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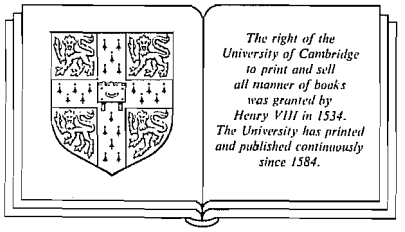
INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE

DOUGLASS C. NORTH



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I

An introduction to institutions and institutional change

Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change.

That institutions affect the performance of economies is hardly controversial. That the differential performance of economies over time is fundamentally influenced by the way institutions evolve is also not controversial. Yet neither current economic theory nor cliometric history shows many signs of appreciating the role of institutions in economic performance because there as yet has been no analytical framework to integrate institutional analysis into economics and economic history. The objective of this book is to provide such an underlying framework. The implications of the analysis suggest a reexamination of much social science theorizing in general and economics in particular, and provide a new understanding of historical change.

In this study I examine the nature of institutions and the consequences of institutions for economic (or societal) performance (Part I). I then outline a theory of institutional change not only to provide a framework for economic (and other) history, but also to explain how the past influences the present and future, the way incremental institutional change affects the choice set at a moment of time, and the nature of path dependence (Part II). The primary objective of the study is to achieve an understanding of the differential performance of economies through time (Part III).

I

Institutions reduce uncertainty by providing a structure to everyday life. They are a guide to human interaction, so that when we wish to greet

friends on the street, drive an automobile, buy oranges, borrow money, form a business, bury our dead, or whatever, we know (or can learn easily) how to perform these tasks. We would readily observe that institutions differ if we were to try to make the same transactions in a different country – Bangladesh for example. In the jargon of the economist, institutions define and limit the set of choices of individuals.

Institutions include any form of constraint that human beings devise to shape human interaction. Are institutions formal or informal? They can be either, and I am interested both in formal constraints – such as rules that human beings devise – and in informal constraints – such as conventions and codes of behavior. Institutions may be created, as was the United States Constitution; or they may simply evolve over time, as does the common law. I am interested in both created and evolving institutions, although for purposes of analysis we may want to examine them separately. Many other attributes of institutions also will be explored.

Institutional constraints include both what individuals are prohibited from doing and, sometimes, under what conditions some individuals are permitted to undertake certain activities. As defined here, they therefore are the framework within which human interaction takes place. They are perfectly analogous to the rules of the game in a competitive team sport. That is, they consist of formal written rules as well as typically unwritten codes of conduct that underlie and supplement formal rules, such as not deliberately injuring a key player on the opposing team. And as this analogy would imply, the rules and informal codes are sometimes violated and punishment is enacted. Therefore, an essential part of the functioning of institutions is the costliness of ascertaining violations and the severity of punishment.

Continuing the sports analogy, taken together, the formal and informal rules and the type and effectiveness of enforcement shape the whole character of the game. Some teams are successful as a consequence of (and have therefore the reputation for) constantly violating rules and thereby intimidating the opposing team. Whether that strategy pays off obviously depends on the effectiveness of monitoring and the severity of punishment. Sometimes codes of conduct – good sportsmanship – constrain players, even though they could get away with successful violations.

A crucial distinction in this study is made between institutions and organizations. Like institutions, organizations provide a structure to human interaction. Indeed when we examine the costs that arise as a consequence of the institutional framework we see they are a result not only of that framework, but also of the organizations that have developed in consequence of that framework. Conceptually, what must be clearly differentiated are the rules from the players. The purpose of the rules is to define the way the game is played. But the objective of the team within

that set of rules is to win the game – by a combination of skills, strategy, and coordination; by fair means and sometimes by foul means. Modeling the strategies and the skills of the team as it develops is a separate process from modeling the creation, evolution, and consequences of the rules.

Organizations include political bodies (political parties, the Senate, a city council, a regulatory agency), economic bodies (firms, trade unions, family farms, cooperatives), social bodies (churches, clubs, athletic associations), and educational bodies (schools, universities, vocational training centers). They are groups of individuals bound by some common purpose to achieve objectives. Modeling organizations is analyzing governance structures, skills, and how learning by doing will determine the organization's success over time. Both what organizations come into existence and how they evolve are fundamentally influenced by the institutional framework. In turn they influence how the institutional framework evolves. But as noted above, the emphasis in this study is on the institutions that are the underlying rules of the game and the focus on organizations (and their entrepreneurs) is primarily on their role as agents of institutional change; therefore the emphasis is on the interaction between institutions and organizations. Organizations are created with purposive intent in consequence of the opportunity set resulting from the existing set of constraints (institutional ones as well as the traditional ones of economic theory) and in the course of attempts to accomplish their objectives are a major agent of institutional change.

Separating the analysis of the underlying rules from the strategy of the players is a necessary prerequisite to building a theory of institutions. Defining institutions as the constraints that human beings impose on themselves makes the definition complementary to the choice theoretic approach of neoclassical economic theory. Building a theory of institutions on the foundation of individual choices is a step toward reconciling differences between economics and the other social sciences. The choice theoretic approach is essential because a logically consistent, potentially testable set of hypotheses must be built on a theory of human behavior. The strength of microeconomic theory is that it is constructed on the basis of assumptions about individual human behavior (even though I shall argue for a change in those assumptions in Chapter 3). Institutions are a creation of human beings. They evolve and are altered by human beings; hence our theory must begin with the individual. At the same time, the constraints that institutions impose on individual choices are pervasive. Integrating individual choices with the constraints institutions impose on choice sets is a major step toward unifying social science research.

Institutions affect the performance of the economy by their effect on the costs of exchange and production. Together with the technology em-

ployed, they determine the transaction and transformation (production) costs that make up total costs. The initial objective of this study (Part I) is to explain the existence and nature of institutions to specify the way they enter into the cost functions in an economy.

II

The major role of institutions in a society is to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction. But the stability of institutions in no way gainsays the fact that they are changing. From conventions, codes of conduct, and norms of behavior to statute law, and common law, and contracts between individuals, institutions are evolving and, therefore, are continually altering the choices available to us. The changes at the margin may be so slow and glacial in character that we have to stand back as historians to perceive them, although we live in a world where the rapidity of institutional change is very apparent.

Institutional change is a complicated process because the changes at the margin can be a consequence of changes in rules, in informal constraints, and in kinds and effectiveness of enforcement. Moreover, institutions typically change incrementally rather than in discontinuous fashion. How and why they change incrementally and why even discontinuous changes (such as revolution and conquest) are never completely discontinuous are a result of the imbeddedness of informal constraints in societies. Although formal rules may change overnight as the result of political or judicial decisions, informal constraints embodied in customs, traditions, and codes of conduct are much more impervious to deliberate policies. These cultural constraints not only connect the past with the present and future, but provide us with a key to explaining the path of historical change.

The central puzzle of human history is to account for the widely divergent paths of historical change. How have societies diverged? What accounts for their widely disparate performance characteristics? After all, we all descended from primitive hunting and gathering bands. This divergence is even more perplexing in terms of standard neoclassical and international trade theory, which implies that over time economies, as they traded goods, services, and productive factors, would gradually converge. Although we do observe some convergence among leading industrial nations that trade with each other, an overwhelming feature of the last ten millennia is that we have evolved into radically different religious, ethnic, cultural, political, and economic societies, and the gap between rich and poor nations, between developed and undeveloped nations, is as wide today as it ever was and perhaps a great deal wider than ever before. What

explains the divergence? And perhaps equally important, what conditions either lead to further divergences or produce convergence?

There is more to this puzzle. What accounts for societies experiencing long-run stagnation or an absolute decline in economic well-being? The evolutionary hypothesis advanced by Alchian in 1950 would suggest that ubiquitous competition would weed out inferior institutions and reward by survival those that better solve human problems.

Let me briefly retrace my steps in dealing with this central issue. In North and Thomas (1973) we made institutions the determinant of economic performance and relative price changes the source of institutional change. But we had an essentially efficient explanation; changes in relative prices create incentives to construct more efficient institutions. The persistence of inefficient institutions, illustrated by the case of Spain, was a result of fiscal needs of rulers that led to shortened time horizons and therefore a disparity between private incentives and social welfare. Such an anomaly did not fit into the theoretical framework.

In *Structure and Change in Economic History* (North, 1981) I abandoned the efficiency view of institutions. Rulers devised property rights in their own interests and transaction costs resulted in typically inefficient property rights prevailing. As a result it was possible to account for the widespread existence of property rights throughout history and in the present that did not produce economic growth. In that study I raised the question posed by Alchian's evolutionary argument, but had no answer. It was possible to explain the existence of inefficient institutions, but why wouldn't competitive pressures lead to their elimination? Wouldn't the political entrepreneurs in stagnant economies quickly emulate the policies of more successful ones? How can we explain the radically differential performance of economies over long periods of time?

This study answers these questions. The answer hinges on the difference between institutions and organizations and the interaction between them that shapes the direction of institutional change. Institutions, together with the standard constraints of economic theory, determine the opportunities in a society. Organizations are created to take advantage of those opportunities, and, as the organizations evolve, they alter the institutions. The resultant path of institutional change is shaped by (1) the lock-in that comes from the symbiotic relationship between institutions and the organizations that have evolved as a consequence of the incentive structure provided by those institutions and (2) the feedback process by which human beings perceive and react to changes in the opportunity set.

The increasing returns characteristics of an institutional matrix that produces lock-in come from the dependence of the resultant organizations on that institutional framework and the consequent network exter-

nalities that arise. Both the formal and the informal institutional constraints result in particular exchange organizations that have come into existence because of the incentives embodied in the framework and therefore depend on it for the profitability of the activities that they undertake.

Incremental change comes from the perceptions of the entrepreneurs in political and economic organizations that they could do better by altering the existing institutional framework at some margin. But the perceptions crucially depend on both the information that the entrepreneurs receive and the way they process that information. If political and economic markets were efficient (i.e., there were zero transaction costs) then the choices made would always be efficient. That is the actors would always possess true models or if they initially possessed incorrect models the information feedback would correct them. But that version of the rational actor model has simply led us astray. The actors frequently must act on incomplete information and process the information that they do receive through mental constructs that can result in persistently inefficient paths. Transaction costs in political and economic markets make for inefficient property rights, but the imperfect subjective models of the players as they attempt to understand the complexities of the problems they confront can lead to the persistence of such property rights.

We can expand on this characterization of institutional change by contrasting a successful path with one of persistent failure. The first is a familiar story in U.S. economic history – the growth of the economy in the nineteenth century. The basic institutional framework that had evolved by the beginning of that century (the Constitution and the Northwest Ordinance, as well as norms of behavior rewarding hard work) broadly induced the development of economic and political organizations (Congress, local political bodies, family farms, merchant houses, and shipping firms), whose maximizing activities resulted in increased productivity and economic growth both directly and indirectly by an induced demand for educational investment. The educational investment resulted not only in the free public educational system, but in agricultural experiment stations to improve agricultural productivity; the Morrill Act created the land grant public universities.

As economic organizations evolved to take advantage of these opportunities, they not only became more efficient (see Chandler, 1977), but also gradually altered the institutional framework. Not only was the political and judicial framework altered (the Fourteenth Amendment, *Munn* v. *Illinois*) and the structure of property rights modified (the Sherman Act) by the end of the nineteenth century, but so too were many norms of behavior and other informal constraints (reflected in changing attitudes – and norms of behavior – toward slavery, the role of women, and temperance, for example). Both the political and the economic trans-

action costs and the subjective perceptions of the actors resulted in choices that were certainly not always optimal or unidirectional toward increased productivity or improved economic welfare (however defined). The profitable opportunities were sometimes from tariff creation, the exploitation of slaves, or the formation of a trust. Sometimes, indeed frequently, policies had unintended consequences. In consequence institutions were – and are – always a mixed bag of those that induce productivity increase and those that reduce productivity. Institutional change, likewise, almost always creates opportunities for both types of activity. But on balance nineteenth-century U.S. economic history is a story of economic growth because the underlying institutional framework persistently reinforced incentives for organizations to engage in productive activity however admixed with some adverse consequences.

Now if I describe an institutional framework with a reverse set of incentives to those described in the above paragraph, I will approximate the conditions in many Third World countries today as well as those that have characterized much of the world's economic history. The opportunities for political and economic entrepreneurs are still a mixed bag, but they overwhelmingly favor activities that promote redistributive rather than productive activity, that create monopolies rather than competitive conditions, and that restrict opportunities rather than expand them. They seldom induce investment in education that increases productivity. The organizations that develop in this institutional framework will become more efficient – but more efficient at making the society even more unproductive and the basic institutional structure even less conducive to productive activity. Such a path can persist because the transaction costs of the political and economic markets of those economies together with the subjective models of the actors do not lead them to move incrementally toward more efficient outcomes.

This study sheds light on these contrasting stories by providing a theoretical foundation to the study of institutional change. The next chapter explores the theoretical foundations of the underlying role of institutions – the problem of human cooperation. Then come two key chapters that provide the basic building blocks of a theory of institutions. In Chapter 3 I explore, critically, the behavioral assumptions we employ and suggest modifications in those behavioral assumptions, and in Chapter 4 I provide a theoretical foundation to the costliness of exchange and its surprisingly important but unappreciated implications.

In the next three chapters I successively describe three dimensions of institutions: formal rules and informal constraints, and the effectiveness of their enforcement. Then I am in the position in Chapter 8 to tie together the threads and illustrate the relationship between institutions and transaction and transformation (production) costs.

Part II provides a framework to analyze institutional change. Chapter 9 explores organizations and the way they interact with institutions. Chapter 10 deals with the stability characteristics of institutions, which are essential to understanding the nature of institutional change. The change we observe is seldom discontinuous (although I shall explore revolutionary change) but instead is incremental, and the nature of the incremental institutional change together with the imperfect way by which the actors interpret their environment and make choices accounts for path dependency and makes history relevant (Chapter 11).

Part III relates institutions and the way they change to economic performance. In Chapter 12 I consider the theoretical implications of institutional analysis for the performance of economies both at a moment of time and over time. Chapters 13 and 14 apply the analytical framework to economic history. Chapter 13 explores the characteristics of institutional change of successively more complex economies in history and contrasts the stable forms of historical exchange with the dynamic institutional change of Western Europe that led to modern economic growth. The final chapter suggests the implications of systematically integrating institutional analysis into economic history and presents some extended historical applications.

2

Cooperation: the theoretical problem

There is a persistent tension in the social sciences between the theories we construct and the evidence we compile about human interaction in the world around us. It is most striking in economics, where the contrast between the logical implications of neoclassical theory and the performance of economies (however defined and measured) is startling. Certainly neoclassical theory has been a major contribution to knowledge and works well in the analysis of markets in developed countries. At the other end of the scale, however, it does not provide much insight into such organizations as the medieval manor, the Champagne fairs, or the suq (the bazaar market that characterizes much of the Middle East and North Africa). Not only does it not characterize these organizations' exchange process very well, it does not explain the persistence for millennia of what appear to be inefficient forms of exchange.

The disparity in the performance of economies and the persistence of disparate economies through time have not been satisfactorily explained by development economists, despite forty years of immense effort. The simple fact is that the theory employed is not up to the task. The theory is based on the fundamental assumption of scarcity and hence competition; its harmonious implications come from its assumptions about a frictionless exchange process in which property rights are perfectly and costlessly specified and information is likewise costless to acquire. Although the scarcity and hence competition assumption has been robust and has provided the key underpinnings of neoclassical theory, the other assumptions have not survived nearly so well.

For the past thirty years, other economists and other social scientists have been attempting to modify and refine the issues to see just what has been missing from the explanation. Put simply, what has been missing is an understanding of the nature of human coordination and cooperation. Now, that certainly should not surprise a disciple of Adam Smith. Smith was concerned not only with those forms of cooperation that produced

5

Informal constraints

In all societies from the most primitive to the most advanced, people impose constraints upon themselves to give a structure to their relations with others. Under conditions of limited information and limited computational ability, constraints reduce the costs of human interaction as compared to a world of no institutions. However, it is much easier to describe and be precise about the formal rules that societies devise than to describe and be precise about the informal ways by which human beings have structured human interaction. But although they defy, for the most part, neat specification and it is extremely difficult to develop unambiguous tests of their significance, they are important.

In the modern Western world, we think of life and the economy as being ordered by formal laws and property rights. Yet formal rules, in even the most developed economy, make up a small (although very important) part of the sum of constraints that shape choices; a moment's reflection should suggest to us the pervasiveness of informal constraints. In our daily interaction with others, whether within the family, in external social relations, or in business activities, the governing structure is overwhelmingly defined by codes of conduct, norms of behavior, and conventions. Underlying these informal constraints are formal rules, but these are seldom the obvious and immediate source of choice in daily interactions.

That the informal constraints are important in themselves (and not simply as appendages to formal rules) can be observed from the evidence that the same formal rules and/or constitutions imposed on different societies produce different outcomes. And discontinuous institutional change, such as revolution or military conquest and subjugation, certainly produces new outcomes. But what is most striking (although seldom observed, particularly by advocates of revolution) is the persistence of so many aspects of a society in spite of a total change in the rules. Japanese culture survived the U.S. occupation after World War II; the post-revolutionary U.S. society remained much as it had been in colonial

times; Jews, Kurds, and endless other groups have persisted through centuries despite endless changes in their formal status. Even the Russian Revolution, perhaps the most complete formal transformation of a society we know, cannot be completely understood without exploring the survival and persistence of many informal constraints.

Where do informal constraints come from? They come from socially transmitted information and are a part of the heritage that we call culture. The way the mind processes information depends "upon the brain's ability to learn by being programmed with one or more elaborately structured natural languages that can code for perceptual, attitudinal and moral (behavioral) as well as factual information" (Johansson, 1988, p. 176). Culture can be defined as the "transmission from one generation to the next, via teaching and imitation, of knowledge, values, and other factors that influence behavior" (Boyd and Richerson, 1985, p. 2). Culture provides a language-based conceptual framework for encoding and interpreting the information that the senses are presenting to the brain.

Essentially the argument being made here is an extension of the argument of Chapter 3 that processing information is the key to understanding a more complex behavioral pattern than is derived from the expected utility model. But the emphasis in that chapter was on the incompleteness of the information and the consequent need for institutions to structure human interrelations. In this chapter the emphasis is on the way that the cultural filter provides continuity so that the informal solution to exchange problems in the past carries over into the present and makes those informal constraints important sources of continuity in long-run societal change.

I

I begin by examining human interaction when there are no formal rules. How is order preserved in stateless societies? The anthropological literature is extensive, and although many of the findings are still controversial, it makes important reading not only for the study of historical work and for an analysis of order in primitive societies, but also for its implications for a modern understanding of informal constraints. Robert Bates (1987), building his analysis on Evans-Pritchard's classic study of the Nuer, states the issue of such constraints as follows:

> The puzzle, from Evans-Pritchard's point of view, was that, despite the potential for theft and disorder, the Nuer in fact tended to live in relative harmony. Insofar as the Nuer raided cattle, they tended to raid the cattle of others; raids within the tribe were relatively rare. Somehow the Nuer appear to have avoided the potentially harmful effects arising from the pursuit of self-interest. And they appear to

have done so even while lacking those formal institutions so common in Western societies which specialize in preserving the peace and forestalling violence: the courts, the police, and so on. (Bates, 1987, p. 8)

Bates then describes the deterring effects that both compensation among the tribe and the threat of feud posed for preserving order. He shows how this cooperative solution makes sense in game theoretic terms. A one-shot prisoner's dilemma problem, where it would appear that the players must arrive at a violent solution with the result that each family is worse off, is avoided. Instead an iterated game is played, and with the threat of feud it is in the interests of the parties to preserve order and hence not to pursue interfamily cattle raiding. The critical point here is that it is the members of the family themselves who prevent other family members from engaging in raiding, because a feud, once started, would be harmful to all members.

The extensive literature that anthropologists have produced on primitive societies makes clear that exchange in tribal societies is not simple. In the absence of the state and formal rules, a dense social network leads to the development of informal structures with substantial stability. No one has described this situation better than Elizabeth Colson (1974).

Whether we call them customs, laws, usages, or normative rules seems of little importance. What is important is that communities such as the Tonga do not leave their members free to go their own way and explore every possible avenue of behavior. They operate with a set of rules or standards which define appropriate action under a variety of circumstances. The rules, by and large, operate to eliminate conflict of interests by defining what it is people can expect from certain of their fellows. This has the healthy effect of limiting demands and allowing the public to judge performance. . . .

At another level, however, they would see conflict as endemic to social life because people who live in close juxtaposition use the same space and want support and attention from the same individuals. Rules, even though they may at times produce conflict, reduce the chances for conflict because they reduce the total amount of ambiguity for those concerned by defining specific rather than universalistic claims and obligations. It becomes possible to order one's life with a set of priorities regarded as legitimate. . . . Among the Tonga I have had to learn that I should not give just because I feel like giving as this is an insult to all who do not receive. Rules do not solve all problems; they only simplify life.

They also give a framework for organizing activities. Standards and some means of applying sanctions are necessary complements to the rules if a system of social control is to operate within a community. Among people such as the Tonga, onlookers apply the standards of performance in particular roles in making an overall judgement [sic] about the total person; this in turn allows them to predict future behavior. Judgment is an ongoing process through which consensus is finally reached. (Colson, 1974, pp. 51–3)

Several implications are clear from this review of work by Colson and other anthropologists. Order in the societies they describe is the result of a dense social network where people have an intimate understanding of each other and the threat of violence is a continuous force for preserving order because of its implications for other members of society. Deviant behavior cannot be tolerated in such a situation, because it is a fundamental threat to the stability and insurance features of the tribal group.

Richard Posner's model of primitive society (1980), which generates an explanation of many institutional features of such societies, is similar to the one I develop here (although mine has none of the maximizing social wealth or efficiency implications that are explicit in Posner's work). In Posner's model, high information costs, the absence of effective government, limited numbers of goods and limited trade, limited food preservation, and negligible gains from innovation produce a set of common characteristics:

Weak government, ascription of rights and duties on the basis of family membership, gift-giving as a fundamental mode of exchange, strict liability for injuries, emphasis on generosity and honor as high ethical norms, collective guilt – these and other features of social organization recur with such frequency in accounts of primitive and archaic societies as to suggest that a simple model of primitive society, which abstracts from many of the particular features of specific societies, may nonetheless explain much of the structure of primitive social institutions. (Posner, 1980, p. 8)

Posner's essay emphasizes the importance of kinship ties as the central insurance, protection, and law enforcement mechanisms of primitive societies. Bates' study of Kenya (1989) equally focuses on the changing pattern of kinship ties in the context of political/economic conditions as the key to understanding the evolving institutional constraints of a society in rapid transition from a tribal society to a market economy.

II

Informal constraints are pervasive features of modern economies as well. In order to dispel the assertion by law and economics scholars of the centrality of legal doctrine, Robert Ellickson did a field study of the way in which rural residents of Shasta County, California, resolved disputes arising over trespass damage done by stray livestock.[1] He found that the residents almost never resorted to legal redress, but instead relied on an elaborate structure of informal constraints to resolve disputes. In a subsequent article (1987) and forthcoming book, Ellickson provides a great

[1]Appropriately titled "Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County" (1986).

deal of additional empirical evidence of the pervasiveness of informal constraints.

Even the most casual introspection suggests the pervasiveness of informal constraints. Arising to coordinate repeated human interaction, they are (1) extensions, elaborations, and modifications of formal rules, (2) socially sanctioned norms of behavior, and (3) internally enforced standards of conduct. I elaborate on each of these aspects of informal constraints.

1. In a study of the institutional foundations of committee power Shepsle and Weingast (1987) demonstrate that the power of congressional committees that is not explained by the formal rules is a result of a set of informal unwritten constraints that have evolved in the context of repeated interaction (exchange) among the players. These constraints evolved from the formal rules to deal with specific problems of exchange and became established as recognized institutional constraints even though they were never made a part of the formal rules. Committee chairs and committees consequently have an influence over legislative choices that could not be derived from the formal structure.

2. Robert Axelrod (1986) provides a vivid illustration of a socially sanctioned norm of behavior. The night before he was to engage in a duel with Aaron Burr, Alexander Hamilton sat down and wrote out all the reasons why he should not accept this challenge; a crucial one, of course, was that he was likely to get killed. Yet, in spite of the overwhelming rational bases for not dueling, he felt that his effectiveness in the public arena would be significantly diminished by such a decision because dueling was the accepted way to settle disputes among gentlemen. Social norms dictated the choice, not formal rules.

3. Both of the first two types of informal constraints can be modeled in the context of wealth-maximizing models and therefore lend themselves to treatment in neoclassical (and game theory) frameworks. But internally enforced codes of conduct only have meaning in terms of informal constraints, altering choices when the individual gives up wealth or income for some other value in his or her utility function. Numerous essays explore voting behavior by legislators and conclude that one cannot explain legislative voting behavior by an interest group model (in which the legislator faithfully mirrors the interests of his or her constituents), but must take into account the subjective, personal preferences of the legislator (Kalt and Zupan, 1984). This literature is controversial because of the statistical problems in getting unambiguous answers, but there is abundant qualitative and quantitative evidence that the lower the price of ideas, ideologies, and convictions, the more they matter and affect choices (for empirical support see Nelson and Silberberg, 1987).

III

How do we explain the emergence and persistence of informal constraints? A pervasive but relatively simple to explain form of such constraints is conventions that solve coordination problems: "These are rules that have never been consciously designed and that it is in everyone's interest to keep" (Sugden, 1986, p. 54). The usual illustration of such a convention is *rules* of the road. The important characteristic of conventions is that, given the costs of exchange (Chapter 4), both parties have a stake in minimizing the costliness of measurement and the exchanges are self-enforcing. In terms of the total resources that go into transacting in an economy, conventions that solve coordination probably account for a larger proportion of the costs of transacting than the other informal constraints described later in this chapter (although in many instances the transaction costs in fact reflect a combination of sources of informal constraints).

Informal constraints that arise in the context of exchange but are not self-enforcing are more complex because they necessarily entail features that make the exchange viable by reducing measurement and enforcement costs. In the absence of constraints, asymmetric information and the consequent distribution of the gains will lead to devoting excessive resources to measurement or indeed can lead to exchange not taking place at all because the exchange is unenforceable. Informal constraints can take the form of agreed upon lower cost forms of measurement (standardized weights and measures, for example) and make second- and third-party enforcement effective by specific sanctioning devices or information networks that acquaint third parties with exchange performance (credit ratings, better business bureaus, etc.). Such organizations and instruments that make norms of cooperative behavior (informal constraints) effective are not only a major part of the story of more complex exchange through history, but are strikingly paralleled by the game theoretic models that produce cooperative outcomes through features that alter discount rates and increase information. The growth of more complex forms of exchange in later medieval and early modern Europe was made possible by a variety of informal institutions such as the early law merchant's publicized codes of merchant conduct. Prices current and the development of auditing and accounting techniques lowered critical (i.e., measurable) information and enforcement costs. These can be modeled in a game theoretic framework by raising the gains from cooperative action or raising the costs of defecting (see Milgrom, North, and Weingast, 1990).

Much more difficult to deal with in theoretical terms than wealth

maximizing informal constraints are internally enforced codes of conduct that modify behavior. It is difficult because one must devise a model that predicts choices in the context of the trade-off between wealth and other values. But strong religious beliefs or commitment to communism, for example, provide us with historical accounts of the sacrifices individuals have made for beliefs. As noted earlier, experimental economics provides evidence that individuals do not always free-ride and a study by Frank (1988) provides both a large body of evidence and a model of such behavior.

The literature cited above and the earlier chapter of this book dealing with human behavior make clear that motivation is more complicated than the simple expected utility model. Chapter 3 also emphasized that under certain conditions traits like honesty, integrity, and living up to a reputation pay off in strictly wealth-maximizing terms. Still unexplained is a very large residual. We simply do not have any convincing theory of the sociology of knowledge that accounts for the effectiveness (or ineffectiveness) of organized ideologies or accounts for choices made when the payoffs to honesty, integrity, working hard, or voting are negative.

Two partial explanations are Howard Margolis's (1982) dual utility model (mentioned in Chapter 2) and Robert Sugden's argument about conventions acquiring moral force. Margolis's argument is that individuals possess not one but two utility functions: *S* preferences are governed by the usual self-interest preference function, whereas *G* preferences are purely social (group interested). Margolis attempts to give empirical content to the argument by developing a model with assigned weights given self-interest preferences versus weights given group-interest preferences and by exploring the conditions under which the weights change. Sugden (1986) maintains that a convention acquires moral force when almost everyone in the community follows it, and it is in the interests of each individual that people with whom he or she deals follow the rule providing that the individual does too. What evolves according to Sugden is a "morality of cooperation" (Sugden, 1986, p. 173).

IV

It is time to pull together and summarize the argument of this chapter. The way by which the mind processes information not only is the basis for the existence of institutions, but is a key to understanding the way informal constraints play an important role in the makeup of the choice set both in the short-run and in the long-run evolution of societies.

In the short run, culture defines the way individuals process and utilize information and hence may affect the way informal constraints get specified. Conventions are culture specific, as indeed are norms. However

norms pose some still unexplained problems. What is it that makes norms evolve or disappear – for example, dueling as a solution to gentlemanly differences?

Even if we do not possess a good explanation for social norms, we can model wealth-maximizing norms in a game theoretic context. That is, we can explore and test, empirically, what sorts of informal constraints are most likely to produce cooperative behavior or how incremental changes in such informal constraints will alter the game to increase (or decrease) cooperative outcomes. This approach may increase our understanding of the development of more complex forms of exchange, such as the early evolution of financial markets.[2]

A transaction cost framework equally offers promise of exploring informal constraints. Although the informal institutional constraints are not directly observable, the contracts that are written, and sometimes the actual costs of transacting, provide us with indirect evidence of changes in informal constraints. The striking decline in interest rates in the Dutch capital market in the seventeenth century and in the English capital market in the early eighteenth century provides evidence of the increasing security of property rights as a consequence of the effective interaction of a variety of both formal and informal institutional constraints. For example, the enforcement of contracts that evolved from merchant codes of behavior included ostracism of those who violated agreements and the eventual encoding of customary practices into the formal law.[3]

The importance of self-imposed codes of behavior in constraining maximizing behavior in many contexts also is evident. Our understanding of the source of such behavior is deficient, but we can frequently measure its significance in choices by empirically examining marginal changes in the cost of expressing convictions. Such analysis opens the door to explaining the power of subjective perceptions in affecting choices. If the demand function is negatively sloped (i.e., the lower the cost of expressing one's convictions the more important will the convictions be as a determinant of choice) and formal institutions make it possible for individuals to express preferences at little cost to themselves, then indeed the subjective preferences that individuals hold play a big part in determining choices. Voting, hierarchies that produce slack in the principal/agent relationship in legislatures, and lifetime tenure for judges are formal institutional constraints that lower the cost of acting on one's convictions.

It is simply impossible to make sense out of history (or contemporary

[2]For an interesting game theoretic application, see John Veitch, "Repudiations and Confiscations by the Medieval State" (1986).

[3]See Douglass C. North, "Institutions, Transaction Costs, and the Rise of Merchant Empires," in J. Tracy, editor, *The Political Economy of Merchant Empires,* Cambridge University Press (forthcoming).

economies) without recognizing the central role that subjective preferences play in the context of formal institutional constraints that enable us to express our convictions at zero or very little cost. Ideas, organized ideologies, and even religious zealotry play major roles in shaping societies and economies.

Nineteenth-century U.S. economic history, briefly described in Chapter 1, is full of illustrations. Whether we trace the history and consequences of the abolitionist movement, or examine the reasoning of Supreme Court justices that explicitly undergirded the decisions they handed down, or explore the organization, policies, and legislative enactments of the Greenback, Granger, and Populist movements of the U.S. farmer, they all only make sense in the context of subjective perceptions of the actors in the context of formal institutional structures that altered the price individuals paid for their convictions and hence enabled their choices to become effective.

In the first case the religious zealotry of the abolitionist groups that activated them to organize politically, together with the Northern electorate's growing conviction of the immorality of slavery and the 1860 election, led to the Civil War and the elimination of slavery (Fogel, 1989). In the second case the lifetime tenure specified for justices shielded them from interest group pressures and permitted – encouraged – them to vote their convictions. Their convictions were derived from their subjective construction of the issues. From the Marshall Court (1801 to 1835) to the Rehnquist Court, the justices have interpreted and reinterpreted essentially the same set of rules. The Court reverses itself 180 degrees over time because the judges' subjective modeling of the issues changes. The third case reflects farmers' persistent beliefs that they were being wronged by monetary policies, railroads, grain elevators, bankers, and others. They acted on these convictions by forming organizations with the objective of enacting *corrective* legislation first in state legislatures, then through the Populist party and the Democratic party in the U.S. Congress.

What determines how much people will pay to express and act on their convictions? We seldom know much about the elasticity of the function or shifts in the function, but we do have abundant evidence that the function is negatively sloped and that the price incurred for acting on one's convictions is frequently very low (and hence convictions are significant) in many institutional settings.

The long-run implication of the cultural processing of information that underlies informal constraints is that it plays an important role in the incremental way by which institutions evolve and hence is a source of path dependence. We still are a long way from having any neat models of cultural evolution (although see Cavalli-Sforza and Feldman, 1981, and Boyd and Richerson, 1985, for some interesting attempts), but we do

know that cultural traits have tenacious survival ability and that most cultural changes are incremental.

Equally important is the fact that the informal constraints that are culturally derived will not change immediately in reaction to changes in the formal rules. As a result the tension between altered formal rules and the persisting informal constraints produces outcomes that have important implications for the way economies change, which is the subject of Part II.

6

Formal constraints

The difference between informal and formal constraints is one of degree. Envision a continuum from taboos, customs, and traditions at one end to written constitutions at the other. The move, lengthy and uneven, from unwritten traditions and customs to written laws has been unidirectional as we have moved from less to more complex societies and is clearly related to the increasing specialization and division of labor associated with more complex societies.[1]

The increasing complexity of societies would naturally raise the rate of return to the formalization of constraints (which became possible with the development of writing), and technological change tended to lower measurement costs and encourage precise, standardized weights and measures. The creation of formal legal systems to handle more complex disputes entails formal rules; hierarchies that evolve with more complex organization entail formal structures to specify principal/agent relationships. The general characteristics of the shift from status to contract have been amply discussed, but it is worth emphasizing the following.

Formal rules can complement and increase the effectiveness of informal constraints. They may lower information, monitoring, and enforcement costs and hence make informal constraints possible solutions to more

[1]For a lengthy and thoughtful discussion of what we mean by formal rules, see Elinor Ostrom (1986). Ostrom breaks down the rule structure into the following specifics: position rules that specify a set of positions and how many participants hold each position, boundary rules that specify how participants are chosen to hold these positions and how participants leave these positions, scope rules that specify the set of outcomes that may be affected and the external inducements and/or costs assigned to each of these outcomes, authority rules that specify the set of actions assigned to a position at a particular node, aggregation rules that specify the decision functions to be used at a particular node to map action into intermediate or final outcomes, and information rules that authorize channels of communication among participants in positions and specify the language and form in which the communication will take place.

complex exchange (see Milgrom, North, and Weingast, 1990, and Chapter 7 for elaboration). Formal rules also may be enacted to modify, revise, or replace informal constraints. A change in the bargaining strength of parties may lead to an effective demand for a different institutional framework for exchange, but the informal constraints stand in the way of accomplishing it. Sometimes (but not always) it is possible to supersede the existing informal constraints with new formal rules (this point will be elaborated and qualified in Chapter 10).

I

Formal rules include political (and judicial) rules, economic rules, and contracts. The hierarchy of such rules, from constitutions, to statute and common laws, to specific bylaws, and finally to individual contracts defines constraints, from general rules to particular specifications. And typically constitutions are designed to be more costly to alter than statute laws, just as a statute law is more costly to alter than individual contracts. Political rules broadly define the hierarchical structure of the polity, its basic decision structure, and the explicit characteristics of agenda control. Economic rules define property rights, that is the bundle of rights over the use and the income to be derived from property and the ability to alienate an asset or a resource. Contracts contain the provisions specific to a particular agreement in exchange.

Given the initial bargaining strength of the decision-making parties, the function of rules is to facilitate exchange, political or economic. The existing structure of rights (and the character of their enforcement) defines the existing wealth-maximizing opportunities of the players, which can be realized by forming either economic or political exchanges. Exchange involves bargains made within the existing set of institutions, but equally the players at times find it worthwhile to devote resources to altering the more basic structure of the polity to reassign rights.

The extent of economic and political diversity of interests will, given relative bargaining strength, influence the rules' structure. The immediate reason is that the more numerous the interests, the less likely the simple majority (in the polity) will obtain and the more likely exchange will be structured to facilitate complex forms of exchange (partly formal but also partly informal) and other ways of solving problems by coalition formation. It is important to note, however, that the function of formal rules is to promote certain kinds of exchange but not all exchange. Thus Madison, in *Federalist Paper Number 10*, maintained that the constitutional structure was devised in 1787 not only to facilitate certain kinds of exchange, but also to raise the costs of those kinds of exchange that promote the interests of factions. Similarly, in economic exchange patent laws and

trade secret laws are designed to raise the costs of those kinds of exchange deemed to inhibit innovation.

Before going further, it is important to stress that there is nothing in my argument so far about rules that implies efficiency. As stressed above, rules are, at least in good part, devised in the interests of private well-being rather than social well-being. Hence, rules that deny franchise, restrict entry, or prevent factor mobility are everywhere evident. This is not to deny that ideas and norms matter, but to establish that as a first approximation, rules are derived from self-interest.

Rules are generally devised with compliance costs in mind, which means that methods must be devised to ascertain that a rule has been violated, to measure the extent of the violation (and consequent damages to the party to exchange), and to apprehend the violator. The costs of compliance include measuring the multiple attributes of the goods or services being exchanged and measuring the performance of agents. In many cases, the costs of measurement, given the technology of the time, exceed the gains, and rules are not worth devising and ownership rights are not delineated. Changes in technology or relative prices will alter the relative gains from devising rules.

With these generalizations as background, we can now use the framework derived from Chapters 3 and 4 to describe more closely political rules, property rights (economic rules), and contracts.

II

Broadly speaking, political rules in place lead to economic rules, though the causality runs both ways. That is, property rights and hence individual contracts are specified and enforced by political decision-making, but the structure of economic interests will also influence the political structure. In equilibrium, a given structure of property rights (and their enforcement) will be consistent with a particular set of political rules (and their enforcement). Changes in one will induce changes in the other. But because of the priority of political rules, we will analyze the structure of the political system first.

We start with a simplified model of a polity made up of a ruler and constituents.[2] In such a simple setting, the ruler acts like a discriminating monopolist, offering to different groups of constituents protection and justice or at least the reduction of internal disorder and the protection of property rights in return for tax revenue. Because different constituent groups have different opportunity costs and bargaining power with the

[2]This simple model is developed in much more detail in Chapter 3, "A Neo-classical Theory of the State" in North (1981).

ruler, different bargains result. But there are also economies of scale in the provision of these (semipublic) goods of law and enforcement. Hence, total revenue is increased, but the division of incremental gains between ruler and constituents depends on their relative bargaining power; changes at the margin, either the violence potential of the ruler or the opportunity costs of the constituent, will result in redivisions of the incremental revenue. Moreover, the ruler's gross and net revenue differ significantly as a result of the necessity of developing agents (a bureaucracy) to monitor, meter, and collect the revenue. All the consequences inherent to agency theory obtain here.

This model of the polity becomes one step more complicated when we introduce the concept of a representative body reflecting the interests of constituent groups and their role in bargaining with the ruler. This concept, consistent with the origin of parliaments, estates general, and cortes in early modern Europe, reflects the needs of the ruler to get more revenue in exchange for which he or she agrees to provide certain services to constituent groups. The representative body facilitates exchange between the parties. On the ruler's side, this leads to the development of a hierarchical structure of agents, which is a major transformation from the simple (if extensive) management of the king's household and estates to a bureaucracy monitoring the wealth and/or income of the king's constituents.

When we move from the historical character of representation in early modern Europe to modern representative democracy, our story is complicated by the development of multiple interest groups and by a much more complicated institutional structure devised to facilitate (again given relative bargaining strength) the exchange between interest groups.[3] This political transaction cost analysis is built on the recognition of the multiplicity of interest groups reflecting concentrations of voters in particular locations. Thus in the United States polity, there are elderly in Florida and Arizona, miners in Pennsylvania and West Virginia, artichoke growers in California, automobile manufacturers in Michigan, and so forth. Because

[3]The development of political theory in the last twenty-five years has paralleled developments in economic theory. The developments began in an a-institutional setting, in which the model paralleled the a-institutional model of economics. But the result, in terms of the formal theory, was that no stable equilibrium would evolve and that *cycling* would be a continuous pattern of political systems (at least in two-party, nonideological models). However, this formal finding was at odds with empirical and descriptive studies that provided no evidence of such disequilibrating characteristics, and it remained to take a further step in political theory to explore the nature of the institutional structure that provided for the evolution of equilibrium states in the political system. For a description of this evolution and a model of structure-induced equilibrium, see Kenneth Shepsle, "Institutional Equilibrium and Equilibrium Institutions" (1986).

there are multiple interest groups, no particular interest group that a legislator may represent can form a majority. Therefore, legislators cannot succeed acting alone, but must make agreements with other legislators, with different interests.

What kinds of institutions will evolve from exchange relationships between legislators reflecting multiple interest groups? Previous work, beginning with Buchanan and Tullock (1962), focused on vote-trading or logrolling. This approach was a step forward in recognizing the way by which legislators can strike bargains that facilitate exchange; however, it is too simple to solve fundamental problems involved in legislative exchange. It assumes that all bills and payoffs were known in advance, and it has a timeless dimension to it. In fact, a variety of exchanges arise in which today's legislation can only be enacted by commitments made for a future date. To lower the costs of exchange, it was necessary to devise a set of institutional arrangements that would allow for exchange over space and time. As with the economic exchange described in Chapter 4, the problem is to measure and enforce the exchange of rights.

How does credible commitment evolve to enable agreements to be reached when the payoffs are in the future and on completely different issues? Self-enforcement is important in such exchange, and in repeat dealings a reputation is a valuable asset. But as in economic exchange, the costs of measurement and enforcement, discovering who is cheating whom, when free-riding will occur, and who should bear the cost of punishing defectors make self-enforcement ineffective in many situations. Hence political institutions constitute ex ante agreements about cooperation among politicians. They reduce uncertainty by creating a stable structure of exchange. The result is a complicated system of committee structure, consisting of both formal rules and informal methods of organization. The evolution of this structure in the U.S. Congress is described in a recent study of the structure by Barry Weingast and William Marshall entitled "The Industrial Organization of Congress" (1988). In their conclusion, Weingast and Marshall specify the kind of structure that evolved:

> Instead of trading votes, legislators exchanged special rights affording the holder of these rights additional influence over well-defined policy jurisdictions. This influence stems from the property rights established over the agenda mechanisms, that is, the means by which alternatives arise for votes. The extra influence over particular policies institutionalizes a specific pattern of trades. When the holders of seats on committees are precisely those individuals who would bid for votes on these issues in a market for votes, policy choice under the committee system parallels that under a more explicit exchange system. Because the exchange is institutionalized, it need not be renegotiated each new legislative session, and it is subject to fewer enforcement problems. (Weingast and Marshall, 1988, p. 157)

The evolution of polities from single absolute rulers to democratic governments is typically conceived as a move toward greater political efficiency. In the sense that democratic government gives a greater and greater percentage of the populace access to the political decision-making process, eliminates the capricious capacity of a ruler to confiscate wealth, and develops third-party enforcement of contracts with an independent judiciary, the result is indeed a move toward greater political efficiency. But it would be wrong to assert that the result is efficient political markets in the same sense as we mean efficient economic markets. The existence of efficient economic markets entails competition so strong that, via arbitrage and information feedback, one approximates the Coase zero transaction cost conditions. Such markets are scarce enough in the economic world and even scarcer in the political world. It is true that the move toward a democratic polity will reduce legislative transaction costs per exchange (as elaborated by Weingast and Marshall, 1988), but not only will the number of exchanges increase so that the size of the total political transaction sector will grow, the agency costs between constituent and legislator and legislator and bureaucrat will be substantial. Moreover, *rational ignorance* on the part of constituents is going to increase the role, in many situations, of incomplete subjective perceptions playing an important part in choices. The atypical informed constituent may indeed know his or her own interest in making choices about familiar *local* repeated problems, but even the informed constituent is going to be at sea in making choices about the complex nonrepetitive problems of an interdependent political and economic world. The point is that formal political rules, like formal economic rules, are designed to facilitate exchange but democracy in the polity is not to be equated with competitive markets in the economy. The distinction is important with respect to the efficiency of property rights.

III

As a first approximation we can say that property rights will be developed over resources and assets as a simple cost-benefit calculus of the costs of devising and enforcing such rights, as compared to the alternatives under the status quo. Changes in relative prices or relative scarcities of any kind lead to the creation of property rights when it becomes worthwhile to incur the costs of devising such rights. This simple model has been the basis not only for my own early work (North and Thomas, 1973) but also for a substantial amount of the property rights literature, which looks on the development of property rights as a simple function of changes in economic costs and benefits. The simple model of the evolution of property rights would be consistent with Axelrod's *The Evolution of Coopera-*

tion (1984), but such an argument leaves out the role of the polity and the consequent kinds of property rights that will be specified and enforced.

In North (1981), I revised the 1973 argument to account for the obvious persistence of inefficient property rights. These inefficiencies existed because rulers would not antagonize powerful constituents by enacting efficient rules that were opposed to their interests or because the costs of monitoring, metering, and collecting taxes might very well lead to a situation in which less efficient property rights yielded more tax revenue than efficient property rights. This argument is an improvement over the efficiency argument but needs amplification.

The efficiency of the political market is the key to this issue. If political transaction costs are low and the political actors have accurate models to guide them, then efficient property rights will result. But the high transaction costs of political markets and subjective perceptions of the actors more often have resulted in property rights that do not induce economic growth, and the consequent organizations may have no incentive to create more productive economic rules. At issue is not only the incremental character of institutional change, but also the problem of devising institutions that can provide credible commitment so that more efficient bargains can be struck. In Chapter 11, I shall explore how such sufficient paths of development can persist through time.

IV

The rules descend from polities to property rights to individual contracts. Contracts will reflect the incentive-disincentive structure imbedded in the property rights structure (and the enforcement characteristics); thus the opportunity set of the players and the forms of organization they devise in specific contracts will be derived from the property rights structure.

The contract specified by economic theory is simple, complete, and straightforward. It involves an exchange of a unidimensional product at an instant of time. The contract in modern complex economies both is multidimensional and extends over time. Because there are multiple dimensions, with respect both to the physical characteristics and to the property rights characteristics of the exchange, of necessity the result is that one must spell out many of the provisions. Moreover, the contract will typically be incomplete, in the sense that there are so many unknowns over the life of contracts extending over time that the parties will (deliberately) leave to the courts or to some third party the settlement of disputes that arise over the life of the contract.[4]

[4]See Goldberg (1976) for discussion of relational exchange and the complicated contracts that in fact characterize modern exchange.

Contracts provide not only an explicit framework within which to derive empirical evidence about the forms of organization (and hence are the basic empirical source for testing hypotheses about organization), but also clues with respect to the way by which the parties to an exchange will structure more complex forms of organization. That is, the contracts will reflect different ways to facilitate exchange, whether through firms, franchising, or other more complex forms of agreement that extend in a continuum from straightforward market exchange to vertically integrated exchange.[5] The complex interaction of institutional constraints and the development of organizations are the subject of Chapter 9.

I should close this chapter with a word of warning – although explicit rules provide us with a basic source of empirical materials by which to test the performance of economies under varying conditions, the degree to which these rules have unique relationships to performance is limited. That is, a mixture of informal norms, rules, and enforcement characteristics together defines the choice set and results in outcomes. Looking only at the formal rules themselves, therefore, gives us an inadequate and frequently misleading notion about the relationship between formal constraints and performance.

[5]The enormous literature that has evolved in the last fifteen or twenty years in the New Industrial Organization has provided us with an immense amount of valuable material on the kinds of organizations that will evolve and the forms of governance that will be reflected as ways to solve problems of complicated exchange. See in particular Oliver Williamson, *Markets and Hierarchies* (1975), and the subsequent literature that has developed from Williamson's pioneering work.