1. The Extraordinary Power of Cooperation

It is a deep and important fact about human beings that extraordinary things can be achieved through concerted, coordinated action. The phenomena of coordination extend from elementary exchanges of goods or services between two persons, through a vast array of small to large-scale social, commercial, industrial, military, political, public and non-governmental organizations and institutions, to whole social or cultural systems, nation states, and civilizations, that extend over vast territories and persist for many generations. All of written history—itself the product of a highly complex form of concerted action—testifies to what has been and can be accomplished by the coordination of human energies.

Concerted action can be in the service of some grand shared objective such as the greater glory of God, human betterment, a sustainable environment, the advancement of the Nation, or Civilization itself. But it can also serve the several distinct and even quite prosaic concerns of individual persons—concerns for personal ideals, bodily safety, protection from adverse environmental conditions, nurturing relations, nutritional needs, and the like. In these latter cases, individuals are typically motivated to cooperate with one another, not from a sense that some shared objective can thereby be advanced, but rather from a sense that their own, more personal interests can thereby be advanced. In this study, my focus will be on the question of the comparative value of various ways of organizing and enforcing market exchange relations, as judged from the perspective of the several personal and everyday interests of the participants.

2. Viewing Arrangements from a Rational Choice Perspective

To show that a given way of arranging market activity better promotes the disparate interests of those who participate in it is to appeal to a familiar criterion of rationality—that of instrumental rationality. In one sense of the word ‘rational’, then, an arrangement that more effectively promotes the concerns of its participants is a more rational arrangement. Such a criterion of rationality is normative, teleological, instrumental, and individualistic, in its orientation. The principle is normative in the sense that it constitutes a criterion for judging not what persons do in fact do, but...
what they should (as judged from a certain perspective) do. To characterize a particular policy or institutional arrangement as rational is to recommend it and to suggest that, at least other things being equal, it ought to be adopted; that is, it is to provide a defense or justification of that policy or arrangement.

The criterion is teleological in the sense that it specifies that what ultimately counts for this kind of justification are the goals or ends that are espoused by the persons whose activities are to be regulated by those practices. It is instrumental in the sense that evaluation in terms of it proceeds by reference to how well such policies and institutions contribute to, or further, the realization of those ends or goals. Finally, it is individualistic in that I shall assume that if a given person ought to support a particular policy or institutional arrangement, and, more specifically, ought to accept some constraint on his or her own choice behavior, it should be possible to show that the policy or arrangement effectively serves some end or goal embraced by that person.¹

3. Market Exchange as an Institution

While the benefits of exchange can be realized in some cases by very simple, *ad hoc* arrangements between persons, the most significant forms of exchange involve much more elaborate arrangements. They are arrangements that extend over time, define on-going relations between persons, and continue to exist through the substantial (and eventually the total) replacement of individual participants. Characteristically they involve the specification (implicitly or explicitly) not only of what is to be done and by whom, but also of rights and duties, roles and responsibilities for participants. Such arrangements constitute what are appropriately characterized as *institutions*.

Focus on some particular institutional arrangement that is designed to facilitate the exchange of goods between persons. At any given point in time the choices of the persons in question will be constrained by a set of rules that serve to define the manner in which they are expected to coordinate their actions.² The individuals involved not only understand that there are certain restrictions on the choices they make; they also generally expect other members of the group to act in accordance with these restrictions as well. Every such “arrangement” between the members of such a subgroup, then, involves both a normative or preceptorial and an expectational dimension.³ That is, each participant understands that the rules defining the arrangement constitute constraints upon their own actions, and correspondingly expects that other members of the same group (or at least most other members of the group) will also constrain their own actions in a similar fashion.⁴ But these expectations are not purely predictive. These rules, in specifying constraints that participants are to observe in the choices they make, give rise to rights and obligations, and thus provide a basis for criticism or negative judgments directed at those who fail to “live up” to them.

How, in this context, are we to understand the concept of a rule? There is a much discussed and helpful distinction that can be introduced—between the rules of a practice and rules that are merely maxims.⁵ A rule of the latter type serves to
summarize past findings concerning the application of some general choice-supporting consideration to a particular case. Such a rule presupposes choice-supporting considerations and cases that are logically prior to, and thus can be described without reference to, the rule. Correspondingly, a person is always entitled to reconsider the correctness of the rule, and to question whether or not it is proper to follow it a particular case. More specifically, taking exception to such a rule can always be justified, in principle at least, by direct appeal to the underlying choice-supporting considerations.

The rules of a practice or what I have characterized as an institution have a very different status. Consider, for example, the rules of a game. Such rules have two features. First, they are logically prior to the cases to which they are to apply. The idea is that a particular type of action falling under the rule of a particular game (for example, in the game of baseball, the rule that allots the batter three strikes on any occasion at bat) would not be described as that type of action unless there was an established practice (the game of baseball). Second, those who participate in the game are not at liberty to decide for themselves on the propriety of following the rule in particular cases. In particular, while the rule itself may be defended by appeal to various considerations, those who play the game cannot justify taking exception to the rule on a particular occasion by direct appeal to those considerations. Now the rules to be associated with institutional practices can be understood to share the second, although not necessarily the first of these two features. With respect to the institutions of exchange, even if there were no extant rules governing a case in question, one might still think of oneself as facing essentially the same options, even if one understood that a special set of considerations were pertinent to their evaluation. Thus the first feature need not be satisfied. But with regard to the rules of extant practices, we do think that the second feature is a defining characteristic. That is, we tend to think that the extant rules have the kind of priority that we associate with the rules of a game, namely, that which is signaled by their satisfaction of condition (2).

4. Institutions as Forms of Social Capital

There are many different questions that can be raised about institutional arrangements, in general, and those of market exchange more particularly. One may ask how they arise and are sustained, how they condition and interact with one another, and how they channel and shape human motivations, etc. But my concern here is with a particular characteristic of such arrangements, namely, that they can be interpreted in a particular functional way, as furthering in some fashion or other the goals or interests of (at least some of) those who participate in them. That is, such relational structures can make possible the achievement of certain ends that would not be attainable in their absence.

What is clear, moreover, is that they function in a very distinctive way. Exchange arrangements, like many other social, political and economic institutional arrangements, function in a manner that is quite analogous to physical and human capital. That is, they constitute an asset for at least some of those who participate in
them. When they are in place, they are capable of generating benefits (goods, income, etc.) without themselves being consumed. Economists use the term human capital to refer to the stock of skills and productive knowledge possessed by individuals. Analogously, one can speak of social capital in the case where the non-consumable productive resource consists in a (more or less) stable arrangement—a structured or organized (and not just incidental or ephemeral) form of interacting, which is predictable, replicable, and rule- or norm- governed. 6

5. Institutions as Primary Goods.
The rules defining an institution, and hence the institution itself, may be essentially shaped by the specific interests that are to be served thereby. But different institutional structures may also serve as more-or-less functional equivalents to one another with respect to some objective or set of objectives. And correspondingly, a particular institutional arrangement may be designed to serve some specific objective, or it may be useful for the realization of many different objectives. In the later case, as a resource or form of capital, the institution may function in a manner that is analogous to the way in which primary goods function for the individual. That is, they constitute prerequisites or resources for the effective promotion of a wide range of different interests of participants. Their significance lies in the fact, then, that individuals will have an interest in having them in place regardless of their more specific objectives. As such, they are not just capital assets or resources, but, in addition, they constitute primary(social) goods.

6. A Classification of Some Important Dimensions of Social Capital
The above characterization of social capital is still very general, and neutral with respect to just how relations are organized. The claim is simply that some ways of structuring relations can facilitate certain goals, or a wide variety of different goals. 7 For purposes of understanding how institutional arrangements can function to promote the objectives of some group of participants, the following ten-fold set of distinctions will prove to be useful. 8 Briefly put, an institution can involve: (1) personal or impersonal ties between individuals; (2) informal or formal codification; (3) egalitarian or hierarchical structures; (4) apply to specific subgroups of persons or to all members of any given society; (5) serve the interests of all or only some of those who participate; (6) generate positive or negative externalities, i.e. provide benefits or impose costs on non-participants; (7) voluntary entry/exit or involuntary participation; (8) shared or interdependent value interests. In addition, an institution can (9) be enforced by social sanctions, or a third-party formal system of sanctions, or general acceptance and inner commitment to a norm of abiding by such rules (or some combination of these); (10) arise in some indirect, unintended manner or be more deliberately instituted; and, where more or less deliberately instituted, arise either by a “bottom-up” or a “top-down” process.
In some cases, the distinction in question defines a dimension along which a given arrangement can be located, and, in other cases, the possibilities can be classified in discrete dichotomous, or, in certain cases trichotomous, terms. In the remainder of this Chapter I will gloss these various distinctions, and indicate why they are relevant to the question of the effectiveness of any arrangement. In the next two lectures I will explore much more fully their relevance in this respect.

(1) Personal v. Impersonal. The preceptorial relations between persons may be predicated on personal acquaintanceships, or they may govern relations between persons who may be complete strangers to one another. This dichotomous distinction is best understood not between cases in which persons are known to each other and those in which they are not, but between relations that do depend upon knowledge by acquaintance and those in which such knowledge is not required.

Many neighborhoods, recreational, and social groups, are composed of persons who are known to each other. Similarly, one can find in the “informal” economy of many countries, extensive networks of persons whose personal knowledge of each other plays a key role in transactions. In fact, much of the original work on social capital was devoted to a study of elaborate networks of trust and reciprocity, in which personal ties between individuals play a key role. At the other end of the spectrum, ordinary commercial transactions in modern industrial societies are governed by preceptorial rules that do not presuppose that persons are personally acquainted, although, of course, in many cases, especially where repeated transactions take place, persons can come to be acquainted with one another. Similarly, the employees in a large firm interact with one another in accordance with preceptorial rules regardless of whether they know each other or not.

It has been argued that relations based on personal acquaintanceships can facilitate conditions of trust between persons; but in fact, there are many different ways to establish trust, so the story to be told here is considerably more complicated than this. What does seem clear is that personal networks can provide a very effective (and in certain circumstances a less costly) system of surveillance. One must be careful to distinguish between personal acquaintanceship and face-to-face encounters, however. There is knowledge to be gleaned from dealing face-to-face with others, even if they are strangers.

Familial relations, it should be noted, are not really based upon knowledge by acquaintance, since both family and clan relations are almost always defined genetically. A child who is inadvertently removed from the family at birth, and raised by others, is still a member of the family, even if any other member of the family does not personally know him or her.

(2) Informal v. Formal. At one extreme, one can have relations that define what is essentially an entirely informal arrangement, in which the preceptorial rules or norms are given by an “unwritten” code of conduct that has typically evolved over a long period of time. In such cases, it is customary to speak of “cultural” norms that vary from one social, national, or ethnic group to another. Such informality, of course,
does not preclude there being written documents that purport to “capture” or codify the relevant set of rules (as in the case of rules of etiquette) or norms of a particular culture. But the practice in question does not depend upon such codifications, and participants are typically described as being able to conform to the rules of the practice as the result of some process of knowing how to do something rather than as a result of ordinary propositional knowledge.

At the other extreme one can have relations that are fully codified, in the form of written rules, to which there are typically appended extensive interpretive statements. The codification may originate in a legislative enactment at some level or other of the governance structure (local, regional, national), or it may have evolved gradually, as in the case of common law principles. Quite obviously, any given arrangement may involve some mixture of these two, so that there is a continuum of possibilities. For a theory of efficient arrangements, the significance of the distinction consists in the fact that informal codes tend to be less costly to maintain, since they do not require the creation and promulgation of official documents, elaborate interpretive documents, and special roles for interpreters and administrators.

(3) Horizontal v. Vertical. The arrangement may position individuals as essentially equal to one another, or it may specify various forms of super-ordination and subordination. Perhaps the simplest form of subordination is that associated with a principal-agent arrangement, in which one person is expected to make choices with the explicit direction of another. But, more generally, virtually any complex arrangement that is predicated upon a division of labor, will involve some hierarchical structure in which some persons issue directives and others are expected to execute them. Thus the relation of management to workers, of officials to ordinary citizens, of priests and clerics to members of a religious congregation, and of rulers to subjects, etc., signals in each case some kind of hierarchical structure. This, again, defines a continuum of possibilities, since a given arrangement may be more or less horizontal or vertical.

The presence or absence of hierarchy turns out to be of importance in at least three separate respects. First, the presence of hierarchy affects the distribution of goods or benefits amongst the participants, since the power that goes with occupying a position of super-ordination is itself a resource that can enable its possessor to secure desired things. And the differentials in the distribution of such benefits that arises in this way between different participants can be a source of significant social conflict. Second, the creation of positions of authority and power opens up the possibility of the misuse of that power, something that is a significant object of prudential concern. Third, however, the creation of chains of command and control can reduce the costs of coordinating a lot of people. As we shall see in the next chapter, one of the most important of hierarchical structures—the collective voting rules associated with democratic governance, permit significant savings with respect to what are known as the decision-making and opportunity costs associated with multilateral agreements amongst persons who are essentially equal to one another.
(4) Subgroup Specific v. Universal. An arrangement may encompass all the members of some extensive socio-political unit (such as all members of a Nation state) or it may hold only with respect to some more or less well-defined sub-group of that larger unit. In what is to follow, I shall use this distinction in this relativistic manner. That is, whatever we choose to fix upon, as the criterion of a more comprehensive community unit, be it tribal, ethnic, territorial, or political, one can ask of a given arrangement, whether it applies to all the members of that unit, or only binds the members of some subgroup therein. It is typically the case that arrangements between persons are intended to provide benefits for the members themselves (or at least some sub-group thereof). Obviously there are exceptions. Charitable groups are specifically designed to provide benefits for some group of persons who are disjoint from those engaged in organizing the charitable effort. And of course, even if not intended, the efforts of some group can have positive spillover effects for non-members—see (6) below. But the overwhelming evidence from the social sciences is that subgroup specific arrangements contribute to the creation of a dual standard of conduct in the way in which persons deal with one another, in which other members of one’s own group are owed heightened consideration in comparison to those who are not in the group. This in turn often creates significant barriers to peaceful and productive interactions across groups. Historically, the extraordinary conflicts that arose between religious groups are a grim reminder of the costs of the emphasis on the distinction between “us” and “them”.

(5) The Internal Distribution of Benefits and Responsibilities. Let us define the internal benefit set as the set of those who are participants and who stand to benefit by a given arrangement. There is no assurance, a priori, that any arrangement will distribute benefits evenly to all who participate in the arrangement. Indeed, it is quite possible that those who receive any benefits at all are simply a proper subset of those who participate in the arrangement. We may ask, of course, why individuals would be willing to participate in an arrangement under which they would receive no benefits, or even be disadvantaged. If, as we have suggested, we suppose that individuals approach participation from an instrumental perspective, then participation without compensating benefits might seem quite anomalous. But the anomaly may have a simple explanation in one or the other of the following two considerations. First individuals may not be aware of—for example, may be misinformed about—the distributive implications of the arrangement. Second, individuals may be fully aware of the differential nature of the benefits provided, but believe that the arrangement yields them a better deal than what they could expect to get if they refused to cooperate on those terms. In a world in which benefits are distributed according to the principle of to each according to his or her threat advantage, one can expect significant inequalities in the distribution of benefits. Where there is misinformation, of course, unevenness in the distribution of benefits will be a potential source of internal dissention and conflict, as persons come to a more accurate understanding of the situation; where individuals consciously accept less simply because they think this is the best they can do, the element of conflict will be actual rather than merely potential.
(6) **Externalities.** Let us characterize the set of persons to whom the preceptorial relations apply as the normative set. We can then ask whether there are persons not in the normative set who are either benefited or disadvantaged by the arrangement. If some are benefited, then the arrangement has what economists characterize as positive externalities. If some are disadvantaged, then the arrangement has negative externalities. Of course, typically any given arrangement will have both positive and negative externalities. The latter, it is plausible to suppose will be the source of dissention and conflict between groups, or between those in the group and those outside. But one should also not overlook the possibility that positive externalities can be the source of conflict. In so far as an arrangement involves participants accepting benefits in return for responsibilities and other burdens, the existence of positive externalities will mean that some receive benefits without any corresponding burdens, and this is likely to encourage participants to object, and to insist that those others should also bear some of the burdens and thus be brought into the arrangement.

(7) **Voluntary v. Involuntary.** Some arrangements permit persons to freely enter and leave; others involve substantial restrictions on entry and exit. Within the context of modern industrial societies it is characteristically the case that many arrangements are entered into voluntarily. Persons usually get to decide what social groups they will participate in, and who they will transact with in the market place. Most, however, are still born into a society that involves a complex set of pre-existing arrangements. Only in special cases do persons choose what family and clan they belong to, or their citizenship. Of course, in many societies persons can renounce their family ties, and citizenship can be renounced by emigration. Such options, however, carry with them very substantial costs—so that for the typical person these are usually measures only of extreme and last resort. Finally, there are special circumstances under which the duties and liabilities of certain arrangements cannot be avoided at all—as, for example, when the civil arrangement results in one’s being incarcerated and/or one’s property being confiscated. In what follows the possibility of exit from an arrangement under less than very costly conditions will prove especially significant. Liabilities that cannot be avoided except at great personal cost pose a special problem for anyone who is prudent.

(8) **Shared v. Interdependent Goals.** To imagine an arrangement which participants regard as having instrumental value does not yet say what relationship there is between the goals or interests of the various participants. One obvious case is where all the participants just happen to share a goal (or set of goals)—that is the identically same, not just similar, goal or set of goals.

For example, all may be selflessly committed to the greater glory of God, or country, or to some utilitarian principle. Conformity on the part of all to what is expected of them under the arrangement may in such a case be itself constitutive of, or merely means to, a state that each is committed to realizing. In such cases the participants may still face a problem of coordination, of course. Those who are selflessly committed to some higher cause may yet fail to adequately align their actions with one another, just as soldiers who go to battle committed to the defeat of the enemy
may yet fail to adequately coordinate their actions and suffer defeat themselves. That
the goal or end is fully shared, of course, does not obviate any potential conflict.
Participants, while sharing that goal (or set of goals) will typically also have other
goals, which are not shared, and different persons may prioritize their concerns in
different ways.

At the other end of the continuum, there are cases in which the arrangement is best
understood as simply a shared means to what are divergent ends or goals. In this
case, coordination is motivated by each having a more or less separate goal, but each
also having a sense that his or her own goal cannot be effectively furthered without
coordination or cooperation with others. And in certain cases each may have a well-
founded belief that others stand to gain as well. That the arrangement is perceived to
serve the interests of some particular person will motivate that person to participate.
That he or she believes that others stand to gain, will provide him or her with reason
to expect that others will participate as well. One of the most fundamental forms of
cooperation is that of a bilateral exchange of goods, and there is no reason to suppose
that either party need be motivated to participate in the exchange by anything other
than a desire to improve his or her position. Similarly, persons may agree to
participate in productive activity that is characterized by a complex form of division
of labor for no other reason than that each expects to promote his or her own interest
thereby. But there are other, quite distinct and equally important examples. For
example, individuals may coordinate on a scheme for right- (or left-) handed driving,
without each having any other concern than to minimize his or her own risk of
collision with others. One can expect that when arrangements are based merely on
shared means to divergent ends, the problem of potential conflict is likely to be
greater.

(9) Enforcement. There are at least three distinct ways in which arrangements may
be enforced. First, an arrangement may constitute a game-theoretic equilibrium, in
the sense that a rational move for each, given that each other chooses to act in
conformity with the arrangement, is to act in conformity with the arrangement. A rule
regarding which side of the road to drive upon is typically cited as an example of such
equilibrium. If all others (or even almost all others) are driving on the right side of
the road, then it is in one’s own interest to also drive on that side of the road. Second,
conformity on the part of each may be secured by reinforcing the arrangement by the
application of informal sanctions. Such informal sanctions may consist of “verbal”
penalties (e.g., criticism) that are meted out to those who do not conform, or verbal
rewards for conformity. Alternatively, and more substantially, non-conformists may
find themselves ostracized by the group in some fashion or other. Third, conformity
may be secured, instead, by the utilization of third-party enforcement devices, in
which individuals are designated whose responsibility it is to keep members of the
group under surveillance, and to meet out appropriate punishments to those who fail
to do their part, or rewards to those who do. The function of both informal and
formal, third party social sanctions and rewards is to restructure the situation in such a
way that it is now rational for each to conform. As we shall see, recent work on
institutional economics suggests that such alternative ways of securing conformity are
relevant to a theory of the efficient organization of coordination, since they typically have associated with them very different schedules of costs.

(10) Unintended v. Intended. Some arrangements arise more or less very gradually, and somewhat spontaneously, that is, not as the result of any deliberate plan on the part of the participating individuals, but rather indirectly and unintentionally. Others are more or less deliberately put into place. It is plausible to suppose that many social customs and conventions arise in a more or less spontaneous fashion. In particular, many can be interpreted as solutions to more or less pure coordination problems, which arise through a process in which a purely random or accidental cultural mutation persists either because of its survival value or because of imitation and habit. At the other extreme there are arrangements, e.g., explicit contracts, that arises as the result of deliberate decisions on the part of individuals. Arrangements often share some of the features of both of these two ideal types, and thus this distinction defines a continuum along which any given arrangement can be located.

In cases where the arrangement emerges as the result of deliberate choices on the part of individuals, a further distinction can be drawn according as the impetus to its formation is either essentially “bottom-up” or “top-down”. The former is the pattern we observe in the case of consensual arrangements between persons; the latter is the pattern we observe in the case in which some exert an influence on others (as a result of their superior physical or psychological (charismatic) power. It is a typical (though not a necessary) feature of “top-down” processes that inequality in power manifests itself in an inequality in the distribution of the benefits that the arrangement generates. Charismatic leadership can, in contrast, yield an arrangement under which there is an emphasis on egalitarianism. Correspondingly, while “bottom-up” processes tend to be more egalitarian, they need not be so. Persons may judge that significant differentials in the benefits distributed among the members of the group may, in certain cases, work to the advantage of all, and thus be willing to consent to such inequalities.

Where the arrangement is one that has emerged as the result of a gradual evolutionary process, it may be very difficult to deliberatively introduce changes, even though such changes may be defensible from an efficiency point of view. More generally, the path-dependent nature of the underlying evolutionary processes may provide significant constraints on efficient adaptation. In the case of deliberately instituted arrangements, the principle of there being strength in numbers suggests that the process of grouping will often take place from the bottom up, and by stages. This means, however, that at any given moment in time those who are grouped together may well be less than all those whose interests are interdependent. By the same token, however, nothing precludes there being some cooperative venture or coordination scheme whose rules are binding on all.
7. The Organization of Market Exchange Relations

It is generally acknowledged that efficient forms of market exchange presuppose relatively low levels of malfeasance and fraud. When these levels are low, the parties to the exchange can trust one another.\textsuperscript{16} The absence of such trust is costly. Either exchange does not take place, or it takes place only at a result of expenditures on the part of those involved to protect themselves from the risks involved. There are, then, significant opportunity and transaction costs that can be avoided if a climate of trust can be established.

How is the desired trust to be secured? There are at least three distinct ways in which to secure lower levels of malfeasance and fraud. One can rely upon any one, or some combination, of the following:

1. Informal personal, social or kin-based networks, which reduced fraud and malfeasance by the threat of exclusion of the offending member from the group.

2. Third-party formal surveillance and sanctions, i.e., state and/or local system of courts, prosecutors, and law officers, which serve to raise the costs of fraud and malfeasance.

3. An “internally” motivated commitment to some substantive code of conduct or to whatever code was enacted in accordance with certain procedural requirements.\textsuperscript{17}

The first two approaches rely upon external sanctions. The idea is to arrange for social or legal interventions that ensure that not engaging in fraud or malfeasance is, as much as possible, in the “ordinary” (or “economic”) interest of each participant. The difference between the first and the second is simply whether what is employed are informal social sanctions (disapproval, exclusion from the group) or formal devices, that is, laws or regulations that are backed up by third party enforcement. The third approach involves relying upon a very different motivational lever, viz., an internal sense of commitment to be guided in one's choice of action by certain constraints or rules.

Institutional arrangements of these kinds serve, then, to create an environment for exchange in which participants will be able to count upon each other in certain specified ways. Since the effect of this is to encourage mutually beneficial exchanges, one can think of these devices, as I suggested above, in Section 4 as so many different ways of generating what I characterized as social capital, \textit{that is}, capital assets consisting of on-going relations between persons that facilitate the realization of the goals of the participants.

Given the distinction between these three methods of securing trust, the question I propose to address is which one, or which combination of them, provides the most
To briefly anticipate the relevant arguments and conclusions, recent work in institutional theory provides evidence for all of the following propositions:

1. For any size group, an internal commitment to abide by the rules will minimize both enforcement and information costs.

2. As the size of the group increases, the information costs of informal networks increase faster than they do for the third party arrangements.

3. For informal networks and third-party arrangements there is characteristically a point beyond which enforcement is not cost-effective, and the reach of both is significantly limited in certain cases (e.g., for n-person interactions where individual performance cannot be monitored). In contrast, a system of internal commitment to substantive or procedural rules is not bounded in this sense, and can also function where monitoring is not possible.

4. Any system that relies upon external sanctions presupposes for its effectiveness higher levels of calculative ability than does a system of internal commitment, and the realization of such higher levels of calculative proficiency exacerbates the problem of cost-effectiveness.

5. In realistic settings, there will inevitably be individuals who are not motivated, or at least not fully motivated, by an internal commitment to abide by the rules.

These findings of comparative advantage, based on considerations of allocative efficiency, make a powerful case for a combination of third-party enforcement and an internal commitment to substantive or procedural rules as providing the most effective support for market activity. Because of (5), however, it seems clear that third party enforcement cannot be altogether dispensed with.

The value of this combination is further supported, moreover, by considerations of adaptive efficiency, that is, by attending to the dynamic or developmental aspects of interaction, and, in particular, to problems posed by the path-dependent nature of most institutional developments. More specifically, one can use dynamic model-theoretic constructions to argue for the following:

6. A group-based social enforcement approach can seriously constrain the ability of the group to take advantage of expanding exchange possibilities.

7. Group-based networks open the door to rent seeking (although third-party enforcement poses its own problem in this regard).
Group-based networks tend to discourage the kinds specialization and division of labor that appears to have been central to western economic development.

A case can be made for the economic advantages of an internal commitment to procedural, as distinct from substantive, rules, that is, to the rule of law.

As these summary statements indicate, the issue I want to address is that of comparative advantage: which type or set of types of institutional arrangements provides the most favorable setting for encouraging mutually beneficial market activity. This is the kind of question addressed by the literature on transaction costs. On the usual account, such findings of comparative advantage derive from what are essentially “static” models. But these findings can hopefully be made relevant to understanding historical developments by appeal to a dynamic or evolutionary model, according to which more efficient ways of supporting market exchange will, under competitive conditions, “win out” over the long run if and when they emerge (even if they emerge “by accident”). On the standard neoclassical model, one can also assume that successful innovations (whatever their source) will not simply win out but will be copied by others who are just as anxious to maximize their returns. Thus the long-run expectation, on this sort of model, is that there will be a relative convergence on the more efficient forms of transaction. Correspondingly, such comparative findings will be relevant to policy decisions, since in so far as institutional arrangements are subject to being deliberately crafted, crafting them with an eye to comparative advantage will contribute to a more successful future.

As I have already noted, however, recent work in institutional theory has increasingly stressed a quite distinct (albeit complementary) theme, to the effect that historical developments are characteristically path dependent. This work draws upon a quite distinct dynamic model of interaction, according to which developments at one stage “shape” or constrain future possibilities. The implication of this, both for explaining historical developments, and for policy decisions, are significant. On such an account, there is no inexorable historical march towards more efficient institutional arrangements: societies may cycle into “low equilibrium” traps, or otherwise reach some dead-end, escape from which will perhaps occur, if it occurs at all, only as a result of revolutionary change. And there is, correspondingly, no carte-blanche promise that any deliberate re-crafting of arrangements will move any given society forward in economic terms. Some aspect of the institutional structure may not be subject to deliberate change at all, being the result of some very gradual, incremental process of development that cannot be easily reversed, and this may, in turn, provide a profound constraint, at least on near future possibilities.20
8. Alternative Ways of Securing Trust

As suggested above, the kind of trust whose presence facilitates market exchanges can be secured in a variety of ways. In the next section I will take up the question of the impact of these different approaches on transaction and opportunity costs. But first, we need to explore the alternatives themselves. An important qualifying consideration here is that the trust required to facilitate market exchange is only one of many types and levels of trust that can obtain between people. Effective commercial transactions do not require that we can trust others to come to our help in time of need, to share many of our own concerns and values, to coordinate their actions with ours in the elaborate sense that we associate with a group of persons who sing or dance or play musical instruments together, or who are engaged as a team in some complex productive activity. Essentially what is required is simply that the persons interacting can count on one another to respect each other's rights, to observe (at least some level of) honesty, and to keep to the terms of whatever contracts are involved. It may very well happen, of course (and this is characteristic of trust relationships based on personal ties), that the trusting relationships that obtain between members of a given community are much more extensive than those requisite for commercial exchange. One can think in such cases that the relationships between the members of the community over-determine the extent or level of trust needed. But, if those “deeper” or “denser” social relations are likely to be there anyway, and inadvertently or indirectly provide a matrix for commercial exchange, this may simply point to an especially efficient way of providing what is needed for commercial exchanges.

With these preliminary remarks out of the way, let us consider now in more detail the three types of approach to building trust delineated above. The first appealed to the idea of informal networks of trust and reciprocity, based on friendship, family or kin relations, or cultural ties, where compliance is secured by threat of exclusion, and hence loss of future benefits. Such informal networks of trust and reciprocity possess a number of features. They constitute sets of on-going relations between persons, and not merely a temporary, ad hoc arrangements. These relations are, moreover, defined by a set of preceptorial rules, which give rise to expectations we associate with thinking of ourselves as having rights and obligations vis-à-vis one another. Again, such networks involves personal ties between people, in contrast to the impersonal exchange that is said to characterize market transactions in the model of a perfectly competitive economy. The individuals who are networked together are taken to have group specific ties to one another (ties of blood, friendship, and other on-going forms of association, such as frequent interaction in a club); and this mutual identity is taken to be a major determinate of the form of interaction that emerges in such a setting. Also, the relationship here is between individuals who are taken to be essentially equal to one another, i.e., who do not stand in hierarchical relationships to one another. Again, the relations tend to be informal, in distinction from the formal relations that obtain between persons in virtue of their occupying well-defined positions or roles in organizational or institutional structures. Correspondingly, such
networks are sustained by something quite distinct from the kinds of formal sanctions we associate with, e.g., the law. Finally, the network is typically something that is established for essentially non-economic purposes but which turns out to have economic consequences. In summary, and with reference back to the classification scheme set out in Section 6 above, the type of relationship identified here is an ongoing norm-governed relationship that tends to be (1) personal, (2) horizontal or egalitarian, (3) group specific, (4) informal, and (5) not explicitly directed at facilitating economic exchange—if and when trade is facilitated, this comes, one could say, as an unintended bonus.

While some have appealed to such a network without explicitly addressing the question of how its normative requirements are enforced, and thus without explicitly distinguishing it from one in which enforcement proceeds by means of an internal commitment to a cultural or moral code, there exists a large body of recent work that is devoted to showing that such networks require for their maintenance no more than that persons are motivated by standard economic interests, and that members of the group can convey to one another past histories of individual behaviors. The appeal here is ultimately to what have come to be known as the “folk theorems” for indefinitely repeated games. The basic idea is that the resultant system of trust is to the advantage of all who participate in it, and would-be non-compliers stand enough of a chance of being discovered to be such, and excluded from future benefits, that it is in their interest to comply.

The second approach involved the creation of a formal set of legal rules and regulations, backed up by third-party enforcement, that is, by local, regional or national investigatory and enforcement officers, and by court adjudication. Once again, the appeal is to a model in which compliance with norms of honesty and non-malfeasance is secured by an external device, by arranging incentives that ensure, as much as is possible, that individuals have a self-interested reason for complying, despite the short-term gains that can be realized by non-compliance. But in this case surveillance and sanctions are formally organized. This has been the model of choice for those who work in the neo-classical economics tradition, for no special assumptions have to be made about what motivates people, and the impersonal nature of such formal devices fits well with the model of impersonal exchange that defines a perfectly competitive market. Unfortunately, most economists simply assume that such enforcement devices are in place, and little effort is expending exploring their implications, in particular for the issue of comparative transaction and opportunity costs.

The third approach involves the idea of an informal code of conduct, backed by an internal commitment to abide by those rules (one can think here of an “ideology” or cultural norm with which the participants identify). This is the model of choice for many sociologists. Economists have been reluctant to adopt this approach, principally because they have been skeptical about how to account within the standard assumptions about rational economic choice for how such internal motivation could
arise, and even more importantly, how it could be sustained. Some institutional economists, however, have begun to insist that theorists must begin to address the role that cultural commitments (or “ideological” convictions) play in social, political and economic interaction.

As a special case of this third approach one can mention the idea of relying upon an internal commitment to norms or rules, not on the basis of their content, but on the basis of whether or not they pass a procedural test with respect to the manner in which they were enacted. Such an approach could be characterized as a commitment on the part of participants to the rule of law. In directing attention to the concept of a procedural commitment, I intend to cast my net widely here. Thus, as an example of such a way of securing trust, imagine a system in which a completely authoritarian leader establishes by proclamation the rules and laws that subsequently make for a settled normative expectation on the part of participants, and, from time to time, announces various changes in those rules or laws. If the members of the community accept this leader as the sole authority (for whatever reason), then the resulting social order provides a matrix of trust within which economic transactions can take place.

With this very broad species of procedural commitment, one can also note one subspecies that is of particular interest. This is the case where persons are internally committed to a certain set of rules and/or laws because they were enacted as a result of a consensual process in which each did or could have their own preferences counted. This adds to the procedural approach the qualification that the rule of law is a “self-imposed” rule of law.

The significance of these more finely drawn distinctions between various types of inner commitment will only emerge after an exploration of what can be characterized as various path-dependent considerations that interfere with adaptive efficiency. To anticipate, I shall argue, among other things, that the more abstract kinds of commitment embodied in an inner commitment to procedurally grounded rules, and to self-imposed rules can help to overcome certain kinds of path-dependency that would seem inevitable in the case of an internal commitment to a substantive code of conduct, and thus allow for greater adaptive efficiency.

9. Model-Theoretic Results Pertaining to Allocative Efficiency

Recent model-theoretic work on comparative transaction costs yields the following relevant findings:

*Enforcement Costs:* Holding the size of the group constant, the enforcement costs associated with an informal network of trust and reciprocity are less than those associated with a law-based, third-party enforced, system of trust. Why is social enforcement cheaper than third party enforcement? The intuitive idea is that merely shunning non-compliers is cheaper than having to select, train, and maintain a cadre
of persons specifically charged with enforcement responsibilities.\textsuperscript{30} One can also appeal to wage theory to argue that informal enforcement can also results in a more efficient way of resolving certain agency problems.\textsuperscript{31} The claim is that one can pay agents less in order to ensure their honesty than one would have to in a system in which trust is secured by third-party enforcement. Why? The answer is that in a well-functioning system of social enforcement of norms of honesty, information about deviators is conveyed to all members of the community. The agent who cheats a particular principal risks not only future employment with that principal, but with all other principals in the community as well. By way of contrast, with third party enforcement, information about deviators is not necessarily conveyed to all or even most other employers. Thus, one's chances of finding new employment are typically better.

*Information Costs*: For a group of any fixed size, there are real information costs to be associated with both social and third party approaches. Social and third party enforcement requires monitoring of performance, and hence information costs, even under conditions of perfect compliance. As the size of the group increases, however, the information costs involved in the social enforcement of trust will increase at a faster rate than in the case of third-party enforcement arrangements. This means that for groups of any substantial size there are real savings to be had by centralizing the monitoring system, and abandoning the procedure in which everyone corresponds with everyone else.\textsuperscript{32}

*Effectiveness of Enforcement*: Given that there are both information and enforcement costs associated with any system of social or third party enforcement, there will characteristically be a point beyond which external surveillance and enforcement will not be cost effective. Moreover, abstracting altogether from information and enforcement costs, the reach of both social and third party methods is limited. On the typical way of thinking, these devices are effective only in the context of bilateral interactions in which past-histories of individual performances can be kept. Multilateral interactions in which persons are able to act with relative anonymity (n-person interactions where individual performance cannot be monitored) lie beyond their reach (Hardin, 1982).

*Performance Characteristics under Less than Ideal Conditions*: Given any cooperative arrangement, inappropriate choices will be made. But, by the same token, systems of social and third party enforcement inevitably will make mistakes as well in the administration of the enforcement devices. Moreover, external enforcement of either kind presupposes, for its effectiveness higher levels of ability to calculate than does a system of internal enforcement based on the concept of the rule of law, but encouraging high levels of calculative proficiency exacerbates the problem of cost-effectiveness.\textsuperscript{35}

These considerations could be said to favor, in the balance, third party rather than social, forms of enforcement. For all that, there is no question but that there has
always been social, informal management of trust. The anthropological record is clear about this. The device of impersonal, third party enforcement appears to be invariably a late arrival in the development of various cultures. And given the incremental nature of most changes in informal, cultural forms, and the centrality of such networks to most forms of organization, it is no surprise that such networks are ubiquitous. Of course, it is consistent with this to suppose that such networks are typically be present as carryover, rather than as catalyst. This is to be expected, given the standard account of the path-dependent nature of economic development. Moreover, one must also consider the possibility that it is economic exchange relations themselves that serve to trigger the formation of many more personal networks. It has been argued, for example, that the rise of commerce in the modern period had a profound impact upon the culture of the time, that a culture based on the more “passionate” emotions and corresponding modes of interaction (honor, glory, military exploit) was gradually supplanted by a “gentler,” more civic culture. On this sort of account, the causal arrow is to be understood as going the other way, from increased economic activity to the emergence of new forms of civic or social interaction.

10. Risk Considerations

That a case can be made for the comparative advantage of third party enforcement over social enforcement, especially within the context of larger groups, has to be offset by the risk problem that third party methods impose. It is of the essence of third party methods that they involve a centralization of the diffused power that is characteristic of social enforcement. That centralization carries with it real risks, although, there are real risks associated with social enforcement as well. The risks of third-party enforcement are in part risks with respect to economic growth itself. Centralized power can be directed in such a way as to inadvertently stifle economic growth by rechanneling the pursuit of mutual advantage into rent seeking activities. It may even make possible deliberate prevention of economic growth (in the service of some ideological commitment against change).

The risks, of course, are much more general. The centralization of power also poses a threat a whole range of non-economic interests and concerns on the part of members of society, including life, liberty and the pursuit of happiness. The risks associated with the centralization of power that is involved in any third party method of enforcement is probably what most contributes to what is, in many minds, the attractiveness of social enforcement schemes. Historically, the diffusion of power involved both in a system of private property and the utilization of social methods of enforcement, has played a major role in the justification of each of these institutions, for each offers a way in which the dangers of centralized power can be neutralized at least to some extent.

If we grant that third party enforcement poses a greater risk in general, then we face a real problem of trade-offs here between economic and other kinds of interest.
Resolving such an issue will require us to look well beyond arguments about economic growth. But there are additional considerations that we need to explore that still pertain essentially to the issue of comparative economic advantage. Specifically, we need to look at the implications of alternative enforcement forms for adaptive, as distinct from allocative, efficiency.

11. Model-Theoretic Results Pertaining to Adaptive Efficiency

The story to be told about alternative forms of enforcement and adaptive efficiency is exceedingly complex. Some of the complexity has to do with the fact that in a full account of economic development, one must deal not only with the issue of effective ways to provide a background of trust for transactions, but also with effective ways to organize the firm (as an alternative to market transactions) and, more generally, organize productive (as distinct from exchange) relations. Even if we focus just on market exchange, however, there is no simple story to be told.

An important consideration here is whether the focus is on the impact of ways of achieving trust as unintended background to the operation of ideal-type, perfectly competitive markets, or as part of a conscious, deliberately organized strategy for economic gain, that is, the creation of a group or team of persons who, in virtue of sharing common interests in economic gain, could be said to constitute an organization (in the sense in which a firm is also an organization). There would seem to be considerable evidence of how clan, kin, and other networks can be effectively utilized as an alternative to impersonal exchange relations, or to improve the prospects of a group of persons in the market place. Examples range all the way from kin structured exchange activities of Chinese in Southeastern Asia, and Korean fruit vendors in New York City, to the informal networks of bureaucrats that flourished within the institutional framework of state socialism in Central and Eastern Europe, to cooperatives organized to increasing the buying power of the members of some group, to Mafia-type organization of certain sectors of the economy (drugs, gambling, etc.).

The gains to be realized by effective teamwork of the sort that can be realized at the level of clans, culturally homogeneous groups, and networks of acquaintances, have to be balanced out against certain inherent costs of such structures. There are three considerations in particular that need to be taken into account. The first pertains to how effectively networked groups can respond to opportunities for expanded exchange. There is an argument that the kind of segmentation of persons into groups that is characteristic of such a way of organizing economic activity makes responding to new opportunities more difficult. The second has to do with the implications for “rent-seeking” behavior. The presence of networks in a market exchange setting in which other participants are not networked or less effectively networked means that some will gain at the expenses of potential benefits to others. At the very least this can have significant consequences for the way in which the mutual gains of market exchange are distributed. A third consideration pertains to the distinction between...
short-term and long-term gain. What serves as an effective way of organizing exchange in the short-term, may prove to have significant negative implications for more long-term developments, especially from the perspective of path dependency and its implications for opportunity costs. Let me briefly explore each of these considerations.

I have already drawn attention to the problem of size limitation that arises in the case of informal networks of trust and reciprocity. The costs of information transmission rise dramatically in virtue of the consideration that effective monitoring requires that all members of the group be prepared to communicate to all other members any information about non-compliers. But the costs here are not confined to those implied by such a communal transmission of information. The segmented nature of such networks can contribute to opportunity costs. This becomes apparent when we consider, in a changing world, the manifold possibilities for the expansion of exchanges. As groups come into contact with one another, and thereby are presented with new opportunities for exchange, the social intra-group monitoring characteristic of such groups will stand as a barrier to expansion of exchange. In effect, exchange expansion will have to be preceded by a social interpenetration of different groups, by an expansion of the informal social networks of trust. But such social expansion will be slow to develop; indeed, inward-turning social groups may even be hostile to such expansion. This can be contrasted with the case in which third party, more formal monitoring and enforcement techniques predominate, so that persons have become accustomed to interacting commercially with strangers. Under such conditions one can predict that there will be a much greater rate of expansion. 41

13. The Implications for Rent-seeking.
The problem discussed above arises even when the segmentation of the market that networks create is relatively benign—where groups simply want, say, to encourage intra-group exchange as part of a program of preserving their own cultural identity. But networks may also function to enable those who are so connected to prosper at the expense of others in the larger community.

What the neoclassical model of perfect competition makes clear is that the mutual improvements that market activity can generate presuppose much more than that persons are predisposed, out of a desire for gain, to truck and barter with one another. What is central to its model-theoretic conception of effective interaction is that there are background rules ensuring that each decision-unit (person, group of persons, etc.) is a price-taker rather than a price-giver, that no such unit can command sufficient resources to manipulate prices. This is what ensures that prices adjust to changes in aggregate demand and supply. The “atomization” of market-place interaction that this implies is precisely what is disrupted by the formation of segmented networks of trust and reciprocity. By the creation of such networks, collections of individuals are in a position to manipulate prices, and, more generally, to secure benefits to their own
members at a cost to other, non-members. Plainly put, there is nothing in the conception of segmented trust as such that suggest that entrepreneurial energy will be channeled in a mutually beneficial rather than rent-seeking manner.\textsuperscript{42}

More generally, what the neoclassical model reminds us is that effective market exchange involves, not the emergence of an area of impersonal interaction within which there is unconstrained pursuit of gain, but an area of impersonal interaction within which the pursuit of gain is structured and constrained by an elaborate system of rules governing property and contracts.\textsuperscript{43} What provides such structure is not a dense network of segmented social groups, but a system of relatively universal rules that apply to everyone in the larger group of those whose interests are interdependent. But at that level, the informational demands of an effective system of social enforcement will be overwhelming. This brief for relatively universal rules, then, is also a brief for the superiority of third-party over social enforcement methods.


The considerations raised in the proceeding two subsections speak to specific ways in which developmental processes associated with exchange markets are subject to path-dependency and hence to potential constraints on adaptive efficiency. Networks can facilitate exchange, but in ways that can close out, or discourage, the development of more impersonally organized market activity. And the capturing of markets by networked groups of individuals can create a climate of reciprocal rent seeking that results in what economists would describe as a low equilibrium trap—that is, a relatively stable situation in which there are high opportunity costs for all. But the path-dependent nature of the processes involved extends even further than we have so far explored.

One can start by noting that there is another fundamental building block of commercial society—the principal-agent role—that is also subject to alternative ways in which it is articulated and reinforced. The concept here is that of one person (or persons), the agent, acting on behalf of another (or others), the principal (s). This is an elemental preceptorial or rule guided relation, in which one party, the principal, normatively expects the other, the agent, to do what the principal has specified that the agent is to do, and where failure of the agent to so act will elicit criticism from the principal that his or her rights have been violated. If bilateral exchange is the most basic, and simplest, kind of egalitarian or horizontal relation in the market place, then the principle-agent relation is the most basic and simplest kind of hierarchical relationship. As the former provides access to the mutual gains that can be secured through the reassignment of goods, the latter provides access to the mutual gains that a division of labor makes possible.\textsuperscript{44}

Within a model-theoretic account, the principal-agent relationship no less than the exchange transaction is inherently risky. Since the agent constitutes a distinct
motivational center, with his or her own interests and concerns, the principal must contend with the real possibility that the agent will not act as instructed, and in so doing, act against the interests of the principal. Such relations pose just the same kind of problem that arises in connection with exchange, and thus, predictably, is amenable to similar kinds of solutions. Here, no less than in the case of exchange, alternative ways of building trust are available, and once again, they are subject to similar types of costs, and to significant implications for path-dependent development.\textsuperscript{45}

What direction is taken at any given moment is likely to heavily depend on historical conditions. The importance of the historical matrix is clear whether we are talking about social networks, more general cultural norms (ideologies) or formal rules and third party enforcement devices. Networks are not easily created; they tend to be deeply conditioned by preexisting cultural norms (ideologies) that are shared by a group of people, and these latter are themselves the outcome of long, gradual processes of development.\textsuperscript{46} The feasibility of more formal institutions backed up by third party enforcement devices will also depend, at any given moment, upon the manner in which power is distributively shared in society or, where it is significantly dispersed, on the willingness of persons to support its centralization.

Perhaps even more importantly, whatever route is historically favored, it tends to determine future development as well. Social networks and cultural norms tend to be self-reinforcing, via learning processes and imitation. They result in a kind of closure, in which subsequent changes will take place either very gradually, or as the result of the impact of exogenous forces. The development of more formal and third party enforced devices, on the other hand, tends to governed by a dialectical process in which the institutional solution to any given problem is likely to generate its own problem, calling for yet another layer, as it were, of formal mechanisms.\textsuperscript{47}

\textbf{15. Inner Commitment to the Rule of Law}

In Sections 9 - 14 I focused on the comparative advantages of formal, third party enforcement methods of building trust over informal social networks. I want to turn now to an analysis of what I characterized at the outset as enforcement via an internal commitment to certain cultural norms (e.g., of honesty, fidelity, non-malfeasance, etc.). The argument here is straightforward at one level and very complicated at another. Let me begin with the straightforward part.

Regardless of the size of a group, a system of trust based on an internal commitment to a rule of law, is the most efficient system from the perspective of \textit{enforcement} costs. Inner commitment involves no enforcement costs at all, regardless of the level of compliance. It could be argued that in such a world it would still be prudent to shun those who had a reputation for non-compliance, so there are costs of exclusion to be incurred. But in a system of personal responsibility, it would be open to persons to make a discretionary choice in this regard, in a way that it would not be open within a
system of social enforcement. That system requires that each shun those who are non-compliers. This lack of discretion implies higher costs of enforcement, i.e., costs in terms of opportunities forgone (that is, to transact, despite risks, with persons identified as non-compliers).

In principle, one can expect comparatively low decision-making (principally, information) costs under a system of internal enforcement. Monitoring is essential to either a social or a third party system of enforcement. To be sure, those who reply upon inner commitment, may, at their discretion, incur information costs. On the plausible assumption that trust is always, at least for rational agents, a conditional strategy—that you will want to be cautious about keeping trust with those whom you are concerned may not keep trust with you, information will still have to be gathered as to the reliability of those with whom one interacts.

While there is a problem of diminishing returns associated with any social or third party enforcement device, no such limit obtains in the case of the method of inner enforcement. In principle, there is no reason why, say, the belief structure of a given culturally based community might not be such that there is virtual perfect compliance, via an internal, personal commitment of each to the rule of law. Correspondingly, an internally motivated commitment to a code of conduct is not limited by the inability to monitor certain kinds of behavior.

A system of internal enforcement does not involve either third-party punishment or social censure; thus it presents no problem in respect to what can be described as inadvertent errors of performance with regard to enforcement. It also does not encourage high levels of calculative proficiency that can exacerbate the problem of compliance.

In summary, where the belief systems of the agents in the group includes acceptance of principles of honesty, fidelity, and non-malfeasance, one can expect significant savings for the group in terms of surveillance, enforcement and other types of cost. At the limit, in the ideal case, if the terms of contracts and principle-agent arrangements were perfectly unambiguous, and fully specified to all the parties involved, and all had an inner commitment to the relevant norms, surveillance and enforcement costs should go to zero. In such a world, the comparative advantage would clearly lie with such an inner commitment approach to trust. It is also plausible to suppose that inner commitment would, under such ideal conditions, be superior from the point of view of adaptive efficiency—at least if adaptively defensible changes in contract and agency rules could be fully communicated to all the parties involved.

Our interest, however, is not with ideal worlds, but real worlds, and here matters turn out to be more complex. Some of the conclusions reached above do extend to less than ideal worlds. To the extent that inner commitment is operative, to that extent the group can expect to realize savings in terms of surveillance and enforcement costs,
and advantages from the perspective of adaptive efficiency. In less than ideal worlds, however, the problem of the ambiguity of the relevant norms poses a significant problem, at least when enforcement by such an inner commitment is compared with formal, third-party external enforcement. What formal mechanisms characteristically involve is not just a system of third party enforcement, but a system for adjudicating the interpretive disputes that inevitably arise regarding the application of norms of honesty, fidelity and non-malfeasance to specific cases. With respect to inner commitment there is nothing that appears to be a functional substitute for such adjudicatory procedures. It can be argued, however, that the social enforcement of such norms is beset by the same problem, so there is no case to be made there for the superiority of the social approach. It might be argued, of course, that the social network approach can include adjudicatory procedures, but this is really to suggest that more formal devices for adjudication will have a role to play. Effective adjudication requires authoritative texts and authorized personnel to interpret them, so as to bring the disputes that arise to some sort of final resolution. And even where informal social codes are extremely well defined, these are not likely to serve to peacefully adjudicate conflicts that arise between persons who belong to different sub-cultures.

16. The Case for a Procedural rather than a Substantive Form of Inner Commitment

From the perspective of allocative efficiency, there would seem to be no argument for the superiority of an inner commitment to a procedural as opposed to a substantive code. Each would equally permit substantial savings in information and enforcement costs, and equally allow for less resort to formal governmental institutions that can pose real risks with regard to economic growth, as well as the freedom, and other non-economic aspects of the well being, of the individuals involved.\(^\text{48}\)

Matters are quite different, however, when we turn to the question of adaptive efficiency. A widespread inner commitment of any sort shares this in common with a system of socially enforced norms: both constitutes informal institutional arrangements. As such, they are each typically subject to a very gradual or incremental process of development and change.\(^\text{49}\) If the commitment is to a substantive code of conduct, this poses a real barrier to adaptive processes. On the other hand, if it is an inner commitment to the rule of law—to the acceptance of the guiding function of any code or rule that passes a procedural test—then the door is open to the more rapid adaptations that may be required by other changes in the system of interaction or in the external variables that affect its output.

What about the particular version of a commitment to a procedural rule (as discussed at the outset of this lecture) where the rules that are accepted are self-imposed? It is tempting to try to argue for the superiority of self-imposed rules. But it is not clear that any such argument can be constructed specifically from the perspective of
adaptive efficiency. A procedural rule that embodies a principle of “self-imposition” will have to involve some form of democratic decision-making. But there is an extensive body of literature arguing that democratic majorities can be expected to make decisions that benefit some at the expense of others, and which even result in policies that are mutually disadvantageous in terms of economic growth and other values. Long-run economic growth may presuppose the development of the rule of law, but the latter involves commitment to a procedural norm, and, as such, is consistent with the rule of law being promulgated in a thoroughly anti-democratic, i.e., autocratic manner. Participants could, in principle, make an inner commitment to follow those rules that were promulgated in the appropriate manner by an autocrat. An enlightened autocrat, then, might be able to establish the conditions for growing market exchanges, and also smoothly make such changes as were discovered, over time, and in the face of changing circumstances, to be needed.

The proverbial problem with an autocratic procedural approach is that it creates a principle-agent problem once again, just as does a system of third party enforcement, in which the power-wielders can use the power allocated to them for personal advantage. In short, it creates its own version of the problem of rent seeking, as well as providing an ever-present threat to the freedoms of individuals. What I suggested above, however, is that democratic procedures are not guaranteed to prove any better in this regard. If there is a case to be made for a non-autocratic procedural approach, it would seem to lie in the consideration that the pluralism that it implies is likely to better serve adaptive efficiency. At least under conditions of changes in the composition and the interests of whatever group is able to form an effective majority (whatever the percentage rule) one can expect to see more experimentation, and that, in general, tends to promote adaptive efficiency.

17. The Insufficiency of Inner Commitment

I have been arguing for the comparative value of inner commitment over both social and third party methods of enforcement. But it is clear, I suggest, that inner commitment by itself cannot suffice. Two general considerations support this conclusion. First, whatever the process whereby inner commitment gets established, there is no reason to suppose that it will have a uniform hold on persons, that all will be equally disposed to accepting its discipline. It is only in ideal worlds that there are no free riders. In any real world there will always be persons who are prepared to take advantage of trust relations (however they are established). Since those who are disposed to break trust can be expected to benefit thereby at the expense of those who are guided by inner commitment, the latter will find it rational to invest resources in both social and third party enforcement methods that will serve to at least reduce the extent of free-riding. Moreover, within the context of any relatively large group of persons, the informational costs of social methods of enforcement will tend to encourage the development of more formal, third party approaches. Second, the problems of ambiguity and interpretation that must beset any informal system of
rules, whether they be enforced socially or by individual conscience, can only be resolved by moving to third party methods, at least to the extent of introducing authoritative adjudicatory procedures.

18. The Concept of Procedure and the Rule of Law.

A central theme of market exchange is that a contract is the outcome of a procedure—that of negotiation between the parties involved. It is of the essence of that procedure, moreover, that the parties will have an incentive to consider any refinement or change in a contract under negotiation, if both parties stand to benefit from it. Conceived in ideal terms, a contract has the virtue of allowing for allocatively efficient arrangements. Moreover, contracting is an open-ended process, in which parties have an incentive to renegotiate terms when all stand to gain thereby. In this sense, the ongoing process of negotiation and renegotiation exemplifies the virtue of adaptive efficiency. Efficiency is, of course, not assured. There remains, at any given stage of negotiation or renegotiation, the problem of the distribution of the gains that are possible. Similar considerations apply to governmental choice when it is democratically determined. Even under the most permissive rule—that of a simple majority—the possibility of gains for all will encourage efficient changes (although, once again, conflict over the distribution of gains can undercut adaptive efficiency).

The advantages of contractual and democratically structured collective choice procedures extend more generally to any procedural approach that internally provides for institutional modification. Such procedural approaches stand in deep contrast to the approach of custom, which at root calls for the continual ratification of what is already in place. A generic commitment to the procedural approach yields what can be characterized as a commitment to the principle of the rule of procedurally determined law. It can be argued that this general principle, in all its various ramifications, is an indispensable part of an adaptively efficient approach to institutional arrangements.

19. Conceptualizing the Emergence and Stabilization of Internal Motivation.

The findings summarized in Sections 15 and 16 suggest that there are substantial advantages to be obtained insofar as individuals can make a mutual inner commitment to choose subject to the constraints of rules. It is also important to recognize, as I pointed out in Section 17, that there are gains of this sort to be secured even if this approach to enforcement is coupled with both social and/or formal enforcement devices. That is, there are gains to be secured even if such an inner commitment governs only some activities, and, indeed, even if it only governs the choices of some rather than all participants.
But there remains a pressing problem that needs to be addressed. This is how to model inner motivation taking root and becoming stabilized within the context of standard models of rational interaction. This is especially a problem when the appeal is to neoclassical economic models, since they assume that persons act so as to realize economic gain, wealth, and the like, and it is not clear how from that perspective to treat any sort of “internal” commitment to rules. Game theory models do not present such a problem, since while they do presuppose that individuals seek to maximize (expected) utility or value, they presuppose nothing about what it is that people value. Suppose, however, that persons do have a strong inner commitment to abide by rules, so that mutual compliance turns out to be an equilibrium state. Still, this result has been secured by what is, in the absence of any additional argument, an appeal to an ad hoc assumption. That is, this way of modeling compliance is not very interesting.

A somewhat more promising move is to appeal to some sort of cultural or genetic evolutionary model, which can address the question of how such “inner dispositions,” or, more generally, “other-regarding” utility functions for persons might have evolved (see, for example, Frank, 1987; and Skyrms, 1996). Certainly there are stories to be told in this regard. But there is a basic problem with all such evolutionary models. If the disposition to internal commitment is to be accounted for in this way, the resultant disposition, or values, will be weaker in some than in others, and we will lack an adequate account of why anyone for whom the disposition is not strong, should deliberatively choose to become more strongly committed. Indeed, on the assumption that any set of cultural dispositions can be deliberatively modified to some extent or other, we face the problem of explaining why, upon reflection on the “point” of such internalized norms, any “rational” person should not desire simultaneously to encourage their acceptance by those others with whom he or she interacts, but also seek to relax the grip these norms have on his or her own conduct.

20. Rethinking Rational Cooperation

More generally, given the findings presented above regarding the comparative allocative and adaptive advantages of a system which relies (at least in part) upon “self-enforcement,” there is something odd about insisting that the solution lies in framing new hypotheses regarding the preferences of individuals, and how they might have arisen through some evolutionary process. Given the advantages of an internal commitment to procedural norms, and in particular to a rule of self-imposed laws, why should one have to postulate special motivations, special utility functions, to explain how rational agents might manage to stabilize upon such an informal norm. In the spirit of Coase, why should we not suppose that where there are ordinary (i.e., economic) gains to be mutually secured, rational persons will find ways to secure them?

What sort of a model of rational interaction would one have to invoke to account for an internal commitment to abide by rules mutually agreed upon? A sense of the direction that needs to be explored is to be found in Elster’s (1979) suggestion that
**perfect** rationality involves a capacity to relate to the future, not simply in the sense of being able to look farther ahead, but choose in a manner that can achieve what he characterizes as a “global” maximum. Elster also argued, however, that human beings manifest this capacity only imperfectly, due to weakness of will, and that typically, then, they have to settle for a second best strategy of precommitment. Thus, instead of sailing resolutely by the Siren’s island, Ulysses has himself tied to the mast and thus achieves “by indirect means the same end as a rational person could have realized in a direct manner” (Elster, 1979: 36).

Ulysses problem is metaphor for the very problem we have been exploring. The claim that rational persons cannot do better than deliberatively arrange their relations to one another so as to ensure compliance by means of social or third party devices, is the claim that such beings are at best imperfectly rational. They must expend resources, make costly arrangements, which perfectly rational persons would be able to avoid, by simply resolving (deliberatively making an inner commitment) to abide by certain rules.

Let us, following the direction suggested by Elster’s remarks (albeit a direction which he himself does not pursue), consider an alternative model of rational interaction in which individuals are not imperfectly rational. We can start by supposing that they are still driven by the desire to realize ordinary gains, but that they come to realize that the logic of certain public goods problems means that mutual savings cannot be realized unless there is a willingness to accept a basic principle of reciprocity with respect restrictions on individual choices. The principle is one that Rawls (1971: 112), following Hart, expresses in the following manner:

> When a number of persons engage in a mutually advantageous cooperative venture according to rules, and thus restrict their liberty in ways necessary to yield advantages for all, those who have submitted to these restrictions have a right to a similar acquiescence on the part of those who have benefited from their submission.

Within the context of such a revised model, it is important to note that there is, first, no compliance simply for the sake of compliance, but rather and only for the sake of ordinary gain, and, second, compliance on the part of any one agent is clearly conditional on that agent expecting that others (or at least a sufficient number of others) will reciprocate.

The idea of persons voluntarily coordinating their choices so as to secure the gains that such voluntary coordination makes possible, can be captured in a more formal way by postulating that under certain conditions interactive choice will be governed by:

**The Pareto Principle**: Rational agents who know each other to be such will, *ceteris paribus*, be willing to constrain their choices by reference to rules.
generating outcomes that are Pareto-optimal and Pareto-efficient relative to what each could expect to be the outcome, were no such coordination of choices to take place.

Variations on this postulate figure in virtually all the model-theoretic work that has been done in cooperative game theory, that is, bargaining theory and social choice theory. Moreover, the very point of the elaborate “folk” theorems of non-cooperative game theory is to establish the conditions under which arrangements satisfying the Pareto Principle are stable. But what this most recent work in non-cooperative game theory has not adequately explored is whether the sense of the mutual gains to be realized thereby can itself serve to stabilize such an arrangement.

The more traditional, tactical, and incremental conception of rationality constrains model building in a most important respect. It renders it impossible to understand rule-guided as distinct from sanction-goaded choice. From the perspective of this more traditional model, the only defensible policy with regard to rules is the flexible policy of making exceptions to following the rules whenever allowing for such exceptions contributes to the realization of the very ends for which the rules themselves were adopted. On this account, rules are to be understood as no more than maxims that is, "rules of thumb". Those who reason in this way cannot make even a very modest sort of "commitment" to act in accordance with a scheme or rule. For such persons, what was agreed upon at some point in the past will characteristically be irrelevant. The only relevant question will be whether the expected utility of acting in conformity with the rule is greater than the benefits to be secured by deviating. They will, of course, be able to implement coordination schemes. But since each will be disposed to "free-ride" on the coordination commitments of the others, they will typically have to arrange to have the coordination scheme backed up by some sort of enforcement device, so as to goad participants into compliance.

But surely sense can be made of a quite different way to think about rule-governed choice. We can imagine persons who are capable of tacitly or explicitly identifying a coordination scheme and then choosing in a rule-governed manner, even when that choice is not supported by standard (expected) utility maximizing considerations. For such persons the central question is not: What available alternative is mandated by expected utility reasoning? but rather: What course of action is called for here, given some coordination scheme on which we have tacitly or explicitly agreed, and which can be legitimated by reference to the mutual gains it makes possible?

This is not to say that such persons are, according to this revised model, slavishly committed to rules. This takes us back to what I suggested above was the other defining characteristic of the kind of inner commitment I have been exploring, namely, that it is a conditional commitment. If it is rational to be willing to accept constraints on one’s own maximizing behavior in exchange for others doing so as well, it is also not rational to accept such constraints when others are not willing to reciprocate. What this means is that while within this model rational agents do not
face the public goods problems which those in the more standard model face (being rational does not mean “free-riding” on the efforts of others), still these agents face an “assurance” problem.

This “assurance” issue must be addressed, if the alternative model we have sketched is to have any application to realistic settings on human interaction. The iterated game framework of the “folk” theorems, however, provides a setting in which the epistemological problem of assurance can be resolved. If interaction is sufficiently ongoing, then for many kinds of encounter, a given individual can have the requisite assurance regarding the dispositions of (most) other participants. The history of past encounters between participants will typically provide the needed information. It is plausible to suppose, moreover, that for many such contexts, the requisite information will be securable from anecdotal sources that it, it will be unnecessary to resort to formal mechanisms for the compiling and transmission of this information. At the “street level,” each typically will be able to consult personal experience and informally shared information with others, to determine whether the level of voluntary cooperation in more impersonal, “public” settings has been great enough to warrant voluntary compliance on one’s own part. Thus the recent work on the “folk theorems” of iterated games prepares the ground for a significant extension of the alternative model proposed here. The “folk” theorems mark out a whole range of much more realistic settings within which one can not only expect, following the standard line of reasoning, that various surveillance and enforcement systems will emerge, but also where conditions will be right for the emergence of purely voluntary, self-enforced systems of cooperation.

What such a revised model accomplishes, and what cannot be accomplished by stories about “two-termed” or “multi-termed” utility functions, is making it clear that the benefits of rule-guided behavior can be cashed out in the same coin as the benefits of economic exchange: the value of an inner commitment to rule-guided choice is precisely that it can realize economic gains that cannot be realized so long as external methods of enforcement are employed, and that a mutual understanding of such mutual gains might possibly serve to stabilize such a system of inner commitment just as much as any ideological consideration could.

21. One Final Observation

To bring these manifestly incomplete remarks on comparative advantage to at least a temporary closure, it should be observed that the proverbial question regarding the problem of securing cooperation between persons is how this can be achieved without, or at least with a minimum of, coercion. My sense—which I have tried to sketch in the last Section of this paper—is that an inner commitment to certain substantive or procedural constraints constitutes a genuine and rational alternative to the fundamentally coercive nature of all social and third party approaches to enforcement. I also hope to convince you that such an alternative requires a very
complex commitment not only to procedural principles—to the rule of law, but to substantive principles as well, to specific principles of rights and of justice. But I have much more work to do before I can hope to convince you of the power of this idea of much more expansive notion of inner commitment for a general theory of rational economic (and political) policy.

1 There are, of course, other criteria of rational choice to which appeal could be made. But instrumental rationality speaks to what is the least controversial of them. Moreover, since questions of ultimate value have proved to be so deeply contestable, an appeal to instrumental value allows for the possibility of moving beyond what is, for all intents and purposes, ideology, to something upon which there might be a reasoned (as opposed to a merely de facto) consensus among thoughtful, informed persons. Again, if one could show that certain basic forms of coordination can be rationalized by reference to the interests of those who participate in them, one might hope to provide a more secure grounding thereby for one’s sense of the importance of these institutions. Talk of the great intrinsic value of certain arrangements is all too often no more than just that—talk. And while it may serve to reinforce the convictions of those in the circle of the already committed, it usually offers little to those who, with an open mind, want to understand why these arrangements are so important.

2 North (1994) characterizes any such set of rules as a an “institution”:

Institutions are the humanly devised constraints that structure human interactions. They are made up of formal constraints (e.g., rules, laws, constitutions), informal constraints (e.g., norms of behavior, conventions, self-imposed codes of conduct) and their enforcement characteristics. Together they define the incentive structure of societies and specifically economies.

3 I take the term ‘preceptorial’ from Offe (1996).

4 Each will presumably make allowances for the consideration that others will sometimes make mistakes regarding what is required of them, or, alternatively will be faced with circumstances in which the requirements of cooperation will be overridden by other demands; and in like manner each will recognize that he or she may also make a mistake of this sort, or face overriding distinct demands.

5 The distinction is one that Rawls comments upon at great length in “Two Concepts of Rules,” Philosophical Review _____.

6 The term “social capital” is a late entry into discourse about society and the economy. It apparently dates from Hanifan (1920), and subsequently (and independently) from Jacobs (1961: 138). The sociologist Coleman (1993) notes an early use of the term in an article by Loury (1977), who uses it to characterize the differences in community and social resources between disadvantaged black children in the inner city and other children. Some years later, Coleman and Hoffer (1987) employed it to analyze the differential effect of Catholic high school and public high school programs on educational outcomes. The basic idea that certain interactions take place against the background of various kinds of social and cultural institutions is to be found, however, much earlier, especially in the work of Polanyi ([1957]1971), which in turn influenced the work
of Ben-Porath (1980) and Granovetter (1985). Neither of the latter use the term social capital, but both contribute significantly to the development of what emerged as the favored way of thinking about social capital. In their work the focus is on what can be characterized as personal, informal networks of trust and reciprocity, networks of a sort that tend to grow up gradually among frequently interacting individuals, especially those who happen to share certain basic values or a common culture. Ben-Porath (1980) provides the following succinct characterization of a such a network:

[i] It extends over long periods of time, but the duration is not specified in advance. [ii] While the scope and the importance of various activities change, the connection generally encompasses a large variety of activities. [iii] Not all terms of the contract [that is to say, the exchange or transaction] are specified explicitly--most activities are contingent on events and are decided sequentially; the response to contingencies remains unspecified, guided by general principles or rules of behavior that tend to apply to sets of similar...contracts in the society. [iv] The highly interdependent elements of the contract exist as a package...[v] There is generally no explicit balancing of the exchange in terms of a unit of account...no balancing of individual components...no running quid pro quo...large outstanding balances are tolerated; because of the unspecified nature of the contract, when and how these balances are liquidated remains open. [vi] Enforcement is mostly internal, although the contract is supported to some extent by...social forces. [vii] To varying degrees, the...contract creates a collective identity that affects the transactions of each member with people outside...[viii]. The most important characteristic of the...contract...is that it is embedded in the identity of the partners. (Ben-Porath, 1980: 3-4).

Characteristics (i) and (iii) imply that the relations are predicated on something quite distinct from, say, a purely temporary, ad hoc arrangement. Characteristic (viii) identifies the type of relation as personal, in contrast to the impersonal exchange that is said to characterize market transactions in the model of a perfectly competitive economy. The individuals who are networked together are taken to have group specific personal ties to one another. These are in turn based on ties of blood, friendship, culture, or other on-going forms of association, such as frequent interaction in a club. It is also implicit in Ben-Porath's characterization that the relationship is between individuals who are taken to be equal to one another, i.e., it is not an hierarchical relationship involving one person being in a subordinate position to another. Characteristic (v) signals that the relations are informal. What is at issue here are not the kinds of formal relations that obtain between persons in virtue of those persons occupying well-defined positions or roles in institutional or organizational structures. Characteristic (vi) implies that the network is sustained by something quite distinct from the kinds of third-party sanctions we associate with, e.g., a legal order. Finally, as the term “social capital” has come to be used, it typically refers to something that is established for essentially non-economic purposes but which turns out to have economic consequences. Social capital thus joins the inner circle, along with the invisible hand of the market, of economic concepts that work the theme of unintended consequences.

Ben-Porath's characterization was picked up by Granovetter, whose work in turn appears to have had a decisive influence upon the political scientist Robert Putnam. The latter's work, Making Democracy Work: Civic Traditions in Modern Italy (1993), has in turn stimulated a virtual watershed of analytic and empirical research on social capital. For an extremely thorough and
critical review of the history of the concept, and its problems, promises, and prospects, see Woolcock (1998).

Alongside this there is a quite distinct conceptual development that stems from the work of James Coleman:

> Social structural resources [can be conceived] as a capital asset for the individual, that is, as social capital. Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence...Unlike other forms of capital, social capital inheres in the structure of relations between persons and among persons. It is lodged neither in individuals nor in physical implements of production. (Coleman, 1990: 302).

This is, of course, a much more general conception. Many social theorists, particularly, economists, will worry that it is too general. But it is hardly empty, any more so than the concept of human capital employed by economists. It refers to a particular kind of resource, namely, to the kind of relations that individuals establish to one another and not to their individual talents and skills, or to the financial resources that such individuals can command. Although many of the authors cited earlier in this footnote are well aware of Coleman’s characterization, they inexplicably choose to narrow the concept to cover no more than various kinds of informal networks between persons.

This contrasts sharply with the definition implicit in the work of Ben-Porath and the others, cited above, where the focus is on a norm-governed relationship that is quite distinctive in a number of respects.

I make no claim here that this ten-fold classification scheme is exhaustive of relevant aspects of institutional structures. What I have listed here are simply features that are especially relevant to the analysis of subsequent chapters.

See here, in particular, Ben-Porath (1980), Granovetter (1985), and Putnam (1993).

There remains the special case in which one is made an “honorary” member of a clan or family. See the interesting discussion of this in Fukuyama (1995).

Alternatively, of course, an individual might just happen to have a view about what is intrinsically valuable that will allow him or her to support a very “odd” arrangement. In that case, however, no matter how odd, the value system is still one such that the individual stands to benefit from the arrangement in question. Imagine, for example a person who sincerely believes that he or she belongs to an “inferior” class of persons, whose members are entitled to a decidedly inferior share of the benefits that cooperation can make possible.

For a most illuminating discussion of the concept of exit, see Hirschman (1970).

Following North (1994), we may refer to any such rule-structured group as an organization, but we need not suppose, as he suggests, that an organization is a group of persons bound together by some common purpose.

See, for example, Sugden (1986).
Trust, as one recent author perspicuously suggests, "...involves giving discretion to another to affect one's own interests... [a] move [that is] inherently subject to the risk that the other will abuse the power of discretion." (Hardin, 1993).

On the usual way of thinking such a commitment would have to be cultural or "ideological" in nature; but, as I shall argue later in this paper, there are other ways in which such a commitment can be analyzed.

There are, of course, many things that impact on, and thus condition, economic growth: the availability of natural and human resources; the level of technology; environmental conditions; internal and external political events, including wars, insurrections, and revolutions; government policies; etc. In recent years, however, increasing attention has been given to how institutional arrangements in society impact on economic growth. In one much discussed account of institutions and markets, it is argued that all of the following significantly condition economic performance: (1) formal rules or constraints (laws) backed by third-party enforcement, (2) informal norms (including personal networks and cultural values), (3) knowledge and technology, (4) organizations (interest groups), and (5) centralized governmental structures. See, for example, North (1990). My focus here is considerably narrower, and this in two main respects. Institutional arrangements can be broadly classified into: social, economic, political or governmental, and legal. In addition, a distinction can be made regarding the impact of institutions on productive activity, and on exchange or market activity. My concern is only with the economic impact of certain distinctively social and/or legal institutions and then only on exchange or market activity.

It may be helpful for me to make some preliminary remarks about methodology here. I shall be confining myself to what can be described as model-theoretical findings as opposed to empirical findings. My main concern is to explore the implications of certain models of rational interaction for both explaining historical developments and for providing a guide to the practical problems that societies today face. The model theoretic studies upon which I shall focus are themselves based on what are arguably relatively secure hypotheses concerning (1) the motivational dispositions of individuals, (2) the way in which various institutional arrangements trigger or suppress or modify such dispositions, and (3) certain cost factors and other types of constraints that set limits how effective such arrangements can be. Normally, we do not expect that empirical data will falsify such background hypotheses. But the need for empirical confirmation arises very quickly. As indicated above, I shall be focusing on a particular set of factors and their relation to each other. That means that I shall have to abstract from, i.e., hold constant, all sorts of other factors. But it is not clear that the relevant causal links can be decomposed or separated quite so neatly. The way that certain institutional arrangements impact on the motivations of actors may depend significantly on what other combination of conditioning factors obtains or fails to obtain. And, in the end, it may turn out that there is no way to be sure of the empirical correctness of any particular presumed link, except to embed it in a comprehensive theory. On my reading, then, these models are best understood as contributory pieces or components of what hopefully will be a comprehensive theory of economic development. Such a comprehensive theory, in so far as it is supposed to illuminate real historical events, would have to stand the test of generating predictable results that correspond to what has in fact happened. But let me make clear that I pretend to no grand theory here. All I hope to accomplish is to show that the exploration of certain model-theoretic findings can place us in a better position to both understand the historical record itself and to better appreciate what that record itself can offer by way of confirmation or disconfirmation of some more comprehensive theory. It is also my hope, however, that such a study will have practical implications as well. We read history, and try to theorize about what happened, not simply to satisfy intellectual curiosity, but in order to be able to make better
recommendations to ourselves, and to others, regarding the practical policy problems that we all face in a rapidly changing world. Indeed, given the complex nature of human interaction over time, and the extraordinarily range of relevant factors, it may very well be that the only real test of a more comprehensive theory will be to try to generate from it a set of concrete recommendations regarding what changes to effect in a particular society, and then hope to learn from the implementation of those recommendations whether the theory is a reliable guide. That is, a study of the practical consequences of implementing certain specific recommendations, rather than a search for some historical analogue, may, in the last analysis, provide the most reliable test of such a theory.

20 Path-dependency turns out to involve a very complex and poorly understood set of factors. [Need to rehearse what North, following Arthur and David, has to say, but also take up the criticisms of Sabel.]

21 Attention to this kind of approach dates in particular from Polanyi's (1957) development of the notion of "embeddedness." The concept was subsequently explored in great detail by Ben Porath (1980), Granovetter (1985, 1993), Coleman (1988, 1990), Putnam (1993, 1995) and Hardin (1995), all of whom have been particularly interested in studying problems that lie at the intersection between economics and sociology.

22 For a general treatment of these "folk" theorems, see, for example, Fudenberg and Tirole (1992). For specific finding with regard to informal, social networks, see Kandori (1992), and Calvert (1995a, 1995b). For less formal treatments, see Greif (1994), North (1990, Ch. 5), and Hardin (1995).

23 Both this approach and the social enforcement approach described previously involve what Goodin (1996) characterizes as a "deviant-centered" approach to institutional arrangements.

24 More recently, however, thanks to the work of Coase, North (1990), Weingast ( ), Greif (1994), Calvert (1995a, 1995b), and many others, there has been a much more careful exploration of how such enforcement arrangements work and their implications for transaction and opportunity costs. Among other things, the "folk theorems" for indefinitely iterated games provide a formal account of how such sanctions work. See Fudenberg and Tirole (1992). Coase's path-breaking work on the theory of the firm is especially relevant here, and can be read as an exploration of how certain types of transaction costs associated with market exchange can be reduced by "internalizing" transactions within a firm. Of course, what replaces legal, third party surveillance and enforcement in this instance is not a horizontal, informal network of trust and reciprocity, but a hierarchical structure. Like the network, however, it motivates persons in very large part by the threat of exclusion.

25 It is important to note here that such commitment might plausibly be a conditional commitment, conditional upon an agent being satisfied that a sufficient number of others are also committed.

26 Particularly those who work in the tradition of Talcott Parsons.

27 Granovetter (1985, 1993) dismisses this approach on the grounds that it is predicated upon an "over-socialized" view of human behavior. Correspondingly, he dismisses the second approach—the one favored by economists—on the grounds that it is committed an "under-socialized" conception of human behavior. His own preferred approach, which involves an appeal to the idea
of a network of personal relations, is, then, regarded by him as a plausible middle position between two implausible extremes.

28 See in particular, North (1990, Ch. 3; and 1993). North is careful to note, however, that the resultant theory requires a substantial rethinking of the standard neoclassical model, where learning effects and socialization play essentially no role. For the greater part of this lecture I will not be concerned with how any sort of internal commitment could have emerged, and taken root (in the sense of becoming a stable institutional form). Following North (1990) and Greif (1994) I shall simply suppose that one or another form of internal motivation is something rooted in the culture of certain societies, and thus can be understood as the outgrowth of some set of beliefs (part of the “ideology”) associated with a particular historical development. In the last part of the paper I will, however, return to the question of emergence and maintenance.

29 It is traditional, within the transaction cost literature to distinguish between the costs of gathering relevant information, and the costs of enforcement. See North (1990).

30 Notice that under conditions of perfect compliance (in the language of the "folk" theorems for repeated games, when there is no off-equilibrium behavior) no costs of shunning or excluded are incurred. But in the case of system of third-party enforcement, surveillance and enforcement officials still have to be trained, supplied with appropriate equipment, and paid a wage sufficient to ensure for the most part that they do not fail to discharge their responsibilities.

31 See in particular Greif (1994).


33 Pettit (1996) offers an interesting version of this argument, to the effect that the introduction of a “deviant-centered” system of third-party sanctions can actually worsen the problem of compliance, since it can cause people to be more calculative with respect to economic benefits and rewards.

34 The classic, if altogether one-sided, statement of this, of course, is to be found in Adam Smith's remark that “people of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in conspiracy against the public, or in some contrivance to raise prices.” (Smith ([1776] 1979: 232-33).


36 See here, in particular North (1990: 14):

Historically the growth of economies has occurred within the institutional framework of well-developed coercive polities. We do not observe political anarchy in high-income countries. On the other hand the coercive power of the state has been employed throughout most of history in ways that have been inimical to economic growth. But it is difficult to sustain complex exchange without a third party to enforce agreements.

37 The argument here is manifestly incomplete. Social enforcement poses its own problem. It can manifest itself in the form of an extraordinarily repressive social regime that stifles individual freedom and initiative and all that goes with it. [Need to briefly detail some of the more obvious examples…] One must also recognize that private property poses its own problems for social order.
For an extremely interesting treatment of the relevance of alternative forms of trust for the organization of firms, see Fukuyama (1995); and for its bearing on production, see Sabel and Zeitlin (1985), Sabel (1994), Herrigel (1996).

For the distinction between institutions and organizations, see, in particular, North (1990), Chapters 1 and 9.

In an ideal-type perfectly competitive market each participant's decisions have only an infinitesimal impact on prices. There is, in effect, no room for collusion. But this is not true when groups can organize. In this respect the presence of networks undermines an important condition of the optimality of market exchange.

A particularly striking version of this argument is to be found in Max Weber, as part of his general account of the rise of capitalism:

Originally, two opposite attitudes toward the pursuit of gain exist in combination. Internally, there is attachment to tradition and to the pietistic relations of fellow members of the tribe, clan, and house-community, with the exclusion of the unrestricted quest of gain within the circle of those bound together by religious ties; externally there is absolutely unrestricted play of the gain spirit in economic relations, every foreigner being originally an enemy in relation to whom no restrictions apply; that is, the ethics of internal and external relations are categorically distinct. The course of development involves on the one hand the bringing in of calculation into the traditional brotherhood, displacing the old religious relationship. As soon as accountability is established within the family community, and economic relations are no longer strictly communistic, there is an end to the naive piety and its repression of the economic impulse. At the same time there is tempering of the unrestricted quest for gain with the adoption of the economic principle into the internal economy. The result is a regulated economic life with the economic impulse functioning within bounds. (1927: 356)

The suggestion, then, is that what makes for effective economic exchange is the creation of a new zone in between (and hence an end to a strict dichotomy between) the inner circle of clan, tribe, and house-community, on the one hand, and “the foreigner-as-enemy,” on the other hand, a new zone in which relations between persons are impersonal yet principled. This is central to Weber's thesis about Protestantism and the rise of capitalism. The antipathy of the dominant pre-Capitalistic ethics to capitalism, he argues, lay in its repugnance to

...the impersonality of relations within a capitalistic economy. It is this fact of impersonal relations which places certain human affairs outside the church and its influence, and prevents the latter from penetrating them and transforming them along ethical lines. (1927:357)

Correspondingly, it is the “breaking up of this circle of ideas” and the acceptance of a new zone of impersonal interaction, that is necessary for capitalism to flourish. But what seems to characterize the Maghribis culture that Greif examines, and the models of informal, social networks studied by Calvert, Kandori, and Hardin, is precisely that there is no breaking up of this circle of ideas: the distinction between “us” (the members of the group) and “them” (strangers) defines the network.

There are two more recent studies that offer very important insights regarding opportunity costs. The first is Greif's (1994) comparative study of the Genoese and Maghribis trading arrangements
in the Mediterranean in the eleventh century. A major finding of this study, which relies heavily on model-theoretic inferences, is that the Genoese trading culture was significantly individualistic, while the Maghribis culture was collectivist, and that this had major implications for their response to the expansion opportunities that were presented to each. The individualist cultural beliefs of the Genoese supported an “integrated” commercial society in which efficient intereconomy agency relations are pursued, while the collectivist cultural beliefs of the Maghribis supported a “segregated” commercial society in which efficient intereconomy agency relations are not established:

As trade with more remote trade centers became possible, a merchant could either hire an agent from his own economy who would sail or emigrate abroad, or hire an agent native to the other trade center. Such intereconomy agency relations are likely to be more efficient than intraeconomy agency relations, since they enhance commercial flexibility, and a native agent does not have to emigrate and is likely to possess a better knowledge of local conditions. (1994: 931)

In short, it is the Genoese, not the Maghribis culture that is organized to effectively respond to expanding trade opportunities.

Interestingly, the two systems also entail different patterns of wealth distribution, and they do so in a rather surprising manner. The Genoese system, as already noted, supports a vertical distinction between principal and agent, while the Maghribis system preserves a more horizontal and thus more "egalitarian" order. But under the individualist cultural belief system an agent's ability to commit is negatively related to his wealth. That means that wealthless individuals are better able to capture the rent (above the reservation utility) available to agents. Under the collectivist system, one's commitment ability is positively related to one's wealth. Thus, in effect, one can predict greater wealth transfers from rich to poor under the individualist system than under the collectivist system. That is, one can predict different wealth dynamics. And, once again, these are differences that are likely to have comparative efficiency implications.

Notice that both the comparative and the short-term v. long-term issues are explicitly addressed here. The kind of social organization associated with the Maghribis is acknowledged by Greif to be more efficient in supporting intereconomy agency relations and requires less costly formal organizations (such as law courts). (1994: 942). The suggestion, however, is that what may have been decisive for the long haul is that the Genoese system was able to respond more effectively to the expanded possibilities of inter-economy exchanges.

Fukuyama, like Greif, is convinced that culture makes a difference to economic performance, and he sets out to explore within the contemporary world just what is culturally common to those societies that have been most successful economically. The central thesis of the book seemingly parallels Putnam's thesis about social capital in the form of the capacity of persons to cooperate with one another. But Fukuyama identifies the key factor as a special kind of social capital which he characterizes as “spontaneous sociability,” and he goes on to argue that this kind of sociability must be clearly distinguished from the sort of sociability associated with family and kinship relations:

In any modern society, organizations are being constantly created, destroyed, and modified. The most useful kind of social capital is often not the ability to work under the authority of a traditional community or group, but the capacity to form new associations and to cooperate within the terms of reference they establish. This type of group, spawned by industrial society's complex division of labor and yet based on shared values rather than contract, falls under the general rubric of what Durkheim labeled as “organic
solidarity.” Spontaneous sociability, moreover, refers to that wide range of intermediate communities distinct from the family or those deliberately established by governments. (27, emphasis added)

Note the convergence here, from quite different methodological approaches, on a certain substantive conclusion. On a close reading, a key notion to which Fukuyama keeps coming back is that cultures based on family and kin relations cannot adapt so effectively to the opportunities offered by international markets. This is essentially Greif's conclusion regarding the value of the kind of integrated rather than segregated approach to economic interaction that was spawned by the Genoese culture of individualism: that is, the Genoese were able to transact with strangers, and thus better adapt to expanding markets.

Of course, for Greif, this kind of capacity to cooperate is based on contract, and on the institutions of impersonal trust that evolve from contract, rather than on the operation of "solidarity" While Fukuyama's work contains an extraordinarily rich set of illustrations of the power of "spontaneous sociability," what is missing, I think, is a credible theoretical explanation of the emergence of such a capacity. Greif supplies that theory, in a parsimonious way that is quite in keeping with the spirit of Fukuyama's work, namely, by tracing it back to a cultural variable, specifically the stress on individualism in the Genoese social culture. There are, of course, other explanations that can be offered. In Section __ below I will return to suggest how Weber's notion of the emergence of a more universalistic code (in which the distinction between kin and others is considerably weakened) perhaps provides a better way than Durkheim's notion of "organic solidarity" for organizing our thinking about the conditions of efficient market exchange. Here, then, is a consideration that speaks to the longer-range advantages of third-party enforcement or internal commitment to a rule of conduct, or to the rule of law, over kinship and other forms of more personal networks.

42 It is interesting to note that Granovetter recognizes this problem, and is consequently forced to deeply qualify his own embeddedness thesis:

...while social relations may indeed often be a necessary condition for trust and trustworthy behavior, they are not sufficient to guarantee these and may even provide occasion and means for malfeasance and conflict on a scale larger than in their absence. (1985: 491)

The gloss he offers here is revealing. He acknowledges, first, that the trust engendered by personal relations can enhance the opportunity for malfeasance; second, that force and fraud are most efficiently pursued by teams, and that teamwork is greatly facilitated by personal relations; and, third, that coalitions of the sort that can engender large-scale conflict can also arise as the result of networks of trust (1985: 491-3). In this respect, informal, personal, segmented trust proves to be the breeding ground for a wide range of markets failures. This is precisely the kind of conclusion to which the whole of the public choice literature, and the literature on rent seeking, is devoted to establishing. It receives a particularly powerful demonstration in the work by Olson (1982), Knight (1992) and Hardin (1995)

43 As Weber puts the point the pursuit of gain must be “rationalized and rationally tempered.” Polanyi speaks to just this point when he argues that “natural propensities” did not create markets, but instead, that "the road to the free market was opened and kept open by an enormous increase in continuous, centrally organized, and controlled interventionism.” ([1944] 1957, 140). And
more recently, Portes (1993. 432-3) makes this central to his analysis of the distinction between “informal” and “formal” economies. For economic development on a national scale,

Someone must stand outside the competitive fray, making sure that property rules are enforced and contracts are observed. Otherwise no grounds exist for predictable exchange among myriad of anonymous actors, as it occurs in real capitalist markets. ...Capitalist markets are not spontaneous economic phenomena but deliberately structured and regulated institutions. In our own terminology, the appropriate realm of the capitalist markets is the formal economy, not the informal.

44 We shall need to reflect here upon whether the gains to be realized by a division of labor can only be secured through such a hierarchical structuring of roles.

45 Here I follow the line of analysis powerfully presented by the sociologist Shapiro (1987), who has developed an account of the institutions of impersonal, third party enforced trust, with particular attention to the path-dependent manner in which they tend to emerge. She begins, as I have, with the ideas of agency and of the “risky investment... inherent in agency relationships.” (1987: 625-6). Such a relationship, she argues, is to be found in even relatively simple types of social organization, but it is especially relevant to more complex forms. It fuels social differentiation, bridges social and physical distances, and incites and facilitates collective forms of action. It is an integral feature of role specification and the segmentation of tasks into discrete operations. With the weakening of the extended family, it often provides a substitute, in the guise of more a formal organizational structure, for kinship structures. Agents are characteristically entrusted with the task of information collection, processing and interpretation. That is, their proliferation “...derives as much from the increasing scope of production and exchange that creates barriers of direct physical access to information and property as from the mere existence of specialization and differentiation and the efficiencies that arise from delegating to agents.” (1987: 627). In sum, agency relationships lie at the core of virtually all modern forms of economic activity:

...the potential for complex forms of social organization afforded by agency relationships seems infinite: global exchanges unencumbered by distance, time, commodity, or familiarity, economies of scope or scale, transactional liquidity, expanded temporal possibilities, protection from risk, the magical ability to create wholes that are greater than the sum of their parts, and a rich material and cultural life. (1987: 629)

But agency relations create a new dilemma. Such agency relationships offer opportunities for agent abuse, and hence create a problem of trust. Principals cope with this problem in a variety of ways. They can try to avoid or limit their participation in agency relationships, reduce their exposure to agency abuse by spreading their risk, personalize the agency relationship by embedding it in a structure of social relations (a reference to Granovetter's argument), or finally establish contracts, which “annunciate the principal's preferences and priorities, disclose the responsibilities and obligations of agents, explicitly state the procedures agents are to follow and the decision rules they are to employ...plan for contingencies, create incentives for contractual compliance, and specify sanctions to be imposed if agreements are not kept.” (1987: 632). Of these “solutions,” Shapiro thinks the last, contracts, is the most important. For all this, contractual control is still limited. Not only are there substantial specification costs, but also specification often requires expertise and sophistication, and principals are often not in a position to monitor the performance of agents. Agents, for their part, often find themselves bound to scores of principals with conflicting agendas. On Shapiro's account, there is a continuum between
the kind of personal trust that emerges from social networks and the impersonal trust that arises
by means of the extension of contractual relations. Roughly speaking, however, impersonal trust
arises when “social control measures derived from social ties and direct contact between principle
and agent are unavailable” (1987: 634). The purest cases of impersonal trust arise when:

1. agency relationships are not embedded in networks of social relation, 2. relationships
are episodic rather than continuing, 3. principals are “one-shotters” and agents “repeat-
players,” 4. principals cannot evaluate agent performance... (5) agents have actual
possession of principals’ property... or (6) agency offerings are not easily rescinded or

This is a disjunctive list, and hence the conditions under which impersonal forms of trust will be
required are very extensive indeed. Note also that it follows, on this account, that the principals in
a situation calling for institutions of impersonal trust are relatively vulnerable and impotent. They
“put their lives, their fortunes, and their understandings of the world at considerable risk.” (1987:
635). Thus they are driven to socially organize distrust itself, by creating trustees or guardians of
trust. These guardians

...make no assumptions about whether actors are oversocialized, undersocialized, or,
instead, striving for social connection in their economic relations. They skeptically
embrace all three accounts, offering a mix of normative prescriptions, socialized
opportunities, institutional arrangements, structural constraints, and networking
strategies... these control measures are undertaken by agents or trustees themselves,
many by government, some by principals collectively, and others by private
entrepreneurs; indeed, there are [even] markets for trust production. (1987: 635)

Vulnerable principals are driven, quite pragmatically, then, to embrace whatever devices will
prove to offer them protection, and they are not very worried about being parsimonious, or in
avoiding overlap between different devices. The devices are varied. They include structural
constraints in the form of supervision, governance, accountability, and liability, of agents; the
creation of a second tier of agents who are gatekeepers or watchmen over other agents; and risk
spreading and insurance-like devices.

The important thing to notice here is how thoroughly path-dependent this whole process is. The
emergence of a principal-agent division of labor resolves one problem, but creates one of its own,
to which contractual arrangements prove at least a partial solution. But contracts pose their own
problems, whose solution involve even more complex hierarchical relation, etc., etc. In the end,
what is implicated are virtually all the institutional forms that we associate with social, legal,
economic, and governmental order, in the West, especially all that is involved in the notion of an
impartial legal order governing property, contracts, and their enforcement. In effect, an initial turn
to an impersonal structure of principal/agent relations gets repeatedly reinforced; the problems
posed by agency relations are apparently to be resolved, not by a return to more personal
networks, but by more impersonal structures and relations.

46 The pivot point of Greif’s comparative analysis of Genoese and Maghribis trade is that the
individualistic ethic (culture) of the Genoese favors a more vertical or hierarchical social
structure, with a distinction between merchants (principals) and agents. Specifically, the
individualistic culture of the Genoese hindered their establishing networks of personal trust and
encouraged alternative, and more impersonal and hierarchical, forms of organization to take root
and flourish.
On Greif’s analysis, the division of labor between merchant and agent becomes a template for the emergence of a special class, a distinct group of agents who are not themselves merchants. In contrast, the more collectivist ethics of the Maghribis favors a horizontal social structure, in which merchants employ only other merchants. The formal principal-agent division of labor, in turn, dialectically generates conditions that favor an ascending set of more and more complex institutional innovations. Sections V, VI and VII of Greif’s paper contain an extraordinary set of observations about how, in a thoroughly path-dependent manner, the two cultural forms foster or support significantly different subsequent institutional developments.

In a series of masterful analyses, Greif proceeds to show that: (1) the equilibrium state for the Maghribis system is a horizontal structure with little differentiation in roles, in which merchants employ only other merchants, while in the case of the Genoese, the equilibrium is one in which significant role differentiation takes place, i.e., a vertical division of labor emerges in which there is a distinction between merchants (as principals) and those who serve as their agents; (2) the Maghribis employ the device of entering into contract on the strength of a handshake, while the Genoese develop an extensive system for the registration and enforcement of contracts; (3) collective action against rulers who violate the rights of traders are enforced informally, in the case of the Maghribis system, while the City rulers in Genoa are employed to make the threat of collective retaliation credible; (4) the Maghribis system does not encourage the use of bills of lading, while the Genoese system does; (5) the Maghribis system does not support the family firm concept while the Genoese system does, and with it a whole host of subsequent “innovations,” including shares available to non-family members, the emergence of tradable shares, stock markets, and the like.

Greif’s (1994: 943) final conclusion in this regard is cautiously put, but very important:

…it is intriguing that the Maghribis' societal organization resembles that of contemporary developing countries, whereas the Genoese societal organization resembles the developed West, suggesting that the individualistic system may have been more efficient in the long run. The analysis of this paper enables conjecturing about the possible long-run benefits of the individualistic system. To the extent that the division of labor is a necessary condition for long-run sustained economic growth, formal enforcement institutions that support anonymous exchange facilitate economic development. Individualistic cultural beliefs foster the development of such institutions and hence enable society to capture these efficiency gains...Historically, then, the Medieval Latin individualist society may have cultivated the seeds of the “Rise of the West.”

Obviously, of course, one can imagine that there is an inner commitment to a substantive code of conduct that is deeply hostile to market exchange. I mean only to suggest here that there would be a wide range of possible objects of inner commitment any one of which would be just as supportive of market exchange as any other.


This can be the case even when policy changes require a heightened majority (e.g., 2/3, ¾, etc.) Policies that fail the test of being mutually advantageous are an inevitable result of interest driven politics governed by any voting rule other than the rule of unanimity. Policies that are mutually disadvantageous to all are inevitable in so far as logrolling can take place. Starting with Buchanan and Tullock (1961) and continuing on in the public choice tradition which that book inspired, one can find ample model-theoretic evidence for the proposition that “self-imposed” laws (by democratic majorities) can be inimical, in particular, to economic growth. Indeed, the thrust of
that work has really been to make the case for what in the final analysis is close to a mixed--
substantive/procedural--approach, in which certain substantive principles (the “Bill of Rights”) 
are to be placed as much as possible beyond the scope of majoritarian decision-making.

51 When North (1994) remarks that while “economic growth can occur in the short run with 
autocratic regimes, long-run economic growth entails the development of the rule of law,” he 
moves a bit too quickly from the idea of the rule of law to that of a non-autocratic decision 
procedure.

52 The obvious model here is that of Papal authority in the Catholic Church.

53 It is argued, for example, that the highly successful economic order in Singapore is the result of 
decisions made by an essentially autocratic and technologically sophisticated bureaucratic elite, 
who is capable, when necessary, of pragmatically revising its own procedures.

54 It is an interesting point about much of the recent literature on this subject that it is preoccupied 
with the problem of interest groups seeking to capture governmental structures for the sake of 
improving their own position (at the expense of others). One needs to recall that the concept of 
rent seeking is much broader than this. See here, in particular, the work of Ullmann-Margalit 
(1977, Ch. IV), Knight (1992), and Hardin (1996).

55 [reference to the Chinese Emperor who autocratically worsened the whole course of 
technological development in China]

56 I have tried to explore such a revised theory of rationality in a series of works, including in 
addresses axiomatic and thus formal issues, but the other works cited seek to give an account of 
the theory in much more informal terms.

57 As North (1990: 14) puts the question, a central issue is “under what conditions can voluntary 
cooperation exist without the Hobbesian solution of the imposition of a coercive state to create 
cooperative solutions?”


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