Political Economy and Public Policy

Izvorni znanstveni članak
338.242
Primljeno: 19. travnja 2004.

Securing Trust on the Market

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Summary

The purpose of this paper is twofold: first, on the normative level, the author compares three main ways of securing trust on imperfectly competitive markets – informal social enforcement, formal-third party enforcement, and conditional internal commitment to the cultural norm of trust, in terms of the standard criteria of allocative and adaptive efficiency.

Admittedly, the three ways of securing trust in reality rarely exist separately and as ideal types, but the author separates them for the purpose of a normative analysis. The task of that analysis is to show that the system of conditional (upon the receipt of reciprocity) internal commitment to the cultural norm of trust is, on the normative level, the superior way of ensuring trust in terms of allocative efficiency in comparison with the other two ways (social enforcement, third-party enforcement). In terms of adaptive efficiency, the situation is more complicated as cultural belief systems change relatively slowly.

The second purpose of the paper is to give a point of departure for the conceptualization of the emergence and stabilization of the system of internal commitment to trust. In that context the author uses the recent empirical and theoretic findings of indirect evolutionary approach to rationality.

Key words: market, rationality, trust, distributive efficiency, adaptive efficiency

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Introduction

Adam Smith in his famous description of the perfectly competitive market describes self-interested individuals who, despite the fact that they are solely interested in maximizing their personal gains, create general economic growth. In Smith' description such market is led by an "invisible hand" that regulates the dynamics of the market. Individuals in Smith's market actually do not know each other and do not have any information about each other's economic status, past economic performance or trustworthiness. However, the market provides those individuals with the full information about the quality, quantity and, most importantly, prices of the goods exchanged. Such market also does not incur any kind of transaction costs that could slow down or totally prevent the process of exchange.

For individuals on Smith's market the notions of trust and trustworthiness are irrelevant because the market of purely private goods with unlimited supply and demand and full information about quantities and prices by definition functions with a perfect efficiency without any necessity for trust. Actually, in such market individuals are necessary only as rational actors who exchange goods and services, but neither can they influence the goods' and services' prices, nor can they affect the general dynamics of the market.

In this paper, however, I assume that the existence and enforcement of trust is a necessary, but not a sufficient, condition for the efficient functioning of market exchange on imperfectly competitive markets of private goods, where many daily transactions among individuals take place. A good example is a contractual relationship that regulates a sequential exchange of goods and services. My personal experience with an on-line auction site where I sent the money to the seller but have never received the merchandise (check Ebay.com website), is one of the examples where establishing institutions that can effectively enforce trust is important for the prevention of fraud on the electronic market. All those who have an extensive southern European experience in buying their groceries in small neighborhood shops (with a seductive smell of a fresh baked zucchini bread and sharp Italian cheese) and/or on farmers' markets, know how merchants establish personal relationships with their permanent customers at the expense of occasional visitors of their trading establishments, which can generate a rent-seeking behavior where permanent customers are privileged at the expense of occasional customers.

Apart from my good and bad experiences with imperfectly competitive markets, this paper has been inspired by the recent developments in game theory that are devoted to creating a new model of rational interaction that would complement and modify the standard model. According to the standard model, on imperfectly competitive markets and in collective dilemma situations, and in the absence of effective formal enforcement institutions, a rational individual would free ride (receive benefits without paying costs) whenever s/he can. However, there have been numerous and very consistent empirical results [E. Ostrom, 1992; 1998; 1999a) showing that the levels of cooperation in collective dilemma situations without formal external enforcement and under certain conditions (information about past actions (+), small group (+), face to face communication (+), cost of arriving to an agreement (-), symmetry of interests and resources (+), development of shared norms (+) and long time horizon (+), for example, see Ostrom 1998] are much higher than the traditional model of rationality predicts. This has provoked a number of scholars (for example, Ostrom 1998; 1999a; Boswell, 1998; Cardenas, 1999) to try to devise a new model of rationality that would be consistent with the empirical findings. Trust, trustworthiness and other-regarding behavior in general play important roles in those models.

The purpose of this paper is twofold: First, on the normative level, I intend to compare three main ways of securing trust on imperfectly competitive markets – informal social enforcement, formal-third party enforcement, and conditional internal commitment to the cultural norm of trust – in terms of the standard criteria of allocative and adaptive efficiency. Allocative efficiency measures how efficient a market is in distributing goods among market actors. Adaptive efficiency measures how efficient a market is in adapting to new trading conditions and opportunities. Admittedly, the three ways of securing trust in reality rarely exist separately and as ideal types, but I will separate them for the purpose of a normative analysis. The task of that analysis is to show that the system of conditional (upon the receipt of reciprocity) internal commitment to the cultural norm of trust is, on the normative level, the superior way of ensuring trust in terms of allocative efficiency in comparison with the other two ways (social enforcement, third-party enforcement). In terms of adaptive efficiency, the situation is more complicated as cultural belief systems change relatively slowly. However, I will show that the individualist belief systems (Greif, 1994) are generally very efficient in adapting to new market circumstances. I will also argue that in combination with internal commitment, both third party and social enforcement mechanisms can achieve significant adaptive efficiency gains. Second purpose of the paper is to give a point of departure for the conceptualization of the emergence and stabilization of the system of internal commitment to trust. In that context I will use the recent empirical and theoretic findings of indirect evolutionary approach to rationality.

The first order of business, however, is to define trust and markets as I use them in this paper. The definition of trust is the focus of the following section, while the definitional treatment of markets is the main topic of section 3. Sections 4 and 5 tackle the problems of relative allocative and adaptive efficiencies of the alternate ways of trust enforcement. Section 6 deals with the problem of trust conceptualization as an internal commitment in the context of indirect evolutionary approach.

Defining trust

The conceptualization of trust has received a considerable attention in social science literature (see Shapiro, 1987). Many of these definitions regard trust either as a property of individuals or as the emotional content, common understandings, or reciprocities of their interpersonal relationships (using trust more or less synonymously with the feelings of faith, confidence, expectation, reliance, security, etc). Seeing trust as a personal quality has its moral dimension of being trustworthy. For example, I expect I can trust a person because I have reliable information that the person is trustworthy, which is one of the person's moral qualities.

The definition of trustworthiness as a moral quality has its roots in moral and political philosophy. Thus in Plato's The *Republic*, for example, philosophers should be trusted to rule the state because they are the only ones who can understand and apply moral principles of justice without abusing such principles for their personal gains. In Kant's moral philosophy, in order to trust each other, people need to commit themselves to the moral categorical imperative according to which they should behave so that the maxim of their will can become the universal law. If, then, rational individuals commit to the categorical imperative, fraud and malfeasance would be logically impossible because none of rational actors would be interested in deceitful behavior becoming a universal law, as such law would also affect those who practice deceitful behavior (they themselves would be deceived). On the other hand, the lack of trust among individuals in the Hobbesian state of nature is the main reason why such individuals decide to create a social contract among themselves and transfer their personal rights and sovereignty to an authoritarian sovereign body.

One can also tease out another usage of trust from the literature where trust describes a kind of social organization. According to Shapiro (1987), "this conception has two elements: an idea of agency in which individuals or organizations act on behalf of others (known as principles), and one of risky investment of future contingency inherent in agency relationships" (p. 625). Trust here is a social relationship where agents for whatever reason invest resources, authority or responsibility in another to act on their behalf for some uncertain future return.

For the purpose of this paper I will define trust as the expectation that arises within a community of regular, honest behavior, based on commonly shared rules and/or norms, on the part of other members of the community (Fukuyama, 1995: 26). In that sense trust can be institutionally enforced as a rule by third-party formal institutions (I can trust a person because I know that the person has a formal, third-party imposed incentives to behave honestly). Additionally or alternatively, trust can be enforced as a norm, where the instruments of enforcement are informal social institutions (I can trust a person to behave honestly because the person is afraid of a large cost of social exclusion and loss of future benefits). Here I follow the definitions of rules and norms as used in Institutional Analysis and Development framework as it has been developed by scholars at Indiana University (see Crawford and Ostrom, 1995). Trust is a rule if it is based on shared prescriptions (must, must not or may) that are mutually understood and enforced in particular situations in a predictable way by agents responsible for monitoring conducts and for imposing sanctions (E. Ostrom, 1999b: 3). The Hobbsesian conception of solving the problem of the absence of trust in the state of nature by imposing an absolute sovereign is an example of trust as a rule. Trust can be seen as a norm if it is a shared prescription enforced through internally and externally imposed costs and inducements (E. Ostrom, 1999b: 3). Such costs and inducements, for example, can be connected with acquiring a good reputation for keeping promises, which is an incentive to perform actions with short-term costs, but long-term benefits (Kaohane, 1984; Milgrom/North/Weingast, 1990; Miller, 1992; Ostrom, 1998). As Fukuyama (1995) argues, using trust in the environment where others are trustworthy can also be an asset. Additionally, or alternatively, the establishment of trust among individuals can be a result of a personal commitment because some individuals have trust as an internalized system of beliefs that may come from their cultural tradition and/or ideology that have been part of their previous or present experience and training. (I can trust a person to behave honestly because I know that the person has made a conditional internal commitment to honest behavior). In that sense, such individuals may understand and/or have reliable information that their internal commitment is relatively the most efficient way of securing their economic gains. A more detailed analysis of the comparative efficiency of different ways of securing trust follows in the sections 4,5 and 6.

Trust as a rule and/or norm, can be conceptualized as having the characteristics of a public good. Public goods are goods that cannot be withheld from one individual without withholding them from all (the "nonexcludability criterion") and for which the marginal cost of an additional person consuming them, once they have been produced, is zero (the "nonrivalrous consumption" criterion). Thus, for example, once the trust has been imposed as the Hobbesian solution of an external enforcer, it is difficult for the enforcer to exclude those who for whatever reason disagree with the atmosphere of trust, without excluding everybody else. The exclusion of some for their personal gains is likely to produce the incentive for others to defect from the system of imposed trust, and thus the whole system would return to the state of nature. Moreover, once a system of trust is established, it is easy for new entrants to benefit from the system at little or no cost.

However, the main characteristics of public goods, non-excludability and non-rivalrousness, can produce a "collective action problem". According to the conventional wisdom about the collective action problem, individuals, in the absence of credible and efficient formal enforcement institutions, have strong incentive to free ride, i.e., to receive benefits provided by public goods without paying any costs. In the context of a contractual relationship, for example, the seller would have the incentive to benefit from trust as an established public good (receive money), but after receiving money and in the absence of effective formal enforcement mechanisms, the seller would have the incentive not to send the merchandise to the buyer. Thus trust as a public good on the market is, for example, an expectation by the buyer that s/he will receive merchandise after paying for it and/or that of the seller that s/he will receive compensation after sending the merchandise to the buyer. Such system of expectation is a public good because what an individual benefits from is compliance on the part of others, while his or her own compliance is typically a cost.

Defining markets

The favorite market model of neo-classical economics is the one of perfectly competitive market. Many economists like to describe perfectly competitive market in terms of the spot retail market for fruit and vegetables. James Buchanan for example, has one of such descriptions: "I do not know the fruit salesman personally; and I have no particular interests in his well-being. He reciprocates this attitude. I do not know, and I have no need to know whether he is in direst poverty, extremely wealthy, or somewhere in between ... Yet the two of us are able to transact exchanges efficiently because both parties agree on the property right relevant to them" (1974: 17).

The description above points to the important characteristics that define a perfectly competitive market. Firstly, the perfectly competitive market is a spot market, i.e., the exchange takes place simultaneously. Secondly, the market is anonymous in the sense that market actors do not know each other personally and are not interested in each other's well-being. Thirdly, the goods exchanged are purely private goods. Fourthly, although they do not have any information about each other, the market actors know the information about the prices, quantity and quality of the goods available. We can assume that the seller in Bucahanan's example exposed all the available goods and their prices to potential buyers, and all buyers and sellers know the prices of all the same, similar and different goods on the market. Fifthly, both the buyer and the seller do not make their decisions on whether to perform the transaction or not on the basis of the previous transactions with the same person (although they may have met a number of times in the past) nor do they base their transaction decisions on the likelihood of transacting with the same person in the future (there is no "shadow of the past" nor "shadow of the future"). Finally, there is a huge supply and matching demand of goods and services on the market and both buyers and sellers are relatively small and insignificant factors on the market in terms of determining prices of the available goods. All actors on the perfectly competitive market are price takers, i.e., the prices of the available goods depend on the market forces that are beyond buyers' and sellers' control, which also prevents price wars among suppliers.

Taking into account all the above characteristics of the perfectly competitive market, one can argue that the existence and the enforcement of trust is not a necessary condition for the effective functioning of the perfectly competitive market as transaction costs of enforcing the (tacit) contracts among participants are trivial or non-existent. However, the time gap between buying and selling, social relations among buyers and sellers, the lack of information about fair market prices and/or high costs of obtaining one, monopolies, closed networks of suppliers and buyers, cultural traditions are only some of the factors that increase transaction costs that negatively influence the smoothness and the overall efficiency of market exchange. These factors are external to the perfectly competitive market and are therefore called market externalities. Such externalities can also create opportunities for fraud, malfeasance and rent-seeking behavior. Thus it seems that the imperfectly competitive markets – the ones with externalities – can improve their efficiency by securing trust as a rule and/or norm.

The following section is a comparative analysis of the main approaches to trust building and enforcement in social sciences and political philosophy in terms of their allocative and adaptive efficiency.

Alternative ways of securing trust

(1) Informal networks of mutual compliance, based on friendship, family or kin relations, or cultural ties.

Compliance in these cases is secured by the threat of exclusion, and hence the loss of future benefits (Kandori, 1992) In the works of Ben-Porath (1987), Granovetter (1985), Coleman (1988; 1990) and Putnam (1993), networks of this sort are conceptualized as involving relations that are (a) personal, (b) horizontal or egalitarian, (c) group specific, (d) informal, and (e) not explicitly directed at facilitating economic exchange – so that the positive impact of economic exchange can typically be taken as an unintended bonus. In that context the concept of social capital gained a special prominence (Coleman, 1987). Social capital is a structure of social relationships that individuals can appropriate to assist them in their personal well-being.

(2) A formal set of legal rules and regulations, with third party enforcement involving special persons who have investigatory, adjudicatory and enforcement powers.

In this case, compliance with rules of honesty and non-malfeasance is secured by an external device – by arranging incentives to ensure as much as possible, that individuals have a self-interested reason for complying, despite the short term gains that they can realize by non-compliance. In this case, however, surveillance and sanctions are formally organized. This is the special kind of enforcement that economists tend to presuppose. As in the case of social enforcement, no special assumptions have to be made about what motivates people, but the impersonal nature of third-party enforcement fits well with the model of impersonal exchange that defines a perfectly competitive market.

(3) Some informal code of conduct, backed by an internal commitment to abide by that code.

On the usual way of thinking, this involves an "ideology" or cultural norm with which participants identify. This is the kind of enforcement that sociologists tend to presuppose. However, economist North (1990) has recently argued very convincingly that such norms should be incorporated into economic analysis of individual behavior on the market.

As a special case of (3), one can mention (3') relying upon the 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 to how they were enacted. Such an approach could be characterized as a commitment on the part of the participants to the rule of law. As one example, imagine a system in which an authoritarian leader establishes by proclamation the rules and laws that subsequently make for settled normative expectations on the part of participants, and also, from time to time, announces various changes in those rules and laws. If the members of the community accept this leader as an ultimate authority (for whatever reason), then the resulting social order may provide a matrix of trust within which economic transactions take place. Under the general heading of (3'), a special case of particular interests is (3") where persons are internally committed to a certain set of rules and/or laws because they were enacted as a result of consensual process in which each did or could have their own preference counted. This adds to the procedural approach the qualification that the rule of law is in some sense a self-imposed law.

The important point here is that the system of personal commitment in all three cases here (3, 3' and 3") is *conditional* and depends on whether trusting and trustworthy participants in the market exchange have a reliable information on whether other participants are also committed to trustworthiness, i.e., the trusting individuals need to know if the assurance problem has been solved (see E. Ostrom, 1999a). It would not be rational for an individual to comply with the norm of trust if at least a significant majority of others are not willing to do the same.

Given those alternatives, which one, or a combination thereof, turns out to be superior in terms of the standard criteria of allocative and adaptive efficacy? Recent model-theoretic work has yielded a number of important conclusions in that respect.

(1) *Enforcement costs*: Holding the size of the group of interacting persons constant, the enforcement costs associated with an informal network of mutual forbearance are less than those with a law-based, third-party enforced, system of trust (Calvert, 1995a; 1995b). The main idea here is that merely avoiding transactions with non-compliers is cheaper than having to select, train and maintain a cadre of persons specifically charged with enforcement responsibilities. Greif (1994), for example, in his comparative analysis of the Genoese and Maghribis trading arrangements in the Mediterranean in the eleventh century, presents a similar argument to this effect, showing that the clan-based organization of Maghribis traders is relatively efficient from the perspective of enforcement (as well as information) costs. He also presents an argument based on wage theory, according to which informal enforcement also results in a more efficient way of resolving certain agency problems. Regardless of the group size, however, a system of trust based on an internal commitment to an appropriate substantive or procedural code is the most efficient system from the perspective of enforcement costs simply because internal commitment involves no enforcement costs at all.

(2) *Information costs*: For a group of any fixed size, there are real information costs for both the social and third-party approaches. They each require monitoring of performance, even under the conditions of perfect compliance. In contrast, in a system of personal responsibility, information costs are minimal and essentially discretionary. As the size of the group increases, the information costs involved in the social enforcement of trust will increase at a faster rate than in the case of third-party enforcement (Calvert, 1995a; 1995b). Thus for groups of any substantial size there are real savings to be had by centralizing the monitoring system, and abandoning procedure where everyone corresponds with everyone else (see Milgrom, North and Weingast, 1990).

(3) *Effectiveness and limits 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 the external surveillance and enforcement will not be cost effective. Moreover, leaving enforcement and information costs aside, the reach of both social and third party methods is limited. On the typical way of thinking, those devices work best in the context of repeated bilateral interaction and where past histories of individual performances can be kept. In the context of multilateral interactions in which persons are able to act with relative anonymity, they are less effective (see Hardin, 1995). In contrast, there is no issue of cost-effectiveness for a system of internal commitment. In principle, moreover, there does not seem to be a rea-

son why a culturally-based belief structure might not ensure a high level of compliance in the mechanism of conditional personal commitment.

Model-theoretic results pertaining to adaptive efficiency

There is a considerable evidence that clan, kin and other types of networks can be effectively used to improve the prospects of a group of persons in a market place (Fukuyama, 1995). Examples range all the way from kin structured exchange activities of emigrant Chinese in Southeastern Asia, to buying cooperatives, to the informal networks of bureaucrats who managed to compensate for some of the inefficiencies of state socialism in Central and Eastern Europe. However, a wide range of model-theoretic findings suggests a number of cross-cutting considerations, particularly for the possibility of adaptive efficiency over the long haul.

(4) *Opportunity costs under conditions of expanding market possibilities.* Of particular importance once again is Greif's study. He argues that 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 "segregated" commercial society where efficient intereconomy agency relations are not established. That is, it was the Genoese, not Maghribis, culture that could efficiently respond to expanding trade opportunities. The argument here pivots around the idea that the extreme individualism of the Genoese traders led them to depend much more heavily on various forms of third-party enforcement, and that this positioned them to transact more efficiently with the strangers involved in the new trading opportunities.

(5) *The implications for rent-seeking*. Networks may function not simply to provide a climate of mutually advantageous trust, but also to enable those who are so connected to prosper at the expense of the larger community. By such means it is possible for networks of individuals to manipulate prices, and, more generally, secure benefits to their own members at a cost to other, non-members, that is, engage in rent-seeking activities. The allocative costs of such activity have been extensively discussed, but as the work of North (1990), Olson (1992) and Knight (1992) shows, the organization of persons into interest groups can effectively hinder adaptation that arguably work to the long-range benefit of all.

As Max Weber (1927) observed, capitalism involves the creation of a zone of impersonal interaction within which the pursuit of gain is "rationalized and rationally tempered". From Polany (1971) down to North (1990) and Portes (1993), the standard assumption has been that such rational tampering requires state intervention. But that involves coercive state, and all that it implies. As North succinctly puts it: Historically the growth of economies has occurred within the institutional framework of well-developed coercive policies. 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 (1990: 14).

The solution to one problem (malfeasance and fraud), then dialectically generates a new problem: governmental rent-seeking behavior and exploitation. North (1990: 14) is thus led to ask, "under what circumstances can voluntary cooperation exist without the Hobbesian solution of the imposition of coercive state to create cooperative solution?" The model-theoretic results I have been exploring here provide, I suggest, one of the possible answers: when participants are internally disposed to accept conditionally certain substantive or procedural constrains on their conduct. Such a cultural tradition can offer a possible supplement to the external social and third-party enforcement that could alleviate the problems posed both by social networks and third-party enforcement methods through reducing the costs of market transactions.

(6) *More general thoughts on conditions of adaptive efficiency.*

The considerations raised in the subsections (4) and (5) speak about the specific ways in which developmental processes associated with market exchange are subject to path dependency in ways that constrain adaptive efficiency. Networks can facilitate exchange, but in ways that can close out or discourage, the development of more impersonally organized market activity. The creation of third-person enforcement devices can lead dialectically to a whole new set of institutional problems, whose solution can again impact unfavorably on adaptive efficiency. However, the path-dependent nature of certain institutional developments can also work in a manner that favors adaptive efficiency.

Greif (1994) is once again instructive in that regard. He argues that the inability of the Genoese to establish networks of personal trust created the conditions under which alternative, more impersonal and hierarchical, forms of organization took root and flourished. But these alternative institutional forms of organization were, he suggests, important for the "Rise of the West". The central point of his analysis is that 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 Genoese, the equilibrium is one in which significant role differentiation takes place, i.e., vertical division of labor emerges where there is a distinction between merchants (as principals) and those who serve as their agents. This principal-agent division of labor dialectically generates, in turn, conditions that favor an ascending setoff of more and more complex institutional innovations (see also Shapiro, 1987). In particular, (a) the Maghribis employ the device of entering into contract with handshake, while the Genoese develop an extensive system for the registration and enforcement of contracts; (b) collective action against regional rulers who violate the rights of traders are enforced informally, in the case of Maghribis system, while the local rulers in Genoa are employed to make the threat of collective retaliation credible; (c) the Magribis system does not encourage the bills of lading, while the Genoese system does. The Genoese system leads to a whole series of subsequent innovations including shares available to non-family members, the emergence of tradable shares, stock markets and the like. Greif's final conclusion is cautiously put, but is 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'".

Inner commitment and adaptive efficiency

Given Greif's reflections on the path-dependent way in which the individualism of the Genoese leads to adaptively efficient institutional forms, what can one say, in a parallel fashion, about the applications of the adaptive efficiency of belief-systems that foster conditional commitment to rule? In the case of belief systems that support an inner commitment to a substantive code of conduct, there is an obvious problem. A widespread inner commitment of any sort constitutes what, for example, North (1990) characterizes as an informal institutional arrangement. As such, it is typically subject to a very gradual or incremental process of development and change. If commitment is to a substantive code of conduct, then, this poses a real barrier to adaptive process. Changes in economic conditions may mandate changes in the code. However, it is typically no easy matter to alter such code, or at least to alter it without undermining its authority. However, consider Max Weber's observation that a key factor for the emergence of capitalism is the creation of a zone of personal interaction within which the pursuit of gain is "rationalized and rationally tempered". This points to the possibility of a substantive code of conduct that is especially conducive to adaptive efficiency. His (contestable) argument regarding the role of protestant ethics also points to an aspect of the belief system that emerged in Western Europe that was favorable to economic transaction.

What about belief systems that support an inner commitment to a procedural norm? While such a commitment constitutes an informal institution, and thus is itself typically subject to incremental changes, it allows for more rapid alteration or adaptation than substantive codes. This does not ensure, however, that the procedural process of revision will result in market enhancing changes or even, for that matter, any sort of mutually beneficial exchange. Procedural alterations may, in a rent seeking fashion, serve some at the expense of others. This is especially a danger insofar as the procedural norm is framed in terms of the pronouncements of an autocratic ruler, since in that case there is no check on the ruler arranging things to his own, rather than to the subjects' advantage.

Does a commitment to the rule of law offer any advantages from the perspective of adaptive efficiency? That changes must pass the test of being accepted by a democratic majority, or even a super-majority, is once again hardly any guarantee that the changes made will be market enhancing. The whole of the public choice literature reminds us of how democratic majorities can work, not only against the public good, but also even against their best (especially long-term) interests. Policies that are crazy from an economic perspective can even satisfy constitutionally mandated requirements for a super-majority (as the ill-fated alcohol prohibition mandate in the United States made clear). Interestingly enough, it would seem that it is not *purely* democratic, but rather constitutional constraints on the exercise of power, governmental or public, that is crucial for creating conditions for economic growth. As North (1990) argues, what is needed is a complex system of checks and balances (which by definition have no place in either a system of autocracy or pure democracy). A parallel and important point can be found in Buchanan and Tullock (1962) who argue for a mixed substantive/procedural approach where certain substantive principles (the "Bill of Rights") are given constitutional status, and thus bind the decisions of executives, legislatures and courts alike.

Conceptualizing the emergence and stabilization of internal motivation

The findings summarized in sections 3,4 and 5 suggest that there are substantial advantages to be obtained in so far as individuals can make a *mutual* inner commitment to choose subject to the constraints of rules. It is important to see, however, that there are gains of this sort to be secured even if this approach is coupled with both social and/or formal enforcement devices. That is, there are gains to be secured even in cases if such an inner commitment governs only some activities and even if only governs the choices of some rather than all participants.

In this section I would like to address the problem of how to model the emergence and stabilization of the inner commitment. This is especially a problem when the appeal is to neo-classical economic models, since they assume that persons act so 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. Standard game theory models do not present such a problem, since while they do presuppose that individuals seek to maximize expected utilities or values, they presuppose nothing about what it is that people value. Thus it is open for us, as North (1990; 1994) suggests, to explore the implications of assuming that people value more than just monetary rewards (see for example, Margolis, 1985; Sugden, 1986; Sen, 1977; North, 1990; Bowles, 1998; E.Ostrom, 1998, 1999a; Cardenas, 1999). Suppose, however, that persons do have a strong inner commitment to abide by rules, so that mutual compliance turns out to be equilibrium state. Still, this assumption is only *ad hoc* and is not very convincing without any additional supporting arguments.

A more promising move is to appeal to some sort of cultural or genetic evolutionary models, which can address the question of how such "inner dispositions" might have evolved (see, for example, Frank, 1987; Pinker, 1994; Skyrms, 1996). The recent developments in evolutionary theory show that the survival of groups in early human history did not only depend on the aggressive search for individual returns, but also on the ability to effectively solve daily collective action problems. The groups who managed to solve such problems most effectively were most likely to survive. In that context, recognizing who is a trustworthy reciprocator and who is a plain cheater was of the essential importance (Alexander, 1987; Hirshleifer, 1997; Boyd/Richardson, 1985; Barkow/Cosmides/Toby, 1992; as reported in Ostrom, 1999a: 14) However, as Elinor Ostrom (1999a) rightly argues," A strict evolutionary approach is difficult to apply when trying to understand how individuals with a propensity to learn social norms, interact, adapt, and learn within shorter time frames. An evolutionary game-theoretical model of a collective action situation would, for example, treat all individuals as having inherited a particular type of strategy and unable to change their own strategy (p.16).

For that reason Ostrom argues for the application of an indirect evolutionary approach where players receive objective payoffs, but make decisions based on the transformation of those payoffs into intrinsic preferences. This means that players in social dilemma situations (and imperfectly competitive markets) take the material payoffs as inputs in their personal internal games where other inputs are variables that range from information about other players, values and norms, memory about the past interactions with the same or similar players, to possibly age and occupation.

Particularly interesting for my analysis here is Ostrom's report (1999a) on the results of the trust game played by two different types of individuals: trustworthy player and rational egoist. Here we can assume that the trustworthy type is chosen by nature and/or influenced by his or her cultural tradition, previous experience and training to make a conditional internal commitment to rules. Trust game is a sequential prisoners' dilemma game where individuals, for example, do not exchange goods on the spot market, but there is a time gap between the buyer sending seller money for a private good, and seller sending the merchandise to the buyer. Many contractual relationships, regardless of whether they try to regulate provision of private/ and or public goods, have the same structure.

Ostrom (1999a) reports that, according to numerous and consistent experimental results, the survival of the trustworthy player and the rational egoist primarily depends on the availability of information to each player about the other players' type (rational egoists or trustworthy person). The conducted experiments show that with complete information regarding types trustworthy type will receive more opportunities to perform and receive higher payoffs, while rational egoists will consistently receive lower payoff. In the environment of low information regarding types, the population of trustworthy types is bound to decline. On the other hand, if there is a noisy signal (Frank, 1987), about a player's type that is at least more accurate than random, the trustworthy type will survive as a substantial proportion of the population. Viewed as a cultural evolutionary process, new entrants to the population would be more likely to adopt the preference ordering of those who obtained the higher material payoffs in the immediate past. Viewed as a learning process, those who were less successful would tend to learn the values of those who have achieved higher material payoffs (Ostrom, 1999a: 18-19). It is important to note here that trustworthy types are ready to begin the interaction in a cooperative manner and are ready to reciprocate the other players' behavior (as their internal commitment to trust is conditional upon the trustworthy behavior of other players).

If according to the indirect evolutionary approach objective payoffs constitute only one of the inputs in the internal game that has preferences as its solutions, what other inputs do individuals bring into the game? Building on the works of Ostrom (1992, 1998, 1999a), McCabe and Smith (1998) and Bowsel (1998), Cardenas (1999) proposes a multilayer framework where individuals in various situations do not make their decisions exclusively on the basis of the expected payoffs, but take into account a number of other complex factors. According to Cardenas, people create their preferences on the basis of a complex, four layer framework: of (1) static game layer (net payoffs from each game), (2) dynamic game layer (experience, reciprocity, reputation), (3) preferences layer (values, wealth, occupation, trust, and (4) context group layer (shared norms, social distance, heterogeneity , group identity, etc). Cardenas also makes an important point that, according to his framework, individuals on the perfectly competitive market need to switch on only the first layer because the transaction costs of enforcing a contract on such market are trivial or non-existent. In the situations of imperfectly competitive markets (private and public goods included) individuals need to switch on the other layers, including the preference layer containing trust, in order to reduce transaction costs of their market transactions.

The empirical and theoretical findings of evolutionary theory and indirect evolutionary approach lead to at least the following important conclusions. First, it is possible to argue that human disposition to trustworthy behavior on imperfectly competitive market can be perceived as not totally and necessarily dependent on external payoffs, but is part of human nature and has been developed through the evolutionary process of learning where culture, family and past experience play important roles.

Second, the evolutionary models and empirical results based on them provide us with a point of departure for empirical thinking about the comparative allocative efficiency of the market with committed trustworthy types. In the cases of high availability of reliable information about the player's types, trustworthy behavior reaps higher payoffs than rationally egoistic behavior. The experimental results show (Ostrom, 1999a) that rational egoists are more likely to earn higher payoffs than trustworthy players in the high enforcement regimes, regardless of the availability of the information regarding players' types. Thus it is a matter of empirical research to lead us to answer the question under what conditions the enforcement costs necessary for the relative efficiency of the rational egoist markets are lower than the information costs necessary for the relative efficiency of the markets based on the trustworthy behavior and vice versa. A possible example are some international markets where both information and enforcement costs are high, but, especially in the view of the available communication technology, information costs seem to be lower than enforcement costs.

Third, the process of learning the norm of trustworthiness has the dimension of cultural evolution where new entrants to particular interacting groups learn and accept the norms of those players who receive higher payoffs. Forth, according to the model proposed by the indirect evolutionary approach, trustworthy persons are typically not slavishly committed to the rules and norms of trustworthiness. This takes us back to what I suggested above was one of the defining characteristics of inner commitment, that it is conditional commitment. If it is rational to be willing to accept constraints on one's maximizing behavior provided that others do the same, and we have reliable information about the others' behavior, then it is also not rational to accept such constraints when others are not willing to reciprocate or when we do not have reliable information about their possible behavior. What this means is that while within the model of personal commitment rational agents do not face the public goods problem (being rational does not mean "free riding" on the efforts of others) still these agents face an "assurance problem" that could be solved by low-cost information mechanisms that provide information about the types of the players (see Milgrom/North/Weingast, 1990; Ostrom, 1999a).

Need for a mixed approach

Given that, on a normative level, a case can be made, from the perspective of efficiency, for an internal commitment to compliance, as distinct from externally imposed commitment, would it be possible for a society to cease to rely altogether on such less efficient forms? It would seem not. Theoretical models that analyze human interactions tend to assume that individuals are more or less perfectly rational, i.e., that they will most likely try to maximize their utilities even in the cases where those utilities are defined as the feelings of satisfaction for behaving in an other-regarding manner. But in the real world, as numerous experimental results show, the compliance problem cannot be effectively addressed unless one has a way to deal with imperfectly rational persons as well. Even if one has a model of rationality that makes the case for internal commitment, one can expect that there will be persons who will not be moved by whatever arguments might be mounted from that perspective, but who may nonetheless be moved by the more traditional approach involving direct, external incentives (in the form of social and/or formal, third-party sanctions). The findings presented in this paper, however, point out to the importance of teaching and learning social norms of trust and reciprocity for efficient market exchange on imperfectly competitive markets (and collective dilemma situations), which can, in turn, help us "live longer and prosper".

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