surrounding concepts of fairness, even among Americans, and several ways in which the mining rules departed from prevailing American norms, such as by making owners vulnerable to losing their property if they did not actively work it. She emphasizes "the great mystery" of why the claimholders who devised the first codes in a mining camp did not allocate to themselves full property rights, assuming (as Umbeck does) that the residents of a camp were sufficiently numerous to fight off newcomers. Why limit miners to a single claim and authorize jumping of an unworked claim? McDowell (2002) also appeals to prevailing Jacksonian ideology, but she also argues that miners recognized that even if they held a claim today they were likely to find themselves in search of new claims tomorrow; behind a "Rawlsian veil of ignorance" then, they settled on rules that treated existing claimholders and newcomers on equal terms.

McDowell (2004) supplements this analysis of the choice of particular rules with an account of the enforcement mechanism, relying on Sugden's (1986) theory of the spontaneous emergence of property rules as a solution to the strategic interaction captured by a Hawk/Dove game.[10] The rules established in the mining camps, McDowell

[9] Zerbe & Anderson echo a major theme of the work of Ostrom, who identifies numerous communities that overcome collective action problems without resort to centralized coercion; Ostrom emphasizes the role of pro-social preferences in supporting these solutions (Ostrom, Walker and Gardner 1992, Ostrom 2000).
[10] In the Hawk/Dove game players recognize that if both claim a valuable resource they will each incur substantial costs of conflict; the optimal response to a Hawk strategy of claiming the resource is to play Dove and concede.

argues, were closer to law than norms because they were deliberately chosen, but they were nonetheless self-enforcing in light of the incentive to coordinate to avoid wasteful contests. Clay and Wright (2005, 163) endorse McDowell's view that miners chose rules that balanced the interests of claimholders and claimjumpers because of the inevitable "'search' and 'race' aspects of gold mining." They argue that ambiguity surrounding the implementation of these balancing rules—which required an assessment of the validity of excuses for not actively working a claim—ultimately undermined the efficacy of decentralized third-party enforcement.

Our framework advances the understanding of the features of the system developed in Gold Rush California. Like McDowell, we characterize the achieved order as a legal order because it created a system for supplying deliberate content to rules. Moreover, as McDowell and Clay and Wright recognize, both ambiguity and arbitrariness are at work in this system of deliberate rule creation. And like all of those in the more recent literature, we agree that coordination games are a useful framework for thinking about how the rules the miners developed were (at least to some extent) enforced.

We disagree, however, that the solutions the miners developed are adequately explained as equilibria in pure coordination games played with respect to primary (claimholding and claimjumping) behavior. Modeling Gold Rush California as a pure coordination game fails to explain several problems. In a pure coordination game, no conflict arises over which equilibrium to play. Further no problems of enforcement arise. Coordinating players' expectations in such a game is sufficient to achieve an equilibrium with honorable behavior. But why would a miner follow the rule of respecting claim

markers or limiting himself to a single plot of land 15 feet square just because others did so? Why would other miners participate in costly punishment of those who violated the rules? Modeling the problems faced by miners as a pure coordination game, as with most of the existing literature, sets aside this diversity of interests and views about what should count as allowable behavior and rights.[11]

We also agree with two of Umbeck's (1977) claims: in the early days of gold discovery, spontaneous norms governing claiming (allowing a miner to claim a digging hole indefinitely by leaving his tools there) worked reasonably well given the abundance of potential diggings and the small population; and population pressure created the risk of greater conflict over diggings so that the costs of establishing a more complex system was warranted.

In our view, the rise in population not only created greater resource pressure, but also increasing diversity; people from all over the country and indeed the world, motivated to rationalize their access to a limited resource, were bound to bring or develop their own views about appropriate norms. Similarly, inventions of new mining techniques and the mining of different types of deposits also generated diversity in private valuation systems over alternative rules (what our model refers to as idiosyncratic logics). Finally, as both McDowell and Clay and Wright emphasize, substantial diversion of interests existed between those who had begun work on a prospective deposit and those still searching; and between those who were already at a mining camp and those who arrived afterwards.

[11] Clay & Wright (2005), who also consider the enforcement game, are an exception. They conclude, however, that ambiguity in the rules largely undermined the capacity to establish an equilibrium in enforcement.

We begin with the idea that the rules the miners adopted constituted an effort to create a common logic—a common knowledge system for classifying behavior as wrongful or honorable. Our approach isolates instead the central role played by the problems of both coordination and incentive-compatibility in the enforcement game.

We interpret the mining rules as enforced by a threat of collective punishment. This account focuses on the game of collective punishment, which as our model makes clear is not a game of pure coordination. Individuals will participate in collective punishment to enforce a particular rule if they expect others to do so *and* if they evaluate themselves better off in the equilibrium coordinated under that rule than the alternative. For individuals whose participation in collective punishment is essential for punishment to be effective. The alternative in Gold Rush California was whatever each miner could secure by his own wits and might in a world in which no one follows rules, an environment akin to the Hobbesian "state of nature" characterized by the "war of all against all" (Hobbes, 1651).

The incentive constraint on the equilibrium provides an explanation of several features that are poorly explained by the existing accounts. Consider McDowell's "great mystery" of the mining rules: miners who already were working the area agreed to rules that restricted the size and security of their pre-existing claims, allowing newcomers to take over the area in specified circumstances. This feature is better explained by the constraints on effective collective punishment than it is by a specification of the particular shape of the preferences of miners.[12] Specifically, suppose that effective collective punishment required the participation of most of the inhabitants of a mining

[12] Recall McDowell appeals to the idea that current claimholders perceived themselves as equally likely to be claimholders as claimjumpers behind a Rawlsian veil of ignorance. Zerbe & Anderson suggest that miners held pro-social preferences which caused them to prefer fair and equal rules.

camp at the time of a violation. Miners had various enforcement techniques, including social disapproval and ostracism as well as collective physical efforts to scare off or even injure someone attempting to jump a legitimately held claim.[13] Stability of the regime required that third parties participate in collective punishment; in putting out an illegitimate claimjumper or defending the interests of a legitimate one.

Our view also provides an explanation for why the mining rules treated everyone at the camp alike—old-timer and newcomer, lucky claimholder and unlucky searcher. By doing so, the rules increased the likelihood that they satisfied the incentive compatibility constraint on effective collective punishment: any miner in the camp had to perceive the common logic of the rules to be *sufficiently convergent* with his own idiosyncratic logic—to rationalize his personal expenditure of effort and risk to help secure stability under the rules. This is an example of *qualified universality*: the rules address the interests of all those necessary to an effective punishment scheme.[14]

Universality as a characteristic that supports equilibrium enforcement may also help to explain the rules that limited miners to a single claim and required them to consistently work the claim in order to maintain their rights. Allowing existing miners to exert rights over all the territory in a mining district sets up clear "insider" and "outsider" groups, organizes the interests of each as a group, and limits the size and strength of the insider group. In contrast, holding open the prospect of accommodating as many miners as possible in a district and rewarding a newcomer who participated in camp life with the

[13] We disagree with McDowell (2004) that the relatively low number of episodes of punishment in the historical record is evidence that the threat of punishment unimportant for compliance. In a well-functioning equilibrium displaying legal order, the threat of punishment is "off-the-path-behavior," meaning that we should not observe it in equilibrium.

[14] This logic does not imply equal protection for all: for example, the rules discriminated against Chinese, Mexican, and Native American prospectors. Rather, it implies that those who are necessary to effective enforcement (and Chinese, Mexican and Native American prospectors perhaps were not) see a better result under the common logic than under the disordered alternative.

possibility of taking over an (apparently) abandoned claim has the effect of extending the pool of those with a potential stake in upholding the rules. This may have contributed to stability of the regime.

The rules limiting miners to a single worked claim may also have served to generate other legal attributes supporting legal order. Such rules promote the capacity for any individual miner to engage in the *impersonal reasoning* necessary to make assessments of when intrusion on a claim counted as punishable claimjumping—not only for the purpose of assessing his own claimmaking and claimjumping behavior but also for the purpose of identifying when he would be expected to participate in enforcement efforts. A one-man-one-claim rule implies that an individual can rely on having seen a miner working a particular claim as clearly implying that this miner has no right to challenge claimants elsewhere; any other rule gives rise to claims by absentee owners, which are difficult for a casual observer to evaluate. Similarly the requirement of working a claim to hold it supports easy – and common – inferences about who has a valid claim and who does not. This rule relies on easily observable behavior (someone is there working most of the time or is not) and thus enables miners working nearby claims—who are the most likely to be in a position to raise an alarm—to decide when they should stand up for their neighbor or a newcomer.

The absence of other criteria in the rules supports the impersonality of the reasoning necessary to predict how the common logic will classify an event. Suppose for example that the rules discriminated in favor of old timers against newcomers. This more complex approach to classification of rightful and wrongful claiming would make it more difficult for any ordinary miner to apply the reasoning of the rules to classify events for

himself. This complexity means that some would fail to correctly classify particular minors; and this possibility, in turn, presents a great excuse for not helping to throw off a claimjumper: "I had no idea if he was at the first meeting or grandfathered in." In contrast, impersonal rules – the one-man-one-claim rule, the requirement of actively working a claim, and the specification of uniform dimensions and uniform means of marking a claim—promoted clarity in the rules and allowed any miner to apply them.

A final important feature of our approach missing from the pure coordination account concerns the interaction of ambiguity (as Clay and Wright (2005) emphasize) and hence the need for an authoritative mechanism for resolving this problem. Consider the Jackass Gulch rule noted earlier about five days absence from a claim (subject to qualifications about sufficient water and sickness or accidents) resulting in forfeiture of the claim. This rule treats many circumstances definitively (when there is plenty of water, for example), but not all. Good faith disputes inevitably arise; for example, over how much water is sufficient; was an accident sufficiently bad? Hence the provision for what we call *authoritative stewardship*: in the event of dispute, the matter is decided with finality by a jury or designated arbitrator. A robust use of this mechanism, far from demonstrating the fragility of rules (as Clay and Wright (2005) suggest, pointing to significant levels of litigation), may well serve the important function of reassuring everyone at the camp that residual uncertainties are resolved according to the common logic (including its procedures) and not by other means. These procedures serve at least in part the function of making the common logic a system of *public* and *open reasoning*.

Clay and Wright (2005) make the case that the miners' rules produced order but did not produce efficiency because they promoted a wasteful race for gold; a better

regime might well have established exclusive rights that made claim jumping everywhere illegitimate. And had California been organized as a legal territory or as a state antecedent to the discovery of gold, a more efficient system of property rights might have emerged. But as Clay and Wright ask, would such a system have been enforceable? Our model focuses expressly on this question and as our analysis above suggests, it is possible that the constraints on securing reasonable legal order relying exclusively on decentralized collective punishment limited the efficiency of the underlying rules.

V. Medieval Merchants

With the expansion of trade in Europe and the Muslim Mediterranean beginning in the eleventh century came the challenge of securing the terms of commercial transactions in an increasingly diversified and unfamiliar world, especially for exchanges involved in long distance trade (Milgrom, North & Weingast 1990, Greif Milgrom & Weingast 1994, Greif 1989, Greif 1993, Greif 2006). Although individual towns or regions might benefit from the protections offered by a powerful local ruler or religious organization capable of enforcing rules, a great deal of trade took place between local residents and merchants (or their agents) who traveled from afar. Enforcement by or against foreign traders in disputes with local merchants was a major challenge: the foreign merchant who cheated a local might be long gone before a dispute could be resolved by local courts. Conversely, foreign traders who suffered at the hands of local merchants might find local judicial systems deaf to their concerns as rulers sought to benefit their own citizens at the expense of foreigners. In many cases, a centralized enforcement body was practically unavailable to support transactions between local and

foreign merchants. Even local merchants who lived in a territory governed by a powerful ruler or a religious organization were likely to face gaps in centralized enforcement of their local transactions, as the availability of enforcement resources was frequently strained by the fairly constant challenges to authority that rulers experienced in this period before the consolidation of stable states.

The achievement of a degree of legal order in commercial transactions in the world of the medieval merchant therefore depended on a fairly robust decentralized enforcement mechanisms to fill sometimes-large gaps in the efficacy or availability of centralized enforcement. Several authors have studied this problem and demonstrated that enforcement of commercial rules in the middle ages rested significantly on organizations such as merchant coalitions, merchant guilds, and communes[15] (Greif 1989, Milgrom, North & Weingast 1990, Grief 1993, Putnam 1993, Grief, Milgrom & Weingast 1994, Greif 2006). These organizations provided sets of rules and enforced them, primarily through ostracism and boycott: excluding violators from profitable transactions or from group benefits such as protection.

The multiplicity of enforcement institutions stands in contrast to the modern environment in which legal order is largely secured through the elaborate legal systems implemented by nation-states.[16] This raises fundamental questions about how and why the modern system of territorially-based and exclusive legal jurisdictions evolved and the

[15] Greif (2006) uses the term "commune" to refer to any self-governing territorially-defined community; this is a broader definition than, say, Putnam (1993) who uses the term to refer to the distinctive city-states of medieval northern Italy. Greif suggests (2006, 310) that communes possessed "a geographically local monopoly over the legal use of coercive force." We suspect that even communes relied significantly on decentralized participation by ordinary citizens to punish rule violations.

[16] Ogilvie (2011) emphasizes, rightly we think, the multiplicity of enforcement institutions available to medieval merchants. Although she mounts a vigorous challenge to the claim that merchant coalitions, guilds and communes played a significant role in enforcing agreements, we are not persuaded that the evidence supports her broader critique.

extent to which centralized states are required for the provision of law. As we discuss in the next section, our framework for analyzing legal order sheds light on these questions.

Trakman (1983) and Benson (1989) argue that the legal order in the medieval world evolved spontaneously, guided by a decentralized process not unlike the invisible hand of markets. From their perspective, the emergence of centrally-organized legal order through state governments was unnecessary; in fact, it degraded the efficiency and quality of medieval merchant law.

Our framework disputes this institution-free view of the evolution of commercial legal order. Although we agree that private commercial organizations are likely to arise to meet the demand for legal rules to coordinate commercial activity, Benson's and Trakman's accounts gloss over the difficult questions of how decentralized commercial enforcement is incentivized and coordinated. Both accounts also idealize custom, suggesting it evolves to preserve efficient rules because merchants simply avoid rules that undermine efficiency. But this claim ignores the powerful coordination nature of equilibria: even if an individual merchant comes to recognize, accurately, that a particular rule is sub-optimal for his trade, if other merchants effectively punish violations of existing rules, then inefficiency can survive as an equilibrium. Our express focus on the problems associated with coordinating and incentivizing equilibrium demonstrates the role for centralized institutions even if they do not engage in coercive enforcement. Benson and Trakman, however, conflate government with governmental coercion and thus overlook key questions about the comparative capacity for different types of institutions—public and private—to coordinate legal order.

Building on Trakman's and Benson's work, a robust literature provides theoretically-grounded accounts of how decentralized merchant institutions can secure legal order without government coercive authority. Greif (1989, 2006) shows how a closed group of traders in the eleventh century Muslim Mediterranean—the Maghribi traders—secured their agency contracts through a decentralized enforcement system in which all members of the group refused to deal with (boycotted) a merchant who had a reputation for cheating. Greif argues that these traders, with a shared Jewish heritage, were able to draw on collectivist cultural beliefs in which individuals are expected to respond to injuries done to others to coordinate collective punishment of wrongdoing. Milgrom, North & Weingast (1990) demonstrate that a similar multi-lateral reputation equilibrium can be coordinated in the absence of shared cultural beliefs by a group of merchants using an institution they call the Law Merchant. This set of institutions incentivized merchants to undertake costly behavior to facilitate punishment for cheating, including: to obtain and share information about cheating by other merchants with a merchant court; and to punish a merchant with a public record of cheating because they themselves will be punished (cheated) if they let the cheater get away with cheating.

Other contributions investigate how private organizations with coercive power over their members act to enforce contracts between members and non-members. Greif, Milgrom and Weingast (1994) model a game in which a merchant guild, by threatening a boycott of a foreign ruler's territory, induces the ruler to live up to promises of security and fair legal treatment in the ruler's courts. Guilds were able to make this threat effective through their power to exclude from trade any of their members who violated the boycott. Greif (2006) argues that prior to the thirteenth century, communes were able

to punish members who violated agreements with non-members (members of other communities); the communes had an incentive to do so because of a community responsibility system in which the foreign community would punish all members of the transgressing merchant's community. If a merchant from Cologne, for example, cheated a merchant in London, all merchants from Cologne who traveled to London were liable to have their goods seized if the authorities in Cologne failed to punish the cheater.[17] The threat of seizure in London, in turn, provided merchants in Cologne with the incentives to police the behavior of all merchants in their community.

This theoretical literature has advanced significantly our understanding of the complexities of sustaining legal order through decentralized or private mechanisms, exposing the limits to Panglossian views of the naturally orderly world of customary commercial trade. But the pictures of 'law' in this literature are relatively thin. Nothing in these models characterizes the rules as law-like.

Consider Greif's account of the Maghribi traders. He focuses on a solution to the problem of enforcing agency contracts that is naturally limited to a group of individuals who share (as a matter of common knowledge) the particular collectivist culture that sustains equilibrium beliefs and strategies. The challenge is to explain why this method of generating beliefs about retaliation did not transcend its cultural bounds. Greif argues that the individualistic beliefs shared by, for example, the Genoese merchants, were not consistent with such a system, and that the dominance of individualistic culture in medieval Europe forced Europeans to turn to a formal legal system—by which Greif

[17] The community responsibility system may have worked too well: by the mid-thirteenth century, merchants are clamoring for relief from responsibility for the debts of their community members.

means centralized coercive enforcement by an organized state with a local monopoly over the legitimate use of force.

Our model questions this line of analysis. We show that even purely self-interested traders, lacking the kind of pro-social preferences that Greif attributes to the Maghribi, can sustain an equilibrium based exclusively on decentralized collective punishment of the type that sustains the Maghribi equilibrium provided there exists a centralized institution with legal attributes. Rather than solving the problem of beliefs by a switch to coercive enforcement, our approach suggests solving the problem of beliefs by a switch from shared culture to formal institutional structure. Of course, coercion may have aided this system by lowering the costs of punishment in some cases. But coercion is not the central feature of this system. We emphasize instead the coordinating mechanisms of a body of rules or laws with legal attributes in combination with an authoritative steward.

Greif reports that the Maghribi system was limited to merchants who were of recognizable membership in the group. Its success depended on social networks that both facilitated and made obligatory the exchange of commercial information. And it depended on the existence of informal customs to coordinate beliefs about what constitutes cheating by an agent. Greif argues that the feasibility of this solution limits the size of the group – if the group grows too large, this solution falls apart. Moreover, this solution depends on an exogenously-supplied collectivist belief system.

Our approach suggests that other features of the Maghribis' solution limited its ability to expand. Reliance on an informal and organic means of resolving ambiguity about what constitutes cheating is likely to have posed a substantial limit. With the

growth of trade came an expanded division of labor and increasing specialization, as well as greater diversity of trading partners and settings. The innovation of commercial instruments and organizational forms that took place over the course of the medieval Commercial Revolution added to the complexity of trade. All of these features increase the problems of ambiguity.

Greif recognizes the problem of resolving ambiguity among the Maghribis (Greif 2006, 69-71), framing the ambiguity problem as one of incomplete contracting—what an agent should do in an uncontracted-for contingency. He suggests that cultural rules can fill these contractual gaps and calls these cultural rules merchants' law. He also tells us that Maimonides, "an important Jewish spiritual leader living in Fustat" (where the Maghribis were centered) provided some guidance in his legal code, by prescribing that merchants should fill gaps "with the custom current in the land in regard to the merchandise they deal with." (71)

The express recognition of custom as a gap-filler and, possibly, Maimonides's code as a key to classification, frames a series of questions, largely unexplored in the current literature, about the extent to which the body of rules employed by the Maghribis displayed the legal attributes we highlight. A body of cultural rules is likely to reflect both generality and impersonal reasoning; indeed, an important feature of custom is the accessibility of the reasoning to a wide group and the expression of obligations in ways that can be applied across a range of (customary) settings. Cultural rules also achieve common knowledge, as Chwe (2001) has persuasively argued. For custom to succeed at the gap-filling role, the system of rules had to be clear; we expect there were cases in which it was indeed clear what custom required of merchants.

What we don't know, however, is how the system handled ambiguity as it inevitably arose. Greif provides no evidence that an authoritative steward existed, an institution needed when new contingencies arose not covered by the existing understanding of customs. Was Maimonides' code authoritative in this sense? Was there a body of experts to whom the merchants turned for an authoritative declaration when it was unclear what "the custom current in the land" required? Greif (2006,71) reports: "unfortunately, neither the legal literature nor the *geniza* documents reflect exactly how the merchants' law was formulated and changed." The evidence suggests the merchants' "law" may have been a regime of organic social norms still in the process of acquiring the attributes of law.

Our framework emphasizes the importance of the distinction between spontaneous or organic systems for classifying conduct and stewarded systems. Greif's analysis collapses the distinction between law and culture in this regard; indeed he notes that a term he translates as "merchants' law" can also be translated as "the way of the trade." (70) We believe in preserving the important distinction between custom and law as coordinating devices precisely because an institution that offers a unique authoritative steward—think of the Icelandic Law Speaker—can coordinate beliefs more extensively in settings of greater novelty and idiosyncrasy: the conditions we propose were increasingly important as the Commercial Revolution progressed. A system that depends on the slow adaptation of culture and customs about what constitutes "cheating" will be less effective at adapting and coordinating an equilibrium based on decentralized collective punishment.

The apparent lack of a formal steward as a coordinating device in the Maghribis' reliance on culture adds an important insight to Greif's account about why the formal legal institutions developed in Europe came to replace their culturally-based system. Greif attributes the European turn to formal legal institutions to a difference in culture. As trade expanded in Europe, this difference in culture required, he argues, a complete change in the mechanism of enforcement—from a system of decentralized collective punishment to a regime of centralized coercive authority. But we think this view makes too big a leap. We agree that the different beliefs held by Europeans are likely to have facilitated the move to more formal institutions. But we disagree that the most important feature of the central institutions involved coercion. We emphasize instead the formal development of a coordinating device with legal attributes, including an authoritative steward. Coercion may have aided this system, but it is not the system's central feature.

The multiple European solutions that merchants had available to them—the rule systems provided by sovereigns, religious bodies, merchant guilds, and cities—possessed to a significant extent the legal attributes we claim are needed to support widespread legal order based on decentralized collective punishment. To varying degrees, these rule-providers struggled to devise decentralized collective enforcement systems that were characterized by a public common logic, capable of implementation through impersonal reasoning, and under the authoritative stewardship of an identifiable and neutral entity.

As an example, consider a typical set of rules, those established by Flemish cloth merchants in 1240: "The Ordinance of Those Men of Ypres and Douai Who Go to England." (Moore 1985). The first provision stated that "if a merchant returns a cloth after he has bought it, giving no reason for the return. . . then henceforth no man of Ypres

or Douai shall let him take any cloth away from any of our shops until he shall have paid the full price." This is an express example of the setting we model: a buyer who violates the rules established by a group of sellers is punished by a set of simultaneous decisions among all of them to boycott the offender. Punishing an offender is individually costly: refusing to deal with a merchant will sometimes mean foregoing the profit on a transaction. This collective punishment scheme therefore faces problems of coordination and incentive compatibility.

The coordination problem was addressed by the creation of the document articulating the rules—which stated that it was to be "read out before the community in every fair"—and the establishment of procedures for determining ambiguous cases: Flemish merchants traveled in convoys to English fairs with wardens with the authority to adjudicate disputes (Moore, 96-97). As stated in a subsequent guild ordinance of 1261 dealing with the purchase of wool by Flemish merchants from English sellers, "there will be in each of these cities one man to view and judge the grievances." (Moore, 301) In the language of our model, these individuals served as the authoritative stewards of the common logic encapsulated in the Flemish cloth merchants' ordinances. Their role in elaborating rules to accommodate new and unforeseen circumstances was reflected in provisions empowering wardens to add "any good rule which is not included here", with the agreement of the community; their authority as managers of a reasoning process without wielding legislative power, however, was also reflected in the limitation that while they could expand on the rules they could not abolish provisions unilaterally.

This attention to the distinctive attributes of institutions that coordinate legal order also helps to identify a weakness in the analysis of the "Law Merchant" provided by

Milgrom, North and Weingast (1990). MNW demonstrate, in contrast to a system relying exclusively on culture, that a multilateral reputation system—a form of decentralized collective punishment—can be built in a context that does not presuppose shared cultural beliefs. MNW, as with Greif, pay little attention to the problems of ambiguity in the concept of cheating and why the merchant judges produced a body of rules that were recognized as law. Their account of the Law Merchant, as a consequence, lacks attention to attributes of this institution beyond its capacity to serve as a common repository of judgments about cheating. Our framework, by focusing explicitly on the institutional attributes that support coordination among heterogeneous agents when ambiguity is a critical consideration, supplies these attributes.

Our approach sends us back to the historical record to look at how these attributes evolved. We wonder in particular how merchant guilds reconciled the need to preserve the attributes of uniqueness and common knowledge of classification among all those whose participation was essential for credible enforcement with the goal of expanding the power of the threat. Ideally, once a stable set of rules is in place, a guild would want to expand the set of merchants who looked to those rules to classify commercial behavior. Expanding the group who participate in collective punishment, however, requires universality in the rules.

We know that the merchant guilds struggled to ensure that all of the members used their rules, and only their rules, to guide their behavior. Given the multiplicity of available rule systems and courts, exclusive use of the guild's rules was essential to secure the credibility of the punishment threat from other members of the guild. The guilds of Northern Italy, for example, obliged their members to bring disputes to the guild

court rather than the ordinary civil court; "the gild did not hesitate to expel members who ignored its claims to jurisdiction, and to forbid trade or commerce with them" (Mitchell 1904, 42-43). The reliance on guild rules and adjudicators traveled with the merchants (51). As we have seen with the Flemish merchants, guilds selected individuals to travel with them and adjudicate disputes at English fairs (Moore, 99). Even within England, the merchants of individual English cities looked to their own guilds for rules and adjudication when they traveled to English fairs.

Guild efforts to ensure that their members used the guild's rules exclusively for transactions were no doubt in part driven by the belief that their rules were more desirable for them than other rules. But the emphasis on guild-wide adherence to a common set of rules also suggests the importance of common knowledge of the rules to support collective punishment. Our framework suggests another reason for such keen concern at the guild level. A merchant who took his case to a non-guild court not only imposed a cost on the merchant with whom he had a dispute. He also created an externality for the guild as a whole, by degrading the clarity and uniqueness of the rules to which all guild members looked in deciding when to participate in collective punishment.

Achieving clarity and uniqueness in the system provided by an individual guild, however, came at a cost: the enforcement threat was limited to the collective punishment that could be supplied by the members of the guild. There would therefore, we suggest, have been pressure to attract merchants beyond a guild to the guild's rules, to expand the power of the punishment. Greif, Milgrom and Weingast (1994) describe, for example, the slow evolution of the German Hansa—growing the number of cities willing to

boycott on the basis of a centralized set of rules and procedures to discipline foreign rulers who failed to respect the charters reached with the coalition.[18]

Our framework shows that expanding the set of potential punishers, however, required the achievement of universality—the creation and development of rules that sufficiently took into account the interests of those the guild sought to attract—as well as credible promises that the rules would be implemented in neutral ways, even when adjudicating between member and non-member interests.[19] In a regime that depends significantly on decentralized collective punishment, significant expansion can only occur in a stable way if it succeeds in attracting participants by offering them something better than their alternative enforcement option.

The countervailing pressures to secure common knowledge among a group of potential punishers and yet to expand the set of punishers also sheds some light on the claim—most strongly made by Benson and Trakman--that the Law Merchant was a unified set of rules, common across merchants throughout the commercial world. The history is more complex. From the perspective of an individual merchant, commercial law must have seemed a riot of rules. Critical contract questions were resolved in very different ways by different rule systems.

The pressure to build a set of rules that all merchants recognized as the relevant reference point for evaluating commercial conduct was undoubtedly great. Again, the broader the set of merchants who recognize the rules, the more powerful is the collective

[18] Observe also that the incentive to attract participants to a particular set of rules is not grounded, as the theory of competitive courts currently suggests, in a desire to attract the fees associated with adjudicating claims (Klerman 2007) or with the desire for power or prestige. The payoff to guild members of expanding the reach of their rules is fairly immediate in a system that depends on decentralized collective punishment: the power of the enforcement threat in individual members' contracts goes up.

[19] Mitchell (1904, 41-45) provides some evidence of this in Italy, where guild courts gradually extended their jurisdiction over all mercantile cases within the city.

enforcement threat. Does a merchant acquire a reputation for reneging on contracts after they're formed? The reputational threat is much greater if merchants—whether trading at the fairs of St. Botulph or Champagne, in Bruges or in Milan—all recognize the same rules for determining what counts as a valid contract.

VI. The Role of Centralization

The essence of law is a set of rules characterized by legal attributes, such as generality and universality, and an authoritative steward for removing ambiguities and adapting the rules to changing circumstances. The definition is independent of the means of enforcement, and we have emphasized the existence of law in settings that depend solely on decentralized enforcement.

What role, then, does centralization play in a system of law and its enforcement?[20]

Although this history has yet to be written, our model suggests that the move to formal, centralized state-coordinated legal systems involves characteristics that go well beyond coercion. We suggest that this move has more to do with the capacity for a centralized system based on exclusive territorial jurisdiction to accomplish various ends complementary to decentralized enforcement; namely:

- To generate and sustain the legal attributes covering a wide range of activities well beyond those involving merchants.
- To sustain common knowledge about the rules in a large diverse population.
- To coordinate decentralized enforcement and to enhance the power of that enforcement by placing all members of a large society under the same rules.

[20] In some cases, centralized coercive may lower enforcement costs; but we suspect such cases cover only a small portion of the total.

- And to obtain the advantages of an authoritative steward for adapting the rules to changing circumstances.

One underappreciated feature of "state" courts that operate extensively throughout a large region, and the development of territorial as opposed to personal jurisdiction—quite apart from any coercive power of the state—is that these courts can achieve a level of common knowledge, universality, authoritative stewardship and impersonal reasoning not available to smaller, membership-based systems. Several independent systems of laws and legal stewards necessarily involve ambiguities about the boundaries between the different systems. In contrast a centralized system removes this ambiguity and provides a systematic means of resolving conflicts of laws arising in different areas.

Royal authority, quite apart from coercive power, may have offered these advantages and laid the groundwork for the emergence of royal courts as a single coordinating system for the realm. Consider King Edward's *Carta Mercatoria* from 1303. Expressing a concern to increase the "tranquility and full security" of foreign merchants who bring their goods to England, the document first promises foreign merchants the right to enter the realm, "safely and securely under our defence and protection" and free of certain taxes. It also grants foreign merchants the right to lodge in England's cities, boroughs and towns. Coming second only to these two basic provisions is the announcement of a uniform rule—across England and across different commodities—for determining when a contract has been formed and which rules apply.[21]

[21] [E]very contract entered upon by those merchants with any persons soever, whencesoever they be, touching any sort of merchandise, shall be valid and stable, so that neither of the merchants can withdraw or retire from that contract after God's penny shall have been given and received between the principal contracting persons; and if by chance a dispute arise on such a contract, proof or inquisition shall be made thereof according to the uses and customs of the fairs and towns where the said contract shall to be made and entered upon. (Bland, Brown and Tawney 1914, 213)

The *Carta Mercatoria* thus seems a major step in creating an authoritative stewardship over a unique and (at least aspirationally) neutral and universal system of rules. Note that the document does not specify what these rules are—beyond the critical (and often overlooked) ambiguity of when a contract has come into existence. It merely establishes which local customs and rules will apply—and provides promises that this system will be under the stewardship of designated individuals who are subject to royal punishment if they fail in their stewardship. Finally, we emphasize that the document does not mention royal resources dedicated to enforcing the judgments reached by these officials—the only promise of royal protection is for their persons and goods.

This evidence highlights the importance of the coordination of decentralized enforcement in the emergence of legal order, and the evolving role of the state in medieval trade. In this we follow in the footsteps of H.L.A. Hart who observed:

> The history of law . . . strongly suggests that the lack of official agencies to determine authoritatively the fact of violation of the rules is a much more serious defect [than the absence of an official monopoly of 'sanctions']; for many societies have remedies for this defect long before the other. (Hart 1961, 93-94)

Law is principally about legal attributes, an authoritative steward, and the coordination of decentralized enforcement. Centralization and coercion may enhance this system; but centralized coercion is not critical to law and its enforcement.

VII. Conclusion

Over the past few decades, economists and political scientists have become increasingly interested in the role of law and legal institutions in generating stable market democracies. We have gained considerable insight into how particular laws and policies impact economic and political activity, particularly in the advanced Western societies

where this research is largely conducted. But, as we have argued in this paper, much of this work has been conducted without an overarching social scientific account of law as a phenomenon: how a legal order is distinguished from both social norms and tyrannical power; how and when the rule of law can be expected to emerge or be stabilized; or how to explain the emergence and stability of that order.

To the extent social scientists provide an account of law, they virtually always identify law with centralized coercive enforcement of those rules. As we have shown – both theoretically and through our reexamination of three central examples in the literature on legal order in the absence of a centralized coercive authority – making coercion the sine qua non of legal order limits our ability to understand law and to explain and differentiate it from other forms of social order.

We propose a different starting point for addressing the question, "what is law?" Our positive model of legal order presumes a significant, even if not exclusive, role for decentralized enforcement of legal rules. Moreover, in our approach, law is a distinctively intentional, and hence policy-sensitive, form of governance by rules and institutions. Focusing on decentralized collective punishment mechanisms such as reputation, retaliation, shame, ostracism, and the like brings into view the central problem of coordinating diverse individuals on common interpretation of when conduct warrants punishment and when it does not. For this system to work, diverse individuals must agree on a normative structure; that is, how to classify actions as good or bad. Legal institutions capable of unique classification of conduct as wrongful or not reduce ambiguity and facilitates coordination of collective punishments. Finally, our approach provides a positive model to understanding why law has a series of legal attributes

identified in the normative literature (e.g., Hart 1960, Fuller 1964, and Raz 1977), such as generality, publicity, clarity, and impersonal reasoning. Taken together these legal attributes and accompanying institutions for coordinating decentralized punishment provide an account of what is distinctive about legal order.

In studying three different cases in the literature, we highlight how our model adds to existing accounts. In the literature on all three cases, the idea of law is thin – no explanation exists for why what is called law differs from, say, social norms and customs. Our approach identifies the critical features of a legal system, and we use it to clarify the three cases. Existing accounts all emphasize, as we do, the role of decentralized enforcement mechanisms. But decentralized mechanisms alone do not count as law. To be classified as law, the rules must be characterized by legal attributes and the central feature of an authoritative steward. We find evidence for these characteristics of law in each of the cases.

This approach gives us a new framework for analyzing a wide range of questions that concern social scientists, including the puzzle of how human societies have developed such extraordinary levels of social cooperation, the relative roles played by the evolution of preferences for altruistic punishment and incentive-based accounts of why people are willing to engage in costly punishment, and how institutions might be better designed to support the development of legal order in transition, developing and poor countries and the expansion of global trade and democratic integration

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