

Institutional and Organizational Analysis: Concepts and Applications

Chapter 2: Institutions and Property Rights

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This paper serves as an introduction to institutions and property rights to be used as Chapter 2 of Alston, Mueller and Nonnenmacher's textbook "Institutional and Organizational Analysis: Concepts and Applications." We begin with a Northian definition of institutions as "the humanly devised constraints that shape human interaction." These constraints can take the form of laws, norms, and contracts. In a world of zero transaction costs, varying forms of institutions are interchangeable, but in a world of positive transaction costs, institutions matter. For instance, if the costs of creating and enforcing legal rules were zero, then property rights could be perfectly defined by legal rules. But in a positive transaction cost world, the ability to use items is shaped by more than the law. Both social norms and individual behavior matter. Only in a zero transaction cost world can one think of property as a bundle of rights that can be reorganized costlessly into any configuration. In a positive transaction cost world, individuals and organizations face incentives to organize rights in a manner that reduces transaction costs.

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Opening Case: The New Deal and the U.S. Constitution

At 4,400 words, the U.S. Constitution is “an incomplete contract for governing the nation” that explicitly grants Congress, the courts, and the President a handful of enumerated powers but is imprecise on many issues and silent on many others (Moe and Howell 1999: 853). These ambiguities were purposefully written into the Constitution and reflect tensions between James Madison, who wanted the powers of the three branches to be clearly defined, and Alexander Hamilton, who wanted loosely defined powers that would allow for “vast expansions of executive power” after ratification (Pious 2009: 456). The Constitution can be interpreted as a series of rules but also, and perhaps more constructively, as an “invitation to struggle” (Corwin 1984: 171). That struggle has gradually shifted power to presidents, who “have been able to exploit the silences, ambiguities, and incomplete constructions” of the Constitution to expand their powers (Pious 2009: 459).

Many presidents engaged in this expansion reluctantly. Jefferson questioned whether the Louisiana Purchase was constitutional. Lincoln stated that he had “no lawful right” to interfere with slavery. Nixon, in contrast, famously quipped that “when the President does it, that means that it is not illegal.” While these examples are extraordinary uses of executive power, they reflect the long trend in the gradual shift in power away from the courts and Congress towards the presidency. The shift in power can be explained through an examination of presidential personality or through a careful examination of the circumstances under which expansions in presidential power were made. But the shift can also be explained using institutional analysis: understanding the players, the rules of the game, and the strategic interpretation of those rules that lead to predictable patterns of behavior.

While the Constitution is silent on many specific rules, the founders offered a framework of how the struggle between the branches of government would proceed.¹ Congress has two chambers and hundreds of members, each interested in reelection. Rarely will Congress speak with one voice, and the collective action problem to provide a check on presidential power is substantial. The Supreme Court has limited incentives to rule against expansions of presidential power, both because the President appoints justices and because the President is the one who must ultimately implement the Court’s decisions. While the Court must interpret the “will of Congress,” Congress’s unspecified will “combined with the zillions of statutes already on the books” gives the Court the ability to give almost any presidential interpretation of a statute the green light (Moe and Howell 1999: 869). The President, in contrast, faces fewer collective action problems, has tremendous leeway in interpreting statutes, and can take unilateral action, including signing statements and executive orders. The President is uniquely situated to fill in the spaces left empty by the formal rules written in the Constitution, which has led to an incremental and strategic growth in presidential power. The lesson is that the rules certainly matter, but the interpretation of those rules is dynamic and strategic.

One example of the evolving interpretation of rules comes from the New Deal legislation targeting economic recovery, the court’s response, and the strategic behavior between the many actors seeking to influence the regulatory environment. The Great Depression began in 1929 and was followed by several years of economic decline. Unemployment in the United States reached 25% in 1933 as real

¹ See Moe and Howell (1999).

output fell 30 percent below its 1929 peak. President Herbert Hoover experimented with a variety of initiatives, such as the Reconstruction Finance Corporation, to reverse the downturn, but these measures did little to stimulate growth, leading to the election of Franklin Delano Roosevelt and a large Democratic majority in Congress in 1932.

Roosevelt's economic policies were lumped together under the name, "The New Deal." There were many goals to Roosevelt's mix of New Deal policies, some of which worked at cross-purposes. Roosevelt goals included "raising farm incomes, raising wages, helping the unemployed, stimulating industrial output by raising prices, offering liquidity to housing markets, providing insurance for bank deposits, building social overhead capital—such as dams, roads, sewers, and public buildings—and still more" (Fishback 2007: 385). An important early component of the New Deal was the National Industrial Recovery Act (NIRA) of 1933. This Act established both the National Recovery Administration (NRA) and the Public Works Administration (PWA).² The PWA was charged with spending \$6 billion on public works, such as dams, bridges, hospitals, and schools. Famous PWA projects include New York City's Triborough Bridge and Lincoln Tunnel. The NRA was charged with creating codes of "fair competition" and fostering agreements regarding work hours, pay rates, and output prices and quality.

The NRA encouraged collusion both among firms and among workers in the hopes of raising prices and wages. Since members of an agreement to collude have strong incentives to cheat on the agreement, the government became the enforcer of anti-competitive behavior. One code contained in the NIRA was the "President's Re-Employment Agreement." By choosing to sign on to this agreement, employers agreed to pay a minimum wage, limit the work week, and allow unionization. This general agreement was later replaced by over 500 industry-specific codes, negotiated by industry participants. While employers lost some bargaining power vis-à-vis employees by signing on, doing so exempted them from anti-trust statutes, a significant incentive. These rules were enforceable by authorities made up of industry participants and government representatives, government boards, such as the National Labor Relations Board, and the courts (Dearing et al, 1934).

Lurking in the background of much of the early New Deal legislation was the question of whether it was at all constitutional. Article I, Section 8, Clause 3 of the U.S. Constitution states that Congress has the power to regulate commerce "with foreign Nations, and among the several States, and with the Indian Tribes." The phrase "among the several States" in this clause was largely interpreted prior to the 1930s to mean that Congress could only regulate the portion of commerce that was interstate. Commerce that occurred within a state could only be regulated by the states. This interpretation of the Commerce Clause was upheld in *Schechter Poultry Corp. v. U.S.* (1935), in which the Court unanimously ruled that the "Live Poultry Code" that regulated the poultry industry unconstitutionally delegated legislative power to the executive branch and regulated intrastate transactions that had only an indirect interstate component. The Court's ruling had the effect of invalidating all of the NIRAs "codes of fair competition" and was a significant blow to the New Deal. An additional blow came in 1936 when the Court invalidated the Agricultural Adjustment Act. Frustrated, Roosevelt saw little room for maneuvering around the Supreme Court. He ultimately appointed a total of nine justices, but only appointed his first in 1937. One plan that he floated to combat the Court's opposition was the Judicial Procedures Reform Bill of 1937.

² The PWA was originally named the Federal Emergency Administration of Public Works.

This bill would have allowed the President to appoint up to six additional justices to the court based on the age of current justices. While the bill was held up in Senate committee and the public generally disfavored it, the threat of court packing may have caused swing voters on the court to switch over to supporting New Deal legislation. The interpretation of the Commerce Clause expanded greatly, so that there are practically no areas of commerce or daily life that the federal government does not regulate in some way using its expanded constitutional reading.

An interconnected matrix of rules, norms, and actors determine the organization of the economic system. The Supreme Court determines what laws are constitutional. The bills signed into the law by the President determine what government agencies will promulgate as policy. Industry reacts to those policy changes and tries to influence the behavior of regulators, Congress, the President, and the Supreme Court. While most Americans favored Roosevelt's New Deal policies, most Americans also opposed his plan to pack the Court. It went against the rules of the game, and seemed un-presidential to the general populace. Changes to the rules of the game were influenced not only by the nitty-gritty of politics, but also by the general norms of what constituted fair behavior. We will see in this chapter that all of these concepts can be categorized and clarified in building a framework for institutional and organizational analysis.

Institutional Analysis

Economic models often assume away the laws of government, the norms of society, and the private agreements between individuals, but no economic activity would exist without a legal, social, and contractual framework that supports cooperation and coordinates behavior. Institutions provide the framework in which all social and economic activity takes place. They have been defined by North (1990: 3) as "the humanly devised constraints that shape human interaction" and by Ostrom (2005: 3) as the "prescriptions that humans use to organize all forms of repetitive and structured interactions." This book breaks down the study of institutions into their component parts, but as the example that begins the chapter illustrates, understanding how a particular "humanly devised constraint" affects "economic activity" requires more than positing a simple link between a rule and behavior. Institutional analysis requires a broad understanding of the available technologies, preferences, beliefs, enforcement, and complementing and competing rules and norms. Together, these elements determine property rights, the ability to exercise choices over property.

The central element of an institution is a *rule* or *norm*, what we call the *institutional statement*. Ostrom (2007, 3) defines rules as "shared prescriptions (must, must not, or may) that are mutually understood and predictably enforced in particular situations by agents responsible for monitoring conduct and for imposing sanctions" and norms as "shared prescriptions that tend to be enforced by inducements." A rule has an explicit "or else" and an agent assigned to enforce it. Norms do not have an explicitly stated penalty or enforcer, making them less formal than rules.³ We classify constitutions, laws, organizational rules and contracts as subcategories of rules. Social norms, codes of behavior, and conventions are subcategories of norms. The dividing line between rules and norms can become blurred when rules are

³ Rules are often called *formal institutions* and norms *informal institutions*.

unclear in their sanctions and enforcement and norms are relatively clear about the sanctions and the party who imposes them.

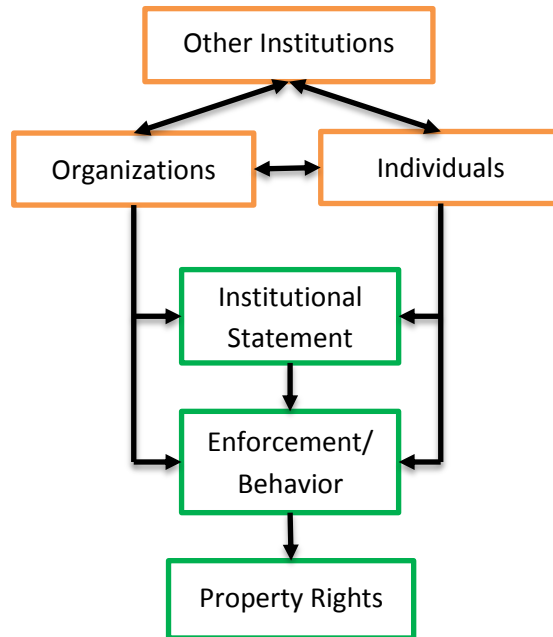
Institutional statements take many forms and exist at all levels of society. Constitutions contain institutional statements. They specify the structure of the government and enumerate rights of individuals vis-à-vis the government. Tort law and its components (e.g. the rule of simple negligence, which determines who is liable for paying damages caused by an accident) contain institutional statements. Contracts are institutional statements, in that they are agreements between individuals that define the exchange of property rights.⁴ Norms, such as norms of reciprocity or revenge, are institutional statements, as they guide behavior when gifts or harm are received.

Predicting the effects of an institutional statement outside of its social context is an impossible endeavor. The U.S. Constitution has been a component of successful long term economic growth in the U.S., but experience has shown that exporting U.S. rules to another country will not automatically generate similar levels of growth elsewhere. While many institutional statements are enforced by second or third parties or are self-enforcing, that is, it is in the interest of all parties to follow the prescription, how an institutional statement achieves that status and how individuals in general will perceive the benefits and costs of following a statement is always contextual. That context is created by the biophysical world, the organizations that make and enforce the statement, individuals' preferences and beliefs, and complementary and competing institutions. These factors, which we call *institutional elements*, make up the *institutional matrix*, the web of interconnected social forces that shape behavior. This matrix is illustrated in Figure 2.1.⁵

⁴ The Restatement, Second, Contracts §3 defines contracts as “a promise or a set of promises for the breach of which the law gives a remedy, or the performance of which the law in some way recognizes as a duty.”

⁵ While some of the terminology and assumptions we use differ from his, we draw heavily on Greif (2006) in this section.

Figure 2.1: The Institutional Matrix



Understanding the link between institutions and property rights is a central part of the theoretical framework of the NIE. To analyze the link, we must look at the whole institutional matrix. The bottom three (green) elements are the core of how we define *institutions*: the rules, norms, enforcement mechanisms, and behavior that define property rights and ultimately determine economic performance. The top three (orange) boxes are additional elements of the institutional matrix. They are the individuals, organizations, and other institutions that combine to create, enforce, and shape individuals' understanding of and response to institutions. The next sections go through these elements and explain their interactions.

Other Institutions

A web of rules and norms combine to influence social behavior. One way to sort out this web is to follow the creation of a new rule. For instance, in the United States, in order to become a law, a bill must pass through committees, both houses, and a conference committee, and then be signed by the President into law. An agency is charged with enforcing the law and the Supreme Court can rule on its constitutionality. All of these stages of the rule-making and enforcement process occur in linked arenas that have their own sets of rules and norms that shape behavior.

Another way to sort out the institutional web is to think of a hierarchy of rules. Following Ostrom (2005), we limit ourselves to three levels of rules – constitutional, collective choice, and operational – all of which can occur at different levels of societies and in different organizations. Operational rules directly shape day-to-day behavior. Collective-choice rules determine the process by which operational rules are made. At the highest level, constitutional rules define the process by which policy-making occurs. The U.S. Constitution's 13th Amendment outlaws slavery and involuntary servitude. Neither individual states,

nor organizations operating within those states can pass rules that allow slavery. In this way, rules are nested with top level rules controlling lower level rules.

Individuals

While institutional statements are the rules of the game, individuals and organizations are the players. Individuals are the foundational unit of analysis in economics. Methodological individualism holds that only individuals, not organizations, have goals or aims and that changes in social outcomes are due to the actions of individuals.⁶ We highlight three characteristics of individuals that differ from the typical textbook presentation: their rationality, preferences, and beliefs.⁷

A typical intermediate microeconomics textbook models individuals as rational egoists who maximize their material well-being subject to a set of constraints.⁸ In these models, individuals can gather and evaluate information about alternatives in a costless manner. The strong assumptions regarding the availability and processing of information led Herbert Simon (1961) to posit that economic models should be built on a weaker version of rationality. Actors who are *boundedly rational*, are “intendedly rational, but only limitedly so” (Simon 1961, p. xxiv). Bounded rationality assumes that there are limits to humans’ ability to gather and process information. For this reason, actions that seemed optimal *ex ante* may be regretted *ex post*. Actors use tools such as satisficing behavior, rule following, and incomplete contracts in order to compensate for their bounded rationality.

Individuals possess a complex set of emotions and moral intuitions that complicate the modelling of utility as a monotonic transformation of material outcomes. Moral intuitions are partially learned – organizations such as families, churches, schools, and governments work hard to socialize children into certain patterns of behavior – and are partially evolved – certain moral intuitions have been selected for over time. Detailing the source of preferences is a core question in the field of evolutionary psychology and well beyond the scope of this book.⁹ We note only that both “nature” and “nurture” can shape preferences. We discuss norms in more detail later in this chapter, but note here that there is a difference between a social norm, which is a specific response expected from society in a specific situation, and the impulse that undergirds that behavior. You may feel a desire to exact revenge on someone who has recklessly cut in front of you in traffic. The impulse for revenge is an intuitive response to perceived harm that may be learned or may be genetic. The form the revenge takes is shaped by the social norms and laws of society.¹⁰

Models based on narrowly defined self-interest can make accurate predictions in certain arenas of economic action, most notably in situations that loosely reflect the assumptions of perfect competition. However, situations in which the institutional matrix encourages behavior other than competition are

⁶ See Rutherford (1994) for a discussion of methodological individualism and holism in the NIE.

⁷ We return to beliefs in Chapter 9, where we distinguish between behavioral and core beliefs. Core beliefs are widely held in a society and form an umbrella over the institutional matrix.

⁸ See Ostrom (2005) for a discussion of the assumptions of rational egoists.

⁹ For an overview of this literature, see Haidt (2012).

¹⁰ Some authors distinguish between social and moral norms. For instance, according to Elster (2007), agents follow a moral norm even when they have no opportunity for being observed, as not following the norm would engender feelings of guilt in an individual. Self-imposed sanctions are automatic, but often require investment by society to instill (Posner and Rasmussen 1999). We categorize moral norms as part of preferences.

often difficult to explain using a model based on the rational egoist assumption.¹¹ Donating to charitable organizations, working harder than required, unwavering loyalty to a sport team, country or brand, voting for policies that hurt your material interests, and automatic acceptance or subversion of authority all require explanations that go beyond the maximization of material well-being. Humans are competitive by nature, but also are willing cooperators, particularly when the institutional matrix in place encourages cooperation. For this reason, we use a broad definition of rationality – choosing the best means possible to achieve the chooser’s ends – rather than one focused narrowly on material well-being.¹²

Individuals also have beliefs about how other people will act and, in particular, how institutions will affect other people’s behavior. Beliefs differ from preferences. A student might prefer that other students in a class will not cheat on an exam. That student may simultaneously believe that cheating is rampant. The phrase “believe what you want” implies that people’s preferences and beliefs are intertwined. Limited government advocates believe that smaller government will generate prosperity and also prefer tax cuts. Big government advocates believe that government intervention is required to fix basic faults in the market economy and also prefer expansive fiscal and monetary policy. Behavioral beliefs are our beliefs about how other people will act in certain situations. We return to the importance of behavioral beliefs in the Institutions-as-Equilibria section below.

Organizations

Families, firms, religious organizations, colleges, and governments are all organizations. Organizations form when individuals join together to achieve a set of common objectives. They are interesting to the NIE because the bulk of the rules studied by the discipline are created and enforced by organizations. Organizations have two sets of related issues that we will examine. First, they have their own set of institutions that govern their members’ behavior. Second, they “impact and interact with the broader world around them” (Greif and Kingston 2011: 19). The internal working of organizations is studied using tools of the modern theory of the firm, which studies organizations that compete against one another in market settings. Since a variety of organizational forms (each with its own set of rules and norms) are available to achieve a particular goal, one would expect competition among organizational forms that leads to efficient organizational choice. This topic is examined further in Chapters 3 and 4. Organizations can impact the broader world by shaping preferences through education or advertising. They can also be players in the political process, seeking to shape legislation or coordinate to achieve large scale institutional change. The influence of organizations in shaping political outcomes is examined in Chapters 5-11.

North, Wallis, and Weingast distinguish between adherent organizations and contractual organizations. Adherent organizations are “characterized by self-enforcing, incentive-compatible agreements among its members” while contractual organizations “utilize both third-party enforcement of contracts and incentive-compatible agreements among members” (2009: 16). A group of mafia bosses that comes to

¹¹ Gode and Sunder (1997) show that even “zero intelligence traders” reach efficient outcomes when markets are designed appropriately, eliminating the need for a rational egoist assumption to explain competitive outcomes

¹² Using this definition, if you feel obligated to reciprocate someone’s generosity by buying her a gift, you would do so by buying and delivering the gift at the lowest cost and by the most appropriate manner (Posner 1998).

an understanding about splitting territory or a group of basketball players playing a pickup game are adherent organizations, since in neither case is there an overarching organization that enforces the rules. A corporation, on the other hand, is a contractual organization, as it relies on the state to enforce some of its agreements.

Rules

Rules are institutional statements and specify what a defined set of individuals must, must not, and may do in certain situations and prescribe penalties for non-compliance.¹³ In order for a rule to be binding, individuals or organizations must be given the responsibility for monitoring behavior and implementing penalties. A set of rules adopted by many colleges and universities is an honor code that prohibits plagiarism. Such a rule states that: “Students at University of XYZ are forbidden from presenting someone else’s work as their own without proper acknowledgement. Students who are accused of doing so will face an honor code hearing and sanctions as described in the Student Handbook.” These rules are limited to whom and for what activities they apply. University of XYZ’s honor code only applies to students at University of XYZ for work turned in for classes at that university. They do not apply to faculty at University of XYZ or students at ABC College.

Rules range from the constitutional to the contractual level. An organization, such as a college or university, may have a set of constitutional level rules in the form of charter that describes its organizational structure and how that structure can be changed and new rules can be created. Collective choice rules, in the form of a student and faculty handbooks, structure the operation of the university. Operational rules govern the day to day decision-making at the university and include grading policies and the contracts with food and cleaning services. Constitutional level rules may be included in a formal constitution, but may also be a set of laws and principles that have the equivalent of constitutional standing. Such is the case for Great Britain, which has no codified constitution. Most constitutional rules limit the powers of the government or define the rights of individuals vis-à-vis the government. The third amendment to the U.S. Constitution, for instance, prohibits the quartering of troops during a time of peace without the permission of the owner. If a property owner believed that an agent of the government violated this constitutional rule, the property owner must appeal to the court system to protect his or her rights. The constitutionality of laws can be reviewed by the courts in countries with judicial review. While the deontic in the Third Amendment is clear – unauthorized quartering during times of peace is forbidden – the “or else” points to a process of judicial review rather than an explicit penalty associated with the violation of the deontic. This enforcement mechanism is part and parcel of the institutional matrix. A country with no formal or informal means of enforcing constitutional provisions has a constitution in form but not in function.

Some institutional statements have all the elements of a rule, but are not known to individuals or are not enforced with any regularity because they are either difficult to enforce or the agency charged with enforcement chooses not to enforce them. We call these *rules-in-form*, and distinguish between *rules-in-form* and *rules-in use*, which are regularly enforced by the government or some other entity. Those laws that are “on the books” but not enforced are dead letter laws. “Enforced” does not mean that

¹³ The definition comes from Ostrom’s (2005) ADICO framework, in which she defines institutional statements based on their attributes, deontic, aim, conditions, and “or else.”

sanctions are automatically and costlessly imposed. Instead, it means there is a probability that violating a rule will lead to an expected sanction. There are rules in most countries that protect your property from theft. If you steal your neighbor's car, you may never be accused, you may be prosecuted but found not guilty of a crime, or you may be prosecuted, found guilty, and sentenced to pay a fine or serve a term in jail. Laws prohibiting theft are rules-in-use if there is an expectation that agents of the government will enforce the penalties in a predictable manner. When the costs of establishing and protecting property rights are positive – as we will see in the next chapter is always the case – enforcement of rules cannot be perfect. In many cases, people know or suspect that a rule exists but do not know the exact content of the rule. You may know that murder and theft are crimes in your jurisdiction, but not know the penalties for these crimes. Marginal changes in penalties may therefore cause little change in behavior of would-be criminals.

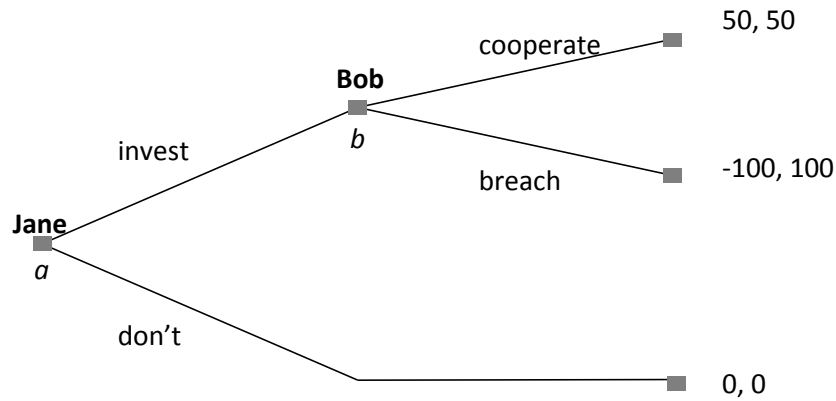
Laws prohibiting usury illustrate the difference between rules-in-use and rules-in-form. Limits on interest rates go at least as far back as the Code of Hammurabi, which set the maximum interest rate that could be charged and the maximum length of time a debtor could be sentenced to debt slavery. Islamic, Christian and Jewish traditions all have some form of a prohibition against usury, but charging interest or its equivalent has been widespread among people of all three faiths. In Islam, the interest ban has either been ignored or circumvented via alternative arrangements, such as the use of a “double sale.” A double sale involves the borrower selling the lender an item and then immediately buying it back and promising to pay the lender the initial sale price plus a premium at a specified time in the future.¹⁴ Merely knowing that Islam prohibits interest might make a student of Islamic banking think that no lending occurs. But knowing that alternatives exist might make students of Islamic banking think that there are no differences between Islamic and Western modes of banking. Neither of these suppositions is correct: arrangements that imperfectly mirror interest rates have existed in Islamic banking, but the differences between Islamic and Western institutions are important and have led to differing evolutions in their banking sectors (Kuran 2011).

Rules that support trade are among the most important for economic development. Contract law provides for the third-party enforcement of agreements through the judicial system by setting penalties for failing to fulfill contractual obligations. Figure 2.3 illustrates a simple investment game in which the investor (Jane) can invest or not invest, and the agent (Bob) can cooperate or breach. The payoffs to Bob and Jane are the monetary gain they will receive from the combination of actions. For instance, if Jane invests and Bob breaches, Jane loses \$100 and Bob earns \$100. Assume initially that Jane and Bob seek only to maximize their monetary payoffs and that there is no institutional matrix in place to enforce that agreement. If this interaction took place on a farm, Jane could buy a mule and a plow, while Bob could cooperate by using that equipment to farm the fields. Breaching the agreement could involve Bob appropriating Jane's investments and selling them or using them to farm elsewhere.

Sequential move games, such as the one described in Figure 2.3, are solved via backward induction. At decision node *b*, Bob's optimal strategy is to breach, earning him a payoff of \$100 versus \$50 from cooperating. Bob will therefore breach. Knowing this, Jane will not invest at decision node *a*. The lost \$100 in social surplus is a deadweight loss.

¹⁴ See Kuran (2011) for additional examples and a list of court cases in which these agreements were upheld.

Figure 2.3: Investment Game with no Contract Enforcement

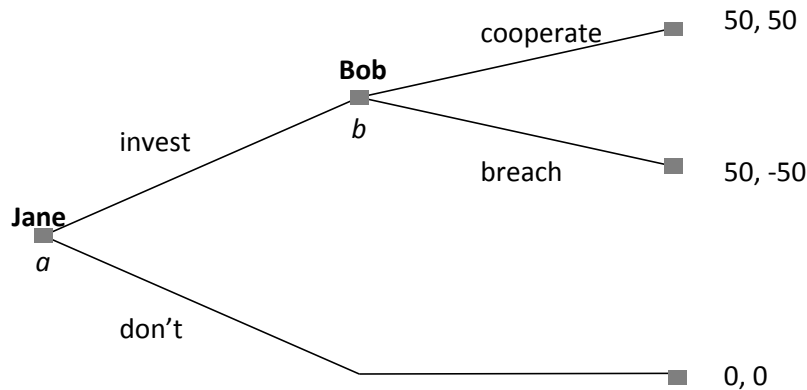


Courts in the U.S. traditionally require the elements of offer, acceptance, and consideration for a legally binding contract to be formed. In this case, the investor offers to provide the equipment if the agent promises to farm the land with it. The agent can either accept or reject that offer. The provision of the farming equipment by the investor can act as consideration, the inducement to the contract. One way to encourage cooperation is to penalize Bob for breaching by making him pay perfect expectation damages, which state that if Bob breaches the contract, he must pay Jane enough money to put her in the position she would have been in had the promise been fulfilled. The payoffs from perfect expectation damages are shown in Figure 2.4. If Bob breaches, he must pay Jane \$150 to give her a total payoff of \$50, which is what Jane would have received had Bob cooperated. These damages give Jane the incentive to invest and Bob the incentive to cooperate. The set of strategies (invest, cooperate) in Figure 2.4 is a Nash equilibrium, as neither player has an incentive to change his or her strategy given the strategy of the other player.

In a world in which contracting is costly, the size of damages awarded to the injured party matters. One insight from the Law and Economics literature is that promises should be broken when the cost of breaking them exceeds the benefit of completion. If damages are too high, then promisors will complete too many contracts. If damages are too low, then promisors will complete too few contracts. Another effect of the size of the damages awarded is on the precaution that promisors take in making sure the contract can be fulfilled. If the award is too small, then promisors will invest in too little precaution. The promisee, knowing that the promise is unlikely to be fulfilled, will invest too little in expectation of contract completion. If you know that a delivery service is unlikely to deliver an important part on time, you will not make other complementary investments. Overcompensating promisees has the opposite effect. If the compensation awarded to the promisee is too large, then the promisor will invest in too much precaution and the promisee in too much reliance.¹⁵

¹⁵ For a fuller discussion of the economics of precaution and reliance, see Cooter and Ulen (2011)

Figure 2.4: Investment Game with Perfect Expectation Damages



Rewriting the payoffs in Figure 2.3 to transfer \$150 from Bob to Jane when Bob breaches presupposes a legal system that can costlessly and flawlessly interject itself into private agreements to establish and enforce property rights.¹⁶ Among the many factors influencing the enforcement of contract law are the accessibility and funding of the courts; the training, honesty, diligence, and beliefs of judges; the rules of evidence; the laws regulating the organization of the legal profession; and the norms of legal reasoning (Hadfield 2008). Rewriting the payoffs also presupposes that using the judicial system to settle disputes is an accepted practice and that Jane and Bob both have the expectation of having the rules applied in an equitable manner.

Norms

The payoffs listed in Figures 2.3 and 2.4 show the monetary gains or losses from participating in the game. But economic actors respond to more than monetary payoffs; they may therefore follow strategies that, on the surface, do not look rational. A strong preference for acting in a cooperative manner could overcome Bob's incentive to breach and Jane's hesitation to invest in Figure 2.3. Jane and Bob may be married or Bob's church may have socialized him to always prefer to cooperate. Similarly, a norm of cooperation might lead to the cooperative outcome. A social norm of cooperation is an institutional statement and is followed when there is a chance of being observed by others. Being observed would generate a feeling of contempt by the observer towards the violator. That contempt may lead to punitive actions (shunning, confronting, physically accosting) by the observer and feelings of shame by the violator.¹⁷ In order to avoid the disutility from this combination of external or internal sanctions, the potential norm-violator may choose to cooperate rather than breach.

¹⁶ An assumption necessary for Figure 2.3 to make sense is that an institutional matrix exists that protects Jane's property rights enough for her to be able to make a decision to invest or not, but does not protect her property rights enough for her to contract successfully with Bob. The student of the NIE should look at every game tree or matrix and ask what assumptions about the institutional matrix are necessary to generate the required distribution of property rights.

¹⁷ Elster (2007) also includes moral norms, quasi-moral norms, and legal norms in his taxonomy of norms. These differ in the mechanism that encourages compliance. Moral norms are entirely internalized. Quasi-moral norms

General categories of norms include the following list:

- behavior “contrary to nature”
- reciprocity
- retribution
- cooperation
- distribution
- work
- consumption

Norms of behavior “contrary to nature” include prescriptions against incest and cannibalism. Norms of reciprocity and retribution guide the exchange of benefits and harms. Norms of cooperation prescribe the degree to which people cooperate in situations like a prisoner’s dilemma games. Distribution norms determine what is considered a “fair” distribution of society’s resources. Work norms guide how hard and in what manner one works. Consumption norms indicate what types of goods and service are required to be a member of a particular group.

In any situation, individuals can choose the set of norms upon which they will draw. Employers can appeal to a work norm (a job well done is its own reward) or norms of distribution (if the company is not profitable, it cannot afford pay raises). Workers’ appeals to norms are reflected in many union slogans, such as cooperation (Workers of the world, unite!), reciprocity (A fair day's wage for a fair day's work.), or distribution (Eight hours for work, eight hours for sleep, eight hours for what we will). If employers invoke a norm of distribution to share the losses of a poor harvest, a norm of reciprocity can be invoked by workers to share the wealth of a bountiful harvest. The same norm may be drawn upon to advocate for opposite policies. The anti-welfare slogan “Entitlement Nation” and the anti-Wall Street slogan “The 99%” both appeal to a norm of fairness.

Norms vary in their expansiveness and their importance. Norms can apply to multiple cultures (incest and cannibalism are forbidden in most societies), a single society (the nineteenth-century Corsican code of honor (Elster 2007: 362)), a religious group (the Christian day of rest is Sunday, the Jewish day of rest is Friday to Saturday sundown), a school (students at XYZ College “work hard and play hard”) or a business (everyone works late when a big project is due the next day). Norms can also vary in their importance. A “contrary to nature” norm forbidding cannibalism is more substantive than a fleeting consumption norm regarding fashion. The consumption norm of spending a lot on a wedding is fairly widespread, but the sanctions for violating the norm are relatively low. Walking on the right side of the sidewalk or the right side of the grocery aisle is a norm, but it is neither that important nor is it universally followed, as shoppers swerve from side to side as they find items or text on their phones.

are followed because the potential violator observes others following it. We classify legal norms under rules, as they have specified sanctions and designated enforcers.

Figure 2.5: Laws and Norms of Society

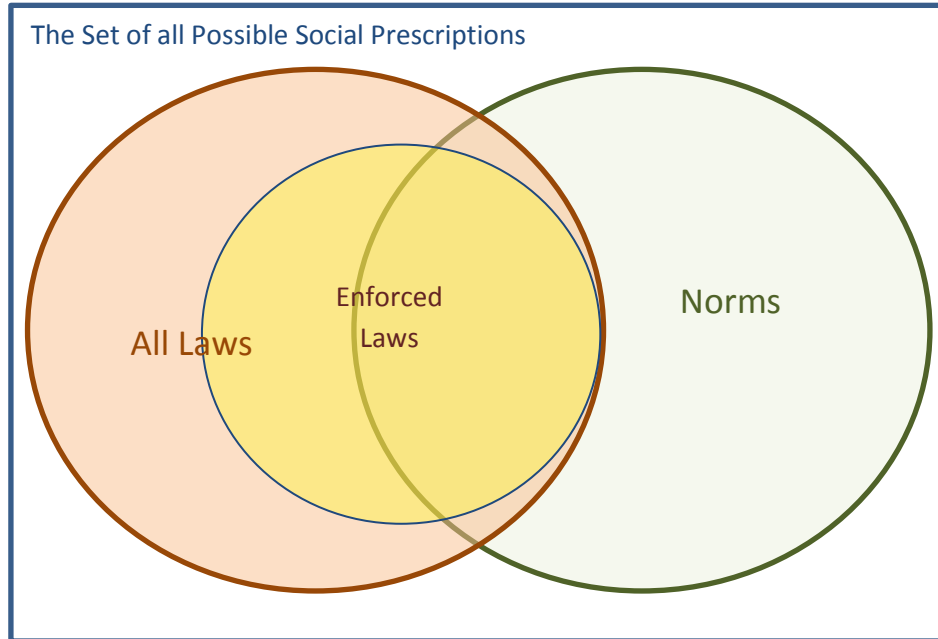


Figure 2.5 provides a diagram of the prescriptions associated with all the possible societal level laws and norms. Governments pass many laws, but only a subset is enforced. The laws that are passed but not enforced are dead letter laws. The prescriptions of laws and norms can overlap, and when they do, the government’s cost of law enforcement falls.

Enforcement and Institutions-as-Equilibria

In a simple formulation of this framework, rules are enforced perfectly and costlessly by organizations and individuals, and norms are enforced by broader social forces. Property rights are therefore perfectly defined. Thinking about rules and norms as having clearly defined sanctions is a good first step towards understanding their effect on behavior. If the severity of a sanction associated with a rule is increased, the quantity demanded of the prohibited activity is expected to decrease. Under this view, if the government raises the fine for speeding, the quantity of speeding will decrease. An alternative *Institutions-as-Equilibria* framework notes that many patterns of behavior within organizations and societies persist with very little monitoring or enforcement of sanctions.¹⁸ Greif and Kingston (2011: 25) note that “it is ultimately the behavior and the expected behavior of others rather than prescriptive rules of behavior that induce people to behave (or not to behave) in a particular way.”

Many patterns of behavior are influenced by rules or norms but might be best explained as an equilibrium outcome. The use of language is a matter of convention. Without a mutual understanding of what words mean and how grammar should be used, communication would be impossible (Lewis 1969). We use the words on this page in the ways that we do because we expect our readers to share a similar

¹⁸ This framework builds on the literature on conventions. A convention is a “pattern of behavior that is customary, expected and self-enforcing” (Young 1996).

understanding of their use and meaning. Driving on the right side of the road in the United States is a law and a social norm, but it is the expectation in equilibrium that others will stay to the right that is the greatest inducement to drive on the right. It is a law, because driving on the left side of the road will cause the police to pull the offender over and fine him, and it is a social norm because other members of society who observe the behavior feel contempt for the violator. But even without the law or the social norm, people would still find a means to coordinate their behavior to a single side of the road. Take the example of the simple game shown in Figure 2.5 of a one-period simultaneous move game. Two drivers are speeding towards one another on a narrow dirt road and need to swerve either left or right to avoid an accident.

Figure 2.5: Rules of the Road

		Driver B	
		Left	Right
Driver A	Left	1, 1	0, 0
	Right	0, 0	1, 1

There are three Nash equilibria in the game: both drivers choose right, both drivers choose left, and both drivers randomize and go right 50% of the time and left 50% of the time. Without more information about the vehicles, the players, or the history of driving, there is no clear way to settle on one of the three equilibria. Staying to the right or left is an arbitrary decision, and the convention concerning which side of the road to drive on has changed over time. The dominant convention in much of continental Europe switched from the left to the right at the time of the French Revolution, but the process of switching was protracted, including switches by Hungary and Czechoslovakia during German occupation during WWII and ending with Sweden in 1967 (Young 1996). A convention of everyone driving on the right side of the road needs no enforcement. It is a Nash equilibrium, a focal point (Schelling 1960) and the outcome of a path dependent series of events. Once drivers have the expectation that other drivers will swerve right, then swerving right is the focal point equilibrium.

Any rule or norm is embedded within other competing and complementary institutions that will affect individuals' behavior. Higher expected penalties for not following a rule may increase compliance, but the effect of a change in one institution on the rest of the institutional matrix is not always clear. For instance, suppose a university raises the penalty for being found guilty of cheating on an exam from failure of the exam to automatic expulsion from the university. The university administrators anticipate that this increase in the penalty will lower the quantity of cheating. But suppose there is a consensus on campus that the new set of sanctions is "too strong." Behavior will therefore change on a number of margins. Raising the penalty may cause students who observe other students cheating to not report observed infractions to the formal system. It may cause faculty members who observe cheating to adjudicate outside of the formal system to avoid having their students expelled. It may also cause the organization charged with hearing cases of cheating to be less likely to find an accused student guilty. Looking simply at the increase in the fine, one would expect cheating to fall. But if the increased fine causes the formal process to break down, then cheating may actually increase. University administrators may tout the reduction in cheating due to the increased penalty, but what they may be observing is not less cheating, only less reporting of cheating.

Workplace rules often enumerate a list of activities that are forbidden or a minimum level of effort that is required. But “for organizations to work well, it is not enough for employees to accept commands literally. In fact, obeying operating rules literally is a favorite method of work slowdown during labor-management disputes, as visitors to airports when controllers are unhappy can attest” (Simon 1990: 32). In a workplace where a great deal of initiative is required by employees, rules can only set a minimal baseline of behavior. The true determinant of work effort is not the rule but the norms of behavior and the expectation that any one worker has about her coworkers’ levels of effort.

Rules and Norms in Yucatán, Mexico¹⁹

In 1910, on the eve of the Mexican Revolution, the most important agricultural export from Mexico was not sugar, coffee or cotton, but henequen, an agave whose long leaves were processed to make twine for the McCormick binder. Henequen was grown on haciendas in the state of Yucatán, in an area previously used for slash and burn agriculture and cattle grazing. Henequen plants lived twenty years, the first six of which were unproductive. Harvesting, weeding, and planting occurred year round, and the leaves needed to be processed quickly once harvested. The structure of the relationship between hacendados and the mostly Maya workforce took a distinct form. Prior to the Revolution, American “muckraking” journalists travelled to Mexico and reported that millions of Mexicans were living in a state of “helpless peonage.” In Yucatán, this relationship was based on loans from the hacendados to the workers that were listed on the books, but were never expected to be repaid. Understanding how this particular contract was chosen among all the options for organizing labor requires an understanding of Yucatán’s cultural and political history.

Mexico’s constitution of 1857 was the basic law of the land. It outlawed slavery, going so far as to free any slave that stepped foot onto Mexican soil. A worker could not “be compelled to render personal services without due compensation and without his full consent.” Especially for its time, the enumeration of rights in the 1857 constitution was “exhaustive.” These constitutional rules were not, however, the rules on the ground. Yucatán was ruled by an elite that consisted of the thirty most prosperous henequen families, the so-called *Casta Divina* (Divine Caste), and political power was closely intertwined with economic power. At the local level, hacendados made rules of their own, enforceable through violence, and those rules were supported by the local political bosses.

The labor contract between workers and hacendados was structured around two social norms. The first was a consumption norm that Maya workers had a relatively expensive wedding at an early age. This norm seemed to have its roots in Maya culture, but its specific manifestation during this period was in the form of a Catholic wedding officiated by the local priest. Neither the workers nor their families could afford to pay for the wedding, so they were lent the money by the owner of the hacienda on which they lived. While these loans were recorded on the books of the hacienda, in practice, they were never repaid and can be thought of as gifts from the hacendado to the workers. This brings up the second norm, a norm of reciprocity. Workers reciprocated the hacendados’ gifts by staying on the hacienda and providing loyal-like behavior. Some workers fled and some paid off their debts, but most were born,

¹⁹ The information from this section is drawn from Alston, Mattiace, and Nonnenmacher (2009).

worked, and died on the same hacienda. Only by understanding the specific political environment, norms, rules, and enforcement mechanisms can this unique contractual mechanism be understood.

Property Rights

Were institutional statements perfectly enforced, individuals would always follow the prescriptions of what they must, must not, or may do with their property. One framework in the legal scholarship for understanding what the word “property” means is that it consists of a bundle of legal relationships, often called a “bundle of sticks” or a “bundle of rights,” that can be separated, combined, altered, traded and described both individually and collectively. The law of property is not about our relationship with objects but about our relationships with other people, and those relationships change over space and time. This framework for studying the component parts of property traces back to Hohfeld (1913, 1917), who argued that property was composed of four dyads: rights-duties, privileges-no rights, power-liability, and immunity-disability. Hohfeld’s framework allows legal scholars to break the legal relationships associated with property into their component parts to clarify their exact form. When we begin to list these relationships, we see quite quickly that a piece of property includes a long list of abilities and restrictions that both the “owner” of the property and other members of society have. (Alchian, 1965; Barzel, 1997) An owner of a piece of land might have the ability to sell, lease or subdivide it, while society may have the ability to regulate, tax, or take it for public use.

Suppose that you own a house and the land on which it is located. The property may be zoned single family residential, so building an apartment or commercial building is forbidden. The property may contain wetlands or an historical building, the regulation of which may diminish your ability to build. You may be restricted to whom you sell your property.²⁰ You may be restricted in your right to rent out your house.²¹ If you are allowed to rent out your house, there may be laws controlling how much rent you can charge.²² Surface and subsurface rights to land can be separated; one person can own the right to build on a piece of land, while another owns the right to mine for coal on it.²³ Other people may have the right to enter your property without your explicit permission.²⁴ The courts may find that certain activities on your property are forbidden because they interfere with your neighbors’ enjoyment of their

²⁰ Mexico had a rule for many decades limiting foreigners from purchasing property within 50 km of the coast. <http://latino.foxnews.com/latino/money/2013/04/24/mexico-loosens-restrictions-on-foreigners-buying-property/>

²¹ The apartment rental service Airbnb has faced regulatory pressure in certain cities. <http://www.nytimes.com/2012/12/01/your-money/a-warning-for-airbnb-hosts-who-may-be-breaking-the-law.html>

²² For decades, the market for apartments in New York City has served as a case study for the perverse effects of rent regulation. <http://www.nytimes.com/2013/07/28/magazine/the-perverse-effects-of-rent-regulation.html>

²³ *Peevyhouse v. Garland Coal & Mining Company*, 375 U.S. 906, (Oklahoma, 1962).

²⁴ In some U.S. states, hunters are allowed to enter unposted private land without permission. <http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1238&context=dli>

property.²⁵ You may be limited your ability to hang your laundry to dry, host concerts in your backyard, or install a new water heater.²⁶

To give a flavor of Hohfeld's framework, suppose that local regulations grant you the privilege to use the water in a pond on your property to irrigate crops. Under Hohfeld's framework, your neighbor has a corresponding "no right," that is, if you have the privilege to use the water, your neighbor has no right for you not to irrigate your crops with pond water. Alternatively, you may have the right that your neighbor not take your water without permission. If so, your neighbor has the corresponding duty not to take your water. Your right and your neighbor's duty mean exactly the same thing. This symmetry highlights the social nature of property. You may, through contract, exchange some of your rights and privileges with your neighbor, perhaps selling her some of your water or collectively deciding to set aside some water for conservation purposes. Once we view property as a bundle of sticks, those individual sticks in that bundle can be rearranged via contract.

While a privilege describes what you can do with property, it does not impose a corresponding duty on your neighbor. For instance, if there is stream running adjacent to your and your neighbor's land, you and your neighbor may both have the privilege to use water from the stream. In Hohfeld's framework, a privilege to use the stream does not mean your neighbor has a duty to not interfere with your collection of water. If your neighbor collects the water first, that means that you cannot collect that same water. For you to be able to collect the water unimpeded, your neighbor would need to have the duty not to interfere with your collection. In this framework, that combination would be described as a right rather than a privilege.

In practice, the property rights associated with water are very complicated.²⁷ The rights to water in the Eastern and Western United States are roughly divided by the riparian and prior appropriation doctrines governing their use. The riparian doctrine allows landowners located next to a watercourse to use that water so long as the water is used on the adjoining land and does not interfere with their neighbors' use. This allocation of property rights to water seems most appropriate "where precipitation and streams are plentiful and more-or-less uniformly spread" (Libecap 2007, 283). In the West, where water is more unevenly distributed and often must be transported great distances to its final use, a riparian system of rights that limits that transportation of water would hinder development. The doctrine of prior appropriation allows for such transportation by assigning property rights to water according to the order in which users put it to beneficial use, even if the water is used far from the water source. Under the appropriation doctrine, you can have a stream running right through your property but not have the

²⁵ In *Sturges v Bridgman* ((1879) LR 11 Ch D 852), a famous nuisance case, a doctor argued that his neighbor's confectionary disturbed his medical practice. Even though the confectioner had operated on the premise for over twenty years, the court ruled in favor of the doctor due to the nature of the residential neighborhood in which the confectionary was located.

²⁶ Local bans on line drying laundry exist across the country, and the desire to be free of its unsightliness has led to murder: "One man shot and killed another last year because he was tired of telling the man to stop hanging his laundry outside." <http://www.nytimes.com/2009/10/11/us/11clothesline.html>

²⁷ See Libecap (2007) for a more thorough description of property rights in water in the American West.

right to use the water in it.²⁸ This allocation of property rights allows for greater trade in water rights, although that trade is still greatly hindered by current law in most states. (Culp, Glennon and Libecap 2014)

While rights and privileges are distinct concepts, we generalize and use the term “property rights” to describe all of the legal relationships included in property: rights, privileges, powers, immunities, and their correlatives. There are many entitlements that can be analyzed using the property rights framework. Real property refers to land and anything attached to it. Personal property includes items that can be tangible -- cars, iPhones, and books -- or intangible -- stocks, patents and copyrights. Other entitlements, such as human rights and political rights, can also be analyzed using the property rights framework. The Bill of Rights in the U.S. Constitution and the Universal Declaration of Human Rights (UDHR) both define rights that are held by individuals and duties held by governments. The U.S. Constitution's 2nd Amendment includes the right to “keep and bear arms” and the 1st Amendment includes the right “peaceably to assemble.”²⁹ The UDHR includes the “right to a nationality” and “the right to marry and to found a family.” These institutional statements and the rights they describe generally target the government as the organization responsible for protecting or not violating them.

A danger in using the bundle of sticks metaphor is that it might leave the impression that “property rights are purely ad hoc assemblages of rights and privileges” that can be separated and combined in an infinite number of combinations (Merrill and Smith 2011, S89). This would be true if the costs of separating and assembling those rights and privileges were zero. Merrill and Smith (2011) argue that in a world in which these costs are not zero, property rights take some standard forms, whose most important characteristics are their *in rem* rights, or rights against the world. We will return to the costs of arranging property rights in the next chapter during our discussion of transaction costs but give three insights here.

The first insight is that the most important right owners of property have is the right to exclude others.³⁰ This right of exclusion makes the owners or property the residual claimants – they control any property rights not enumerated in the law and receive any benefits not controlled by others. Property owners therefore have the incentive to invest in and develop their property in ways that no one else does. Second, the costs of figuring out what rights are bundled together and who owns those rights would be “staggering” in a world in which every piece of property had a unique set of rights associated with it. To minimize these costs, the rules governing property generally fall into one of several categories. New and exotic property right schemes do arise, but they are often difficult to manage. A sign stating “Keep Out!” is much easier to understand than a sign stating “Keep Out! Unless ...” followed by a long list of exceptions. Third, these rights against the world are asymmetric. While the bundle of sticks framework

²⁸ In Colorado, even collecting rainwater on your property is largely illegal.

<http://www.nytimes.com/2015/06/16/us/a-thirsty-colorado-battles-over-the-destiny-of-its-raindrops-drought.html>

²⁹ These “rights” are framed in the U.S. Constitution as restrictions on the government. The underappreciated 9th Amendment states that citizens’ rights are not limited to those listed in the Bill of Rights: “The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.”

³⁰ This paragraph is drawn from Merrill and Smith (2011).

suggests that property rights can be arranged on a case by case basis between every member of society, doing so is much more costly than lumping all rights, such as the right of exclusion, together.

So far, we have discussed property rights using a legal framework, but economists use the term in a slightly different manner. Given that the complete delineation and enforcement of legal property rights is impossible and that someone must be the residual controller of those undefined and unenforced property rights, many uses to property fall outside of the legal boundaries. Many of those uses may be limited by social norms that are not consistent with legal rules, but uses may not be limited by rules or norms. Because rules and norms are hard to enforce, owners of property have the ability to use it in ways that fall outside of their bounds. We therefore define an *economic property right* as the ability to make a decision about resources, including human, physical, or intellectual capital, both in the present and in the future. An economic property right gives an individual or an organization the ability to “possess, use, improve, exclude, destroy, sell, transform, donate, bequeath, lease, mortgage, consume, or develop an asset” (Allen 2006, 3-4). These *de facto* rights can overlap with the rights as defined by the state, the *de jure* property rights. We will use this expanded definition of property rights in Chapter 3 when we define transaction costs.

Another justification for property rights is natural law. An 18th century Enlightenment version of property advocated by Quesnay is that property rights “were deeply embedded in a set of natural laws that had been worked out by the creator and were clearly discoverable in the light of human reason” (Rothbard 1995: 369). *De facto* and *de jure* property rights can, and often do, overlap with natural property rights, but one can possess one right without the others. Examining the property rights associated with slavery shows the overlap between the three types of rights. As defined by the Catholic Church’s position, the natural right to own slaves has changed over the centuries, depending on economic, political, and social forces. The position laid out in Vatican II in 1965 is that slavery is an infamy that poisons society. During the 19th century, the church’s position was more mixed, ranging from a description of slavery by Cardinal John Henry Newman as “a condition of life ordained by God in the same sense that other conditions of life are” to the condemnation of the slave trade by Pope Gregory XVI as “absolutely unworthy of the Christian name.”³¹ A clear, “natural” right to one’s own person did not exist for slaves during the era in which slavery flourished.

In the U.S. South, slaves were considered to be the legal property of their owners. The specific rights of slaves were dictated by the laws of individual states. Some rules, such as how slavery passed from mother to child, were similar across all states. Other rules, such as the penalty for killing a slave, varied widely. In North Carolina, the ruling in *State v. Mann* (1829) stated that owners had the right to punish their slaves in any way they deemed necessary, including killing them (Tushnet 2003). In other jurisdictions, slaves had greater protection under the law from physical abuse. Some slave codes allowed slaves to live away from the owner’s property and contract with others for their services. Other codes forbade a slave from contracting.

While slaves were the legal property of their owners and strictly limited in their legal rights, they did possess some economic rights. These rights to make decisions over the use of resources arose because

³¹ See Noonan (2005).

slaves were not automatons, allowing their owners the ability to control their every action. Slaves were human actors whose work effort needed to be incentivized, monitored and enforced. An uncooperative slave could engage in work slowdowns, petty theft, sabotage, and any number of “weapons of the weak” (Scott 1987). Slaves were given or controlled economic property rights to land, their free time, and even the right to purchase their freedom, even when legal rights did not exist. Even negative incentives, such as whippings, were only required because slaves had the ability to make decisions about work effort. Owning another person *de jure* does not imply having complete *de facto* property rights over that person.

Conclusion

Without an institutional matrix, society would be in chaos. *De facto* property rights would be undefined, and any attempt to use or improve an asset could immediately be thwarted or appropriated by other individuals. The institutional matrix consists of organizations, which create a setting in which institutions are created and enforced and also are vehicles for lobbying for higher level institutional change; individuals, who have preferences, beliefs, and the cognitive limitation of bounded rationality; institutional statements, the rules and norms that guide behavior at all levels of society; enforcement, which can be done by individuals or organizations but which is never costless; and other institutions, which shape the way in which any particular rule or norm is promulgated, perceived, and enforced. These elements define and determine the distribution of *de facto* property rights. As we will see in the next chapter, it is never the case that *de facto* property rights are perfectly defined; there are always costs associated with their establishment and protection. These costs, called transaction costs, are discussed in the next chapter and are the next major building block of the NIE.

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