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Analysis1
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Values and Institutions in Economic

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Introduction

The subject of values was once considered to lie beyond the purview of economic science. Preferences, taken as given to the agent and society, were seen as being about goods, dates of consumption, and states of the world, not about means (how to behave), or about beneficiaries other than the self. But as industrial civilization ends a turbulent century with rising anxiety over its social health and cohesion, the subject of values has begun seeping into economic discourse.

That neoclassical economics viewed values as an alien issue may have been natural given the positivistic spirit of its proponents. Robbins (1932) defined economics as a science of means-ends relationships, with the choice of ends (preferences) being of no account. And when Adam Smith's "Invisible Hand" revealed itself in the theory of general equilibrium, its manifestation was that of a vector of prices supporting an optimal allocation of resources, with preferences, technologies, endowments, and even the structure of property rights and institutions taken as givens. "De gustibus non disputandum est" and, a fortiori, "de moribus," since economics was becoming a science of prediction and testing, whereas value statements are inherently not amenable to falsification. Assuming behavior based on self-interest, exploring where that led using deductive reasoning and mathematics, and

testing the resulting conclusions using data on observable choices: these became the methodological Tao of the economics profession.

But as research in the neoclassical tradition expanded, it became clear that the economics of the mid-20th century had not really been as self-consistent as had been hoped. Assuming profit-maximizing firms and utility-maximizing households possessing full information on their environments, the standard theory could indeed show how a competitive economy would simply "run itself." But once the institutions of the economy were themselves to be explained, benign and "well-behaved" equilibria seemed far less assured. When, instead of firms one looked at individual possessors of skills, funds, and so forth, each maneuvering for their own advantages, then the emergence of entities having well-defined organizational objectives became anything but a certainty. When, instead of traders in the market-place exchanging homogeneous goods and money of costlessly verifiable quality, one looked at agents trading in the face of monitoring costs and asymmetric information, the presumption that the trader would faithfully fulfill his part in an agreed exchange could no longer be maintained. And when the very institution of property was considered not as a given but rather as an outcome of predatory struggles and of collective rule-

making, the view of economic life as a matter of producing and trading from given endowments took on a distinctly quaint appearance.

Taking self-interest to be as thoroughgoing as neoclassicism has heretofore presumed, and thus letting no institution be taken for granted but instead insisting that all be explained on grounds of self-interested action by rational individuals, raises the puzzle of how the Invisible Hand gets on with its work. Are people constantly looking for opportunities to steal from and cheat one another, and do they desist from such acts, where and when they do, only to avoid expected penalties exceeding expected gains, or in the expectation of gaining through repeated interactions? Beyond the realm of the narrowly economic, is such a representation of behavior equally true of participants in public life, of soldiers on the battlefield, of clergy at the pulpit, of child-care providers beside their tender charges, of academics purportedly seeking scientific truths? Or might self-interest, rather, be less thoroughgoing or universal, or be broader in nature, with some people identifying themselves with others, or feeling better off when acting according to values other than the maximization of their consumption and the avoidance of effort? And could the mix of interests, or the weights placed on selfish, altruistic, and moral considerations, not be determined in part by the environment facing the individual?

At one time, such questions seem to have led to an impasse. One could adopt the model of thoroughgoing economic man, but at the cost of ignoring realistic complexities in human behavior and psychology. Or one could call for a broader and, we think, more realistic economics, but at the seeming expense of formal rigor, and thus condemning one's work to the margins of the discipline's discourse. However, recent signs suggest that economists stand poised, today, to crack the nut of complex preferences. In models of the family and of savings behavior, assumed interdependencies of welfare have played increasingly important roles. In the theory of games and other branches of microeconomics, the idea that players or agents may be of particular "types" -- more or less rational or opportunistic, for example -- has gained a firm foothold, and the endogenous determination of these types has begun to be explored. As the process proceeds, economists, usually an imperialistic lot ever anxious to invade the territory of other disciplines, have shown more openness to using ideas from without. Evolutionary biology has provided the model of evolutionary game theory, psychology has introduced the concepts of norms and framing, and sociology has offered notions of reciprocity and reference group.

Because trade and competition boost prosperity and because universal honesty would reduce the cost of trade, it is easy to see why one might wish for a world in which people are motivated by self-interest in those choices where this proves collectively beneficial, but are internally deterred from acting self-interestedly in situations in which opportunism is collectively harmful. While real societies fall short of this ideal, at least some do so, arguably, by less wide a margin than economists sometimes presume. This raises the question: What determines where along the spectrum from "moral" optimum to moral worst case a given society comes to reside? And the further question: Are any of the relevant variables within the scope of human control?

In this essay, we argue that there is no scientific basis for the assumption that own well-being or command over resources is the exclusive and immutable concern of human individuals. The natural sciences, evolutionary biology in particular, and other social and behavioral sciences, especially evolutionary psychology, suggest that individual human beings may be genetically inclined towards concern not only with their own success in acquiring the resources necessary for thriving and reproducing, but also with the success of off-spring and other kin. They suggest, further, that we will be inclined, conditionally, towards cooperation with others, towards concern with how we are viewed by others, towards hostility to those who fail to reciprocate our

cooperation, and towards receptivity to moral reasoning that is consistent with these and other propensities. Like all genetic inheritances, such propensities do not directly dictate characteristics, but rather they are shaped into characteristics -- in this case, preferences--under the influences of the environment in which the genes achieve their expression, with cultural, social and economic factors being among the most important of these influences upon human behavioral predispositions or preferences. Real, evolved human beings are therefore capable of cooperation, of coordinated social behavior, and of responsiveness to concerns about process, but to degrees that differ depending upon the experiences, cues and incentives to which they are exposed. These last points, however, anticipate the approach to studying the genesis of values and their relationship to institutions that we will argue for later in this essay. Before developing that approach and our arguments for it at greater length, though, we first offer further motivation for the more general project of studying the relationship of values to institutions, which is the theme of this volume as a whole. This is done in Part I of our chapter, where we elaborate upon our reasons for believing that economists must understand values, and present views on how this might be done, drawing extensively on recent literature and on our perspectives as students of economic institutions and organization.² In Part II, we discuss conceptual and methodological issues concerning the endogenization of values in economic analysis. There, we develop our ideas concerning evolved receptivities to preference patterns, the influence upon these of environmental cues, and the simultaneous evolution of institutions and of preferences, including values. In Part III, we explore the endogenization of value formation and the values/institutions nexus by way of illustration. A brief conclusion follows.

I. Why Values Matter in Economics

Numerous lines of argument lead to the common conclusion that values matter for economics, and that the two-way interaction between economic arrangements and values merits serious attention. To motivate the rest of our essay and the study of the relationship between values and economic arrangements, more broadly, we sketch three such lines here. First, we argue that the stock of values helps determine the cost of operating the economy, and even what economic transactions take place. Second, we point out that value considerations are likely to be crucial to the solution of impasses in the theory of strategic interactions -- that is, of games. Third, we consider the evidence that contemporary society is suffering from a "crisis of values." As elaborated further in Part II, the individual may be viewed as being endowed with preferences that are usefully (although in some respects arbitrarily) grouped as self-regarding, other-regarding, and process-regarding. Self-regarding preferences concern the individual's own consumption and other outcomes, other-regarding preferences concern the consumption and outcomes of others, and process-regarding preferences concern the manner in which the individual in question and others behave, including the ways in which they attain outcomes of interest. We shall refer to process-regarding preferences mainly as values, but sometimes also as codes of behavior, mores, ethics, and by other terms, depending mostly on the context. We thus think of values as arguments of the utility function.³ And we shall maintain the standard distinction between preferences and behavior, distinguishing between values and ethics on the one hand and values-based and ethical behavior on the other hand, and emphasizing the point that behavior that might be judged as moral may stem from amoral or even immoral attitudes.

a. Values and Transactions

Almost every economist is familiar with Adam Smith's dictum that "[i]t is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest." A standard interpretation of this idea is that benevolence is simply too scarce a resource to serve as the foundation for a prosperous economy, whereas self-interestedness is in plentiful supply and nearly universal. A more subtle interpretation is that even if benevolence were widespread, it is not clear how the specialization and exchange that sustain prosperity could be supported by it, since there may be no effective mechanism to solve the information and coordination problems confronting a legion of altruistic citizens looking to engage in collectively beneficial activities, whereas such a mechanism is fortuitously found to arise -- in the form of the price system -- when individuals have regard for their private concerns. However widespread benevolence is, therefore, self-interest might be the sine qua non of a prosperous economy.

However, the argument appears capable of going only so far before confronting an important dilemma. While self-interest can lead butchers, brewers and bakers into mutually advantageous exchanges under idealized conditions of full information, once information becomes incomplete, it is less clear that unalloyed self-interest is what is required. In particular, producing and supplying other parties with goods of desired quality now becomes only one possible avenue to one's own well-being, competing with options such as theft of others' property, engaging in cost-reducing but concealable adulteration of the products one sells, failing to honor one's side of exchange agreements, and so forth. For given probabilities of success of each of the latter strategies, it may be the case that the more thoroughgoing the self-interest upon which economic agents act, or the less checked by considerations of "morality," the more likely they are to choose such actions over value-generating production and exchange. While the actions in question may be primarily redistributive in intent, they are typically value-reducing in consequence because (a) they attract effort away from productive activity, (b) they lead to monitoring, contract writing, theft-deterrence, enforcement and other costly activities, and (c) they reduce trading and increase otherwise inefficient self-provision activities that substitute for it.

The listed value-reducing actions might be thwarted, for example by threatening thieves with having their hands cut off, throwing contract defaulters into prison, or privately punishing product adulterators and defaulters by nonrenewal of trade. As just suggested, however, detection consumes resources, and each of these deterrents has its costs. Prisons use up real resources, chopped off hands represent lost productive potential, and there is the dilemma of statistical errors: to avoid punishing the falsely accused (letting the guilty go free), society must allow more actual perpetrators to get away (punish some who commit no crime). To operate the nonrenewal strategy, traders need to hold out the prospect of long-term interaction, which puts a check on mobility and the search for better trading matches. They may also have to offer one another "continuation rents," which means that markets will not clear (see Bowles and Gintis, 1993). The upshot is that the more thoroughgoing or less circumscribed the self-interestedness of trading partners, the more recourse must be had to costly deterrents and the more otherwise beneficial trades will be forgone, and thus the smaller will be the net gains from trade. All of this means that if society can somehow mold individuals who produce and trade honorably with the gusto of self-interest, but who refrain from theft and cheating out of adherence to a social code or norm, all might be better off. A mixture of self-interest and normative constraint, not self-interest alone, is what now appears to be required in order to achieve maximum Smithian prosperity.⁴ Norm-based behavior seems desirable not only in the market, but also in such contexts as group production settings, where cooperative behavior is often jointly beneficial to those engaged in team production. A large

literature now starts from the proposition that employers and employees have potentially opposed interests, since the employer wants to elicit maximum effort for minimum compensation, whereas the employee wishes exactly the opposite. With full information, their conflict can be resolved at the bargaining stage, with a handshake sealing an agreement that both parties know will be carried out (threatened penalties will follow noncompliance and thus need not be invoked). With imperfect information, however, the worker may attempt to minimize effort at the contract implementation stage, forcing the employer to undertake costly supervision, to offer job rents, and to implement threats of firing the occasional violator even when doing so is irrational, but for reputation effects. Groups of producers (for example, in a profit-sharing team or partnership) might similarly work together for mutual productivity and joint earnings gains, but self-interest could lead them towards collectively inferior outcomes, in which all shirk their duties as the privately rational solution of the prisoner's dilemma in which they find themselves. The capacity to refrain from opportunism once the employment handshake takes place, or to act cooperatively so long as others are seen as doing so, can be beneficial to all parties. While the literature discusses "forcing contracts" (e.g., Holmstrom 1982) and cooperation enforced by "trigger strategies" in repeated games (e.g., MacLeod 1987 and Putterman and Skillman 1992), where neither costly monitoring nor moral commitment are invoked, these approaches run into problems including those of moral hazard (see Eswaran and Kotwal 1984 and MacLeod 1987), multiplicity of equilibria and sensitivity to renegotiation, boundedness of rationality, and the need for trust (Schotter, this volume). A meaningful capacity to engage in mutually fruitful cooperation may thus in many cases depend upon the presence of an ability to adhere to norms which deviate from simpler forms of self-interest.

b. Values, Game Theory, and Experimental Economics

The need to incorporate values in economic analysis has become manifest in an area of economics that has been dominated by the homo economicus model in its purest form, game theory. Predictions of game-theoretic models predicated on players behaving in strictly self-interested and rational ways do not conform well with many observers' intuitions about how interactions among players are concluded in the real world, and with findings of experiments. In recent years, an increasing number of attempts have been made to reconcile theoretical predictions with empirical findings and observation, primarily by modifying the concept of the rationality of the individual. This has amounted to placing various bounds on how individuals reason about their opponents' moves, how many future potential moves they can anticipate, how much information they have at their disposal, how they process information, how they learn from past experiences, or how they deal with uncertainty. Work on bounded rationality has helped to provide a more realistic understanding of human behavior without discarding the essential and very useful framework supplied by game theory.⁵ However, tweaking with rationality alone has proven insufficient; some consideration of the rules of the game and the institutions that give rise to them, and of motivations of players beyond self-interest, has also been found necessary. Working partly under the influence of psychologists like Kahneman and his colleagues (e.g., Kahneman et al., 1986), game theorists have sought to incorporate into their models also concepts such as the sense of fairness individuals bring to bear on their interactions (see, for example, Rabin 1993). The rules of the game -- when are players allowed to move, what moves are permissible, for how long a game is played, and so on -- are found to have great impact on the outcome of games. Many equilibria are quite sensitive to the specification of these rules, and therefore a quest to understand them (rather than just assume them) has taken game theorists to the analysis of the formation of institutions.

Some of the key issues can be illustrated with the ultimatum game, which represents one of the simplest games of interaction, however minimal, between individuals. (We return to this game in more detail in Part II). One player, designated as the proposer, is given the opportunity to propose a division of a certain sum (a gift) between herself and another player, designated as the responder. If the latter accepts the proposal, the division is carried out; if he rejects it, neither player receives anything. This game has a unique equilibrium in which rational, self-interested proposers who have no concern for the other player and have no regard for fairness as commonly understood or for other values offer a token sum to respondents with similar attributes, who accept the proposal (from which they have something, even if little, to gain) rather than reject it, in which case they gain nothing.

But this outcome almost never materializes in experiments, for token proposals are rarely made, and are even more rarely accepted. A sizable literature in game theory and experimental economics has emerged to try to make sense of these findings. The upshot of this literature (summarized by Camerer and Thaler 1995) is that a great many proposers and respondents seem not to understand what is going on in the game (or proposers think that of respondents), that players care about each other, don't want to feel or be regarded as "dupes" who accept low proposals, or that they just play by certain rules such as 'fairness,' regardless of the opportunities afforded by the specific game. Since there is no question that some players do not quite understand the setup of the ultimatum game, simple as it is, the question is whether there are other important factors that also affect the outcome. There is ample evidence that factors other than bounded rationality do affect outcomes. For example, subjects' gender, familiarity with each other, cultural, and educational background have clear effects on proposals and responses (Eckel and Grossman, 1994, Hoffman et al., 1996, Roth et al., 1991, and Frank et al., 1993).⁶ Although some of these factors are likely correlated with the nature and degree of bounded rationality, it is extremely unlikely that they are not strongly related to how much players care about each other, how they think of themselves and each other, and what they regard as acceptable or desirable behavior in the circumstances that arise in these games. In other words, the extant evidence strongly suggests that behavior in ultimatum game experiments is affected by other- and process-regarding preferences, in addition to self-regarding preferences.

Critics of one-shot-game experiments (such as the ultimatum game) claim that such experiments can never test what they purport to test: how a proposer would make her offers knowing that the respondent has no way to punish a stingy offer or reward a generous one. The reason is that a one-time experiment is in fact part of a long string of encounters with others, albeit with different individuals over time. Individuals cannot extract themselves from their experience of continuous human interactions in order to hide in the fold of time provided by the experiment. In truth, critics say, proposers and respondents act rationally and self-interestedly in the repeated game of life (see, for example, Aumann 1990).

Although this argument is offered by defenders of the homo economicus model against attribution of non-self-interested motivation to players in one-shot ultimatum games, it is clearly inconsistent with the most demanding concepts of rationality. One might go further and suggest that it is also unconvincing as a refutation of the view that individuals have preferences beyond self-interest. Why would a minimally-rational individual A think that B will reciprocate A's behavior in a relationship with C, who is unknown to B? The answer may be that A and B have developed standards of behavior that suit repeated interactions with the same individuals, but that they carry these standards over to one-time encounters with perfect strangers.⁷ The carried-over standards and associated behaviors might be usefully described as reflecting

concern for how individuals should interact (process-regarding preferences) or concern for others (other-regarding preferences). The game-theoretic literature focuses on the adoption of standards of behavior or strategies (and rarely, explicitly on preferences), and suggests that their emergence depends on the institutions available in a society. These institutions include anything and everything that helps individuals learn about what others do, from customs, norms, and laws, to common frames of reference and focal points. Strategies are embedded in routines, codes of conduct, rules of thumb, social instincts and proclivities, and so on. Many game theorists have adapted the evolutionary framework (especially models originating with biologist John Maynard Smith, 1982). In biology, genes are viewed as the carriers of strategies, and they are transmitted to offspring; success is measured in the number of the offspring carrying particular genes. In evolutionary game-theoretic models, genetic reproduction is usually replaced by imitation and enculturation.⁸ But in nearly all models preferences matter, either through a selection process that affects the mix of individuals with fixed but different preferences, or through an adaptation of preferences that are determined endogenously in the process of maximizing fitness (reproductive success).⁹ All of this means that it is difficult, in the theoretical and experimental study of games, to avoid the invocation of some notion of concern for others, values, and/or norms. Put it differently, it takes extraordinary intellectual contortions to construct explanations of observed real-life or experimentally-induced phenomena that are based on a value-free homo economicus; these explanations strain credulity. This seems to have led some game theorists, such as Binmore and Samuelson (1994), to reject the model of homo ludens (game theory's version of homo economicus who has only self-regarding preferences) as often absurdly unrealistic, in favor of a homo sociologicus who behaves as though he were optimizing, or stated differently, in favor of homo economicus who, when optimizing, behaves as though he were employing a social norm. One difficulty with incorporating bounded rationality and values in economic models has been the excessive degrees of freedom these concepts allow the modeler, since it is possible to obtain virtually any result by invoking suitable definitions of these concepts. With so much fluidity and little ability to restrict its range, this route to explaining behavior is understandably regarded as dangerously ad hoc. But carefully-designed experiments coupled with original theorizing are increasingly helping to distinguish among bounded rationality, values, and other preferences, and to define their meaning. We present some thoughts about how economics might (when necessary) take leave of homo economicus without plunging into chaos, in Part II, below.

c. The Contemporary Context: Does Society Face an Ethical Crisis?

The nineteenth century had seen numerous social movements and philosophies arise to contend against the inequalities, inhumanities, and socially atomizing tendencies of industrial capitalism. The twentieth century in its turn became the stage for an immense experiment in nonmarket economics, and for a global contest between the states embracing and those opposing that experiment. With the collapse of Soviet-style socialism at the end of the 1980s, that contest had more or less run its course. The system whose defenders proclaimed it better adapted to "human nature as we know it,"¹⁰ the system that took self-interest as given and permitted it an extensive sphere of action, the system that as well had evinced relative hospitality towards political democracy and individual freedoms, emerged victorious, with leading public, civic, and intellectual figures throughout the world concurring in the belief that desired prosperity and liberty can best be achieved through its institutions of free exchange and private property.

Yet, even as this victory and strengthened ideological consensus around

liberalism were being celebrated, the viability of the prevailing order was coming increasingly into question, for the internal discontents of industrial market societies appeared to loom as large as ever. Typical listings of these problems have included high levels of crime and violence, family instability, racial tensions and xenophobia, seemingly intractable poverty and unemployment, self-destructive behaviors including substance abuse and suicide, social unconnectedness and depression, and widespread alienation among the young. While it goes beyond the scope of this essay to assess whether such problems are in some global sense more severe today than was the case fifty or one hundred years ago, the alarm on these issues that has spread from one end to the other of the contemporary political spectrum, and their constant discussion in news and opinion media as well as by politicians of all stripes, is sufficient to suggest to us that the concerns involved have real bases.¹¹ When we look at the state of the family as an institution, for instance, several contemporary phenomena that arguably bear important relations to either the inculcation or the playing out of values come particularly clearly to the fore. First, statistics show degrees of fragility of marriages and numbers of births to unmarried mothers that have no recent precedent.¹² Second, there has been a large increase, of late, in the number of households composed of single parents with children.¹³ Third, there has been a rapid movement of women out of full-time household roles and into the external labor force, and a corresponding movement of young children to daycare outside family settings. Fourth, these changes have been accompanied by changes in income patterns, including the relative impoverishment of both divorced and unmarried women with children, and by changes in the time that parents have available to spend with their children (Schor, 1991).

While on the one side, many would hold that some of these trends, such as declining marital stability, reflect at least in part changes in widely-held values, on the other side many fear that the combined effect of these trends will be to undermine families' effectiveness as inculcators of positive values, thus contributing to a decline in society's moral capital stock. Some, indeed, have sought to link some of these changes to changes in behavior; for example, the propensity to violence and other forms of social and economic distress such as crime, drug abuse, and poverty seems to be greater in children of poor, unwed parents.¹⁴ Those who see signs of more generalized decay in the moral underpinnings of society are hardly forced to direct their gaze at families only. Behavior in the company boardroom, in political life, in advertising, and in other spheres of life, show signs of operating with lessened reference to moral values, they may claim. A recent Boston Globe column, for instance, lamented the fact that a local businessman who responded to the humanitarian needs of his employees and their families and who promised to rebuild his factory after a devastating fire rather than move from the region to one with lower labor costs, had been treated as a hero in the local and national presses. While the individual in question was certainly deserving of praise, the author argued, his actions were precisely those that most business owners would have claimed to be normal only a generation ago.¹⁵ Amoral businesses and the profit motive stand accused today -- even by traditional defenders of free enterprise -- of everything from buying their way to favorable government legislation (including measures that compromise the environment and consumer or worker health and safety), to polluting the minds of children with glamorous depictions of violence and dehumanized depictions of sex in television, films, pop music lyrics, and electronic games.¹⁶ Yet Easterlin and Crimmins find that in recent decades "support grew for capitalist institutions such as profit making and advertising (1991, p. 499)." Moreover, those authors find a broad range of value changes suggesting that the market ethos has continued to make inroads in the culture of the day. Thus, during the same period, the authors assert, "[j]obs offering money and status became more preferred relative to those with

opportunities for self-fulfillment or public service." A drop in the importance attached to "developing a meaningful philosophy of life" and "helping others" and a corresponding rise in the desire to "become well off financially," are also found by those authors in comparisons of responses to surveys conducted between the late 1960s and the early 1990s.¹⁷ The moral values of the young are argued to have changed for the worse in a number of studies. Bovasso et al. (1991) attempt to track the moral judgments made by college students from 1929 to 1988, in four categories: misrepresentation, violation of religious norms, selfishness, and crime. Although many of the changes are small, self-reported tolerance of misrepresentation, crime, and selfish behaviors (such as habitually failing to keep promises and not giving to charity when able to) has increased since 1958. "The college youth of the 1980s have retained the hedonistic orientation of the 1960s" they conclude, "but the severity of their judgment of selfishness and misrepresentation for financial gain has decreased since the 1960s" (1991, pp. 476-7). Cheating in schools and dishonesty in other settings may likewise be on the rise. In a survey administered to over 1,000 U.S. high school students in 1969, 34% of respondents reported having used a "cheat sheet;" in 1989 the figure was double that; in 1969, 34% agreed that "sometimes it is necessary to be dishonest," whereas 67% did so in 1989; the percent of students who said they would turn in a \$20 bill they found at school dropped from 81% to 32%, and the percent answering "yes" to the question "Are most people in the U.S.A. today honest?" fell from 49% to 24% (Schab, 1991). Interestingly, "over 80% were convinced that the poor were more honest than the rich" (op. cit., p. 841).

Some value changes may have long-term and others shorter-term causes.

Some of these causes may be narrowly economic in nature, others less so;¹⁸ some may be lasting, others cyclical;¹⁹ and some negative value changes may be associated with additional but desirable changes. Be that as it may, at least some of the problems that we have enumerated are real ones, and any headway that social science may make in addressing them would be widely welcomed. With economic forces playing such a large part in explaining such decisions as those regarding marriage, divorce, childbearing, and the undertaking of criminal acts, it follows that our discipline might be expected to contribute to improving understanding of these phenomena and to helping devise corrective policies. Unfortunately, economists have made little progress in analyzing these and other pressing issues of our times -- a fact that Henry Aaron (1994) has recently attributed precisely to the exclusion of values from economic analysis. We concur with Aaron's assessment, and hope that by breaking old disciplinary taboos and marrying the rational-choice perspective of economics with analysis of the formation and mutation of values, the papers collected in this volume will help to overcome that deficiency.²⁰

II. Some Theory

a. Preferences The standard depiction of human motivation and behavior in economic theory is parsimonious. Homo economicus cares about his own wellbeing; sometimes modelers allow him to care about the welfare of others, too, but this is often regarded as a way to address "minor" phenomena (such as voluntary donations), and is also viewed by many as a regrettable departure from the desired goal of explaining behavior on the basis of pure self-interest. Homo economicus refrains from actions that most people regard as morally reprehensible only if her valuable reputation would be damaged, or if the expected punishments inflicted on her would outweigh her expected gains. Homo economicus has no moral compunction, does not engage in actions just because some abstract social norms require so, nor does she have feelings of guilt (e.g., for violating a norm), pride (e.g., from being praised), or self-esteem (e.g., for having overcome a temptation to cheat and having acted honestly instead). In short, homo economicus is not someone with whom most people would

like to be compared.²¹As we mentioned earlier, the "resort" to other- and process-regarding preferences has been viewed quite negatively by some economists, who consider the essence of their trade to be explaining as much as possible of human behavior from the starting point of "rational economic man." That the homo economicus paradigm is indeed a powerful one is easily illustrated by some simple analytics of "morality." For instance, "moral behavior" is insightfully viewed as a public good that it would benefit all to see upheld, but that the individual may find profitable to forego when the private gain of a single "immoral" act exceeds the actor's share of the resulting social costs ("breakdown of morality"). Such reasoning yields the useful prediction that, ceteris paribus, it will be easier to obtain adherence to a moral code in a small group, in which each individual's share of the costs is significant, than in a large one, in which it is negligible. It suggests, too, that "moral" dealings are more likely between pairs of individuals who know one another's identity and expect to interact repeatedly. It permits linking "moral behavior" to the severity and probability of sanctions. And it suggests why belief in an omnipotent and omniscient God who may deal out infinite punishment with perhaps small but unknown probability may act to deter much "immorality," and why declining belief either in the existence or in the sternness of such a being may lead to a decline in the average level of "moral" behavior.²²However, important elements remain absent from such an account, as well, even if we leave aside the questions of the rationality of such beliefs, and of how moral codes come about. Few mothers seem to require either the fear of God or social sanctions to devote caring attention to their children. People make the effort to vote in elections despite negligible tangible benefit. And the fact that families, schools, and opinion leaders devote resources to inculcating normative beliefs, suggests that most people believe that human beings can be made to act according to certain norms even when they are not afraid of external penalties and hoping for extrinsic rewards. Indeed, the large investments we make in socialization suggest that either (a) this belief in normative receptivity has some basis, or (b) the belief that human beings are fairly rational has none. Neglecting the way in which process- and other-regarding norms change not only with the size of relevant groups and the probability of repeated interactions, but also with changes in the prevalence and efficacy of socializing agents and institutions, would leave some of the most important sources of value transmission unaccounted for.

In this section we seek to describe preferences and behavior in a way that not only allows individuals to recognize themselves but, more importantly, holds promise of allowing us to integrate the interactions between values and institutions into our analysis. We do so while staying close to the otherwise fruitful and rigor-imposing tenets of economic methodology. Our object is to characterize individual preferences and behavior richly enough to conform with common-sense observations and with the findings of social-scientific research (including psychology and the social research of biologists), and parsimoniously enough to be useful for systematic inquiry into the ways in which institutions and organizations affect the behavior of individuals through altering their preferences.

As is standard in economics, we think of the individual as being endowed with preferences regarding her own consumption and other outcomes. While a great deal can be explained by such (self-regarding) preferences, and we have no intention of denying their centrality, we think further progress is made possible by acknowledging that the individual may also have preferences with respect to both the consumption and outcomes of others (other-regarding preferences), and the process through which these outcomes are attained (process-regarding preferences). But to begin tracing the steps we think necessary for going beyond approaches conventional in the past, it seems helpful

initially to elaborate on relevant "nonstandard" preferences in something like the following manner.

Self-regarding preferences are the essence of homo economicus.²³ Other-regarding preferences reflect concern either for the overall wellbeing, or for certain of the activities or outcomes, of other individuals. They come in both altruistic or benevolent and in envious or malevolent varieties. The individual who is other-regarding or altruistic to the degree that she derives equal satisfaction from the wellbeing of each and all of her fellows as she does from her own private welfare is improbable; the individual who, conversely, enjoys equally the pains of all others, is pathological. Most individuals care about themselves, and then to varying -- but lesser, and perhaps declining -- degrees they care about some outcomes that affect their relatives, friends, co-workers, neighbors, countrymen, and so on.

Individuals care about the manner in which they themselves and others behave, including the ways in which they attain outcomes of interest.²⁴ These are process-regarding preferences (which we use, a bit loosely, interchangeably with values, ethics, codes of behavior, and similar terms). Uncommon is the individual who is strictly indifferent about whether he has achieved his income through honest work or blind luck, whether he cheated others or treated them fairly, whether his gain was achieved by helping or by harming others.

Likewise, individuals care about how others comport themselves.²⁵ As in the case of outcome-regarding preferences, process-regarding preferences vary in intensity across individuals and, for given individuals, across processes.

Values and codes of behavior that guide actions are internalized to varying degrees by different people. One individual may rank types of behavior in terms of their acceptability to him: never murder, cause bodily harm only in extreme cases, cheat only in certain situations, lie only if the gain is very large, withhold useful effort whenever a minimal threshold of benefit is attained, etc. Another individual's rankings or intensities may be quite different. And process-norms and their relative intensities can also vary across groups.

Like the category of other-regarding preferences, that of process-regarding preferences (or values) is an inclusive one that is not restricted to values of which moral authorities might approve. For instance, the desire to act according to the codes of conduct of a juvenile or criminal gang also fits comfortably within the rubric of process-regarding preferences, although it may not meet various standards of pro-sociality or virtue.

Adherence to the process-constraints inherent in the norms of behavior of some families, communities, or ethnic groups may entail discrimination or even violence against outsiders, as noted by Bowles and Gintis (this volume). Some values may be dysfunctional for economic performance, as argued by Kuran and Montias (this volume). And there is much room for disagreement about which values are good or bad. The upshot of all this is that while many references to values in our essay are implicitly about ones widely approved of, it is not analytically necessary to restrict the concept of process-regarding preferences to that sub-class only.

Our distinction between other-regarding preferences and process-regarding preferences is comparable with the distinction between altruism and manners suggested by Camerer and Thaler (1995); see also McCloskey (1994). These ideas may be formalized also by seemingly retaining an objective function defined solely over personal outcomes, introducing concern for others and for process as constraints. This is the formalization suggested by Rabin (1995), who shows that the two alternative formulations are not entirely equivalent (see also Kuran, this volume). Another approach, attributable to Sen (1987), is to permit individuals to have possibly normative metapreferences over their potential preference functions, with an ability to distinguish between those preferences they might act on selfishly, and those which they would morally prefer themselves to have.²⁶ Still other formulations allow for both the other- and

process-regarding preferences suggested here, but make no distinction between them. Finally, a concern for the process is often identified with a desire to meet the expectations of others, or to be regarded well by them. Thus, Sugden (this volume) suggests that individuals' desires to act in accord with other people's expectations can be "treated as an additional motivating factor, not included in the payoffs." Likewise, Fershtman and Weiss (this volume) model behavior as being motivated by concern for social status -- how other people regard one's behavior -- in addition to self-interest.

b. Preferences and Behavior

Economists distinguish between preferences and behavior. A given set of preferences may lead to different behaviors in the face of different constraints; different sets of preferences may lead to the same behaviors under different constraints. The distinction between preferences and behavior is equally useful in the context of values and other-regarding preferences and the behaviors induced by them. For example, an honest person resists the temptation to steal because of her beliefs in right and wrong.²⁷ An individual holding no such value may well behave honestly (refrain from stealing or even more minor infractions) for totally self-regarding reasons.²⁸ And many people may be weakly honest in the sense that they prefer to be honest, but choose not to be when the cost is high enough. Such sensitivity of process-regarding behavior to relative prices means that the framework proposed here is amenable to the same kind of analysis as is the familiar neoclassical framework; for example, if process-regarding preferences reflect adherence to a norm, then such adherence can be analyzed in much the same manner as purchase of a tangible good (see Rabin, 1995, and Kuran, this volume).

But the influence of preferences on behavior should not be underestimated. An honest mechanic will not perform unnecessary work or charge for fictitious repairs. A conscientious worker will not shirk if he thinks he is treated well. A trustworthy manager will not break a promise made to an employee or superior. A reliable business partner is good for his word. As we shall argue later, the strength and distribution of preferences in society is neither uniform nor fixed, and many such reputational differences may reflect no more than the long-term outlooks of selfish persons in situations where it makes sense to invest in them. Nonetheless, the burden of our argument is that behavior can in fact be affected by affecting preferences, in addition to standard variables more conventionally considered in economic analysis. Along with preferences, it is important to consider cognitive abilities and habits, and in particular the ways and degrees in which rationality is bounded, as determinants of behavior. People vary in their ability to calculate the course of action that is best considering their preferences and constraints. They also vary in their inclinations to expend mental energy or time on calculations. While the inclination to calculate is readily conceived of as a process-regarding preference, the ability to do so is an endowment that determines how well one can pursue her preferences. But since practice may improve proficiency, calculativeness (the preference) may also engender over time sharper calculating abilities. This is an example of the manifold interactions between cognitive abilities and preferences.

To see how both preferences of all types and cognitive characteristics determine an individual's behavior under a given set of economic constraints, consider again the example of the ultimatum game. There are x dollars to be divided between A and B. A makes a proposal for a division; if B accepts the proposal, it is implemented, but if B rejects it, the x dollars are withdrawn and neither gets anything. A fully rational and self-interested individual A who knows with certainty that B is equally rational and self-interested will propose a division that gives next to nothing to B, knowing that it will be accepted. The same proposer will make a more generous offer if she believes

that B is either boundedly rational in the sense that he does not understand that he cannot affect the division in his favor by refusing a very small offer in a one-shot game, or if she believes that B subscribes to an inviolable concept of fairness that would lead him to reject an offer of less than a certain amount or percentage. Thus A may make more or less generous offers, depending on her assumptions about B's cognitive abilities, ethical positions, and other-regarding preferences.

The proposer's own preferences and abilities will likewise affect the offers she makes (but, unlike in the reverse case, not the likelihood of their acceptance in a one-shot game). A somewhat other-regarding proposer may offer, for example, a 60-40 division, taking advantage of her position as first mover, but not exhausting that advantage (assuming she believes she could do so) because of her concern for B. Alternatively, with little or no other-regarding feelings, A could still adhere to a process-oriented notion of fairness that holds, for example, that all rewards should be meted out according to contribution only, with windfalls being distributed equally to those involved in the event; she would therefore propose a 50-50 allocation.²⁹ Many other possibilities, based on combinations of different types and degrees of the three categories of preferences as well as the nature and degree of bounded rationality, can be constructed (and matched with outcomes of the kind that have been found in experiments with the ultimatum game). Thus what many may consider as ethical behavior -- sharing a windfall with one's fellow -- may stem from the sharer's (proposer's) ethical attitude indeed, but may also be the consequence of the other person's (responder's) ethical attitude, or the result of the expectation that third-party observers of the interaction may approve of sharing;³⁰ bounded rationality (as noted above), altruism, and the proposer's attitude towards the risk that the respondent may be refusal-prone, will affect her proposals, too. Finally, the absolute size of the windfall may affect the offers made and accepted, as may its size relative to the wealth of the individuals concerned (a wealthier individual can act more easily on her ethical concerns than a poorer one).³¹ The example of the ultimatum game suggests a number of general (not necessarily new) lessons for economic theorists. First, the behavior of individuals can be affected by their own other- and process-regarding preferences. Second, the perceived or imputed preferences of other actors may matter just as much to the behavior of an individual as his own preferences so that, in a static framework with stable preferences, it is sufficient that only part of the population be guided by moral considerations for the rest of the population to find it utility-maximizing to act in a manner that resembles moral behavior.³² Third, while the foregoing raises the possibility of saving homo economicus by attributing virtuous or caring (or for that matter, vicious or callous) behavior only to a few exogenous others,³³ such an approach remains timid and incomplete. If, as we argue below, the inculcation of other- and process-regarding preferences is to a considerable degree a result of rational calculations, and if the maintenance of such preferences depends upon interactions with others in predictable ways, then we can go much further by embracing and endogenizing such preferences within a broader economic calculus, rather than merely acknowledging them as unexplained oddities. Indeed, the framework of stable preferences is clearly unsatisfactory, for many an individual who holds fairness or other-regarding preferences dear will not continue to sustain them if she gathers sufficient evidence that they are violated or not reciprocated by others. Hence the need to consider the evolution of preferences in situations in which individuals accumulate experience with both the behavior of others, and the preferences which they impute to them.³⁴ Economists who have accepted the need for an "extended" model of preferences³⁵ have moved cautiously. Attempting to begin from familiar ground, some have attacked questions of altruism and conscience by asking whether "economic man," whose real concerns are with maximizing a

conventional function of wealth and leisure, might choose to have an altruistic or moral utility function, or to work to endow his offspring with one, because this would lead to better outcomes in terms of that narrower set of preferences.³⁶ Such an approach yields interesting results, showing that broadened utility functions might indeed be rationally chosen on the basis of narrow ones; but it also has some drawbacks. It is unclear, for instance, which set of preferences are the real preferences of the agent: are they those with which the preferences governing behavior are selected, or the latter preferences themselves? If the players of a game that looks like a prisoner's dilemma to homo economicus have willed themselves into finding cheating others distasteful only because such an attitude is useful to themselves as economic men and women, how can we be sure that the real tastes governing their choice of attitude won't reassert themselves once the playing is underway? We believe, however, that there is a more important reason for making a cleaner departure from the neoclassical homo economicus model. It is that once we permit plasticity of the utility function, there is no satisfactory theoretical rationale for proceeding from a presumption of individual self-interest and nothing more. On the contrary, that body of extant scientific theory which does offer a real foundation for a scientific theory of preferences -- the theory of natural selection which we discuss below -- suggests that a homo economicus is a virtual impossibility.^{37c}

The Origins of Preferences: Genes, Culture, and Coevolution

While the homo economicus approach has remained firmly entrenched in economics since the mid-19th century, its depiction of motivation is scarcely in line with modern behavioral science, a fact that led Gunnar Myrdal to complain as early as 1927 that economics was basing itself on "a dinosaur psychology." It is not just that human behavior is sometimes at variance with predictions of models based on the homo economicus; more importantly, science provides no reason to expect that it could be otherwise. In his book *Darwin's Dangerous Idea*, Daniel Dennett (1994) argues that many philosophers, humanists, and even cognitive scientists continue, more than a century after Darwin, to resist the idea that homo sapiens could have been produced entirely by evolution, with no helping hand from on high. He might have extended his tarring brush equally to economists, whose homo economicus seems to have been created by some invisible "manus ex machina." Human beings, after all, did not spring fully grown from the head of some enlightenment philosopher. Rather, they have evolved along an eons-long path of organic mutation and selection. To the extent that human beings have predictable behavioral propensities, these would have emerged initially from the organic evolutionary process, undergoing further modification by cultural processes that were themselves shaped by biologically-given capabilities.³⁸

Where do preferences, indeed human nature, come from? Evolutionary biological theory and evolutionary psychology, the human-specific theory derived from it, argue that "there is a universal human nature, but that this universality exists primarily at the level of evolved psychological mechanisms, not of expressed cultural behaviors" (Cosmides et al., 1995, p. 5). While evolution leads to universal human traits, there are differences in expressed behaviors due to variations across individuals in exact genetic blueprints (male vs. female, blue eyes vs. brown, and perhaps differences in temperamental and related predispositions) and because behaviors are shaped, in addition to genes, by environmental stimuli ranging from facts of birth order, child-rearing, and childhood nutrition, to broader differences in cultural and institutional environments. The complex functional design that constitutes human nature represents adaptations which have been produced by a process of natural selection over a geological time-scale and most recently genetically adapted to the way of life of our Pleistocene hunter-gatherer ancestors (but almost certainly not to current circumstances).³⁹

Cosmides, Tooby, and Barkow (1992) explain this process as follows. "Imagine that a new design feature arises in one or a few members of a species, entirely by chance mutation...

Let's say that this new design feature solves an adaptive problem better than designs that already exist in that species: ... [for example, a] new learning mechanism [that] allows one to find food more efficiently. By so doing, the new design feature causes individuals who have it to produce more offspring, on average, than offspring who have alternative designs. If offspring can inherit the new design feature from their parents, then it will increase in frequency in the population. Individuals who have the new design will tend to have more offspring than those who lack it, those of their offspring who inherit the new design will have more offspring, and so on, until, after enough generations, every member of the species will have the new design feature. Eventually, ... the more reliable learning mechanism will become universal in that species, typically found in every member of it" (Cosmides et al., p. 9).

The unit of natural selection is not the individual organism (as one might falsely infer from the quotation above), but the gene. The organism -- the individual person -- is the vehicle (host, bearer) through which the individual gene replicates itself (Dawkins, 1989). It is the individual rationality of the gene, so to speak, that is considered to be the driving force of evolution. The individual rationality of the gene, anthropomorphically termed by Dawkins gene selfishness, means that genes that procreate at the fastest rate can be regarded as carrying out a cost-benefit analysis in comparison of alternative strategies, where a strategy is a trait (such as caring for offspring) that affects the behavior of the gene's vehicle (a microbe, a flower, a donkey, a woman or a man).⁴⁰ Thus whereas economists posit that the individual acts so as to maximize his or her utility, biological theory hypothesizes that traits are selected for according as they maximize the proliferation of organisms bearing the associated genes.⁴¹ Traits that increase the inclination or ability of organisms to experience psychic wellbeing (or to have access to more resources, or to have increased personal longevity) can survive, of course, and pleasure (resources) and genetic survival are associated. But the correlation between pleasure- or wealth-seeking and genetic fitness is far from total.⁴² Consider the fact that human (and many animal) mothers will sacrifice nourishment, rest, and sexual contact while caring for newborn offspring. These tendencies have been selected for in the course of our evolution because they enhanced the prospects that offspring would survive to procreate. A gene for nurturing, the removal of which causes mothers to ignore their offspring who then die within days, may recently have even been discovered in mice (Brown et al., 1996). Mutations causing neglect of offspring (or absence of genes causing attention to them) need not arise exclusively in laboratories but may also occur accidentally in nature. Yet they are obviously not viable, simply because the vehicles carrying the altered gene (the mice) cannot transmit these genes to viable mice, so that there is no mechanism for passing the mutation from generation to generation.⁴³ Not only is the pleasure, consumption, or resource accumulation, of the individual or her proclivity to single-mindedly pursue these not what is selected for through the process of evolution, but even his or her physical survival is not central to evolution. If the chances of survival of a gene are increased by having its bearers sacrifice themselves to save enough others of its bearers to make benefit exceed cost for the gene (in the sense of multiplying itself at the fastest feasible pace), such behavior would be selected for. This principle of inclusive fitness means that genes that inclined their bearers to be solicitous toward their siblings would have been selected for in our past.⁴⁴ Solicitous behavior probably works through feelings of empathy and concern, as well as through tendencies of parents to help cultivate such behavior and of offspring to be receptive of parental messages, all of which can be summarized by the terms "kin altruism".⁴⁵ But cooperative tendencies may not be confined to one's relations with relatives. Favorable attitudes towards one's relatives based on the reproduction of the same genes seem to be complemented by at least conditionally

favorable attitudes towards members of the group with which ancestral individuals had to cooperate in order to survive and allow their genes to reproduce. Some sociobiologists and evolutionary psychologists have argued that genes favoring the playing of tit-for-tat type strategies in settings resembling the prisoner's dilemma would have been favored because they would have advanced the survival and reproductive success of those bearing them under conditions of non-anonymous repeated play. In a small community of the sort our ancestors probably lived in during the course of human genetic evolution, each individual could remember whether a given other had behaved cooperatively ("fairly") or not (had "cheated") in previous interactions. Cooperators would have been favored as partners -- the tendency to do so being itself selected for by its evolutionary fitness -- and would accordingly have thrived. Thus a built-in inclination to cooperate, and to feel moral outrage at those who do not, may have been selected for in the course of evolution.⁴⁶ Desires for approval by others, and inclinations to emulate the behaviors and apparent attitudes of others in the absence of strong reasons to do otherwise, may have been favored for roughly the same reasons.

Among the interesting implications of the theory of reciprocal altruism is that because they evolved in situations of relatively small numbers and high individual identifiability, today's human beings might be more prone to cooperation than is currently individually rational.⁴⁷ At the same time, modern men and women, moving among others whom they do not recognize as either cooperators or defectors, are likely to be less cooperative and more suspicious of one another than would be the case were the same partners to interact on a more regular basis (see Bowles and Gintis, this volume).

The foregoing should make it clear enough that while the result of human evolution has some innate empathy and an inclination towards reciprocity, she can be quite as devious as *homo economicus* in pursuit of her interests.⁴⁸ The picture of relations between the sexes and of the associated status rivalry that emerges from considering the strategic interest of the genes of males and females is also hardly comely.⁴⁹ The "selfishness" of the genes translates not only into consideration for kin and known persons with whom one might cooperate, but also into a struggle to assure that a gene's bearer -- a person -- thrives, reproduces, and (where possible) sees its offspring through to reproduction as well. This means that the role of self-regarding preferences remains central. Actual, evolved persons are also somewhat less rational than *homo economicus*, since instead of being endowed with perfect calculating machines, they have complex cognitive and emotional equipment built piggy-back on the more primitive nervous systems of reptilian and early mammalian ancestors, mixing emotive and rational elements in the process of cognition (Goleman, 1995, de Sousa, 1987, MacLeod, 1996), and permitting the individual to deceive his or her own self when it is evolutionarily functional to do so.

It is implausible to explain behavior in too fine a degree of detail on a genetic evolutionary basis. For one thing, selection of purely random modifications of genetically-embedded behavioral propensities could have been fine-tuned to a limited degree only over the course of a mere 50,000 generations or so.⁵⁰ Moreover, cultural change can in principle occur far more rapidly than genetic because to some degree its adaptations are designed, and because its means of proliferation include asexual copying as well as imposition (e.g., of behavioral standards). Of course, culture is a product of gene-based organisms, in the sense that it is built upon physically evolved mental and emotional machinery. Furthermore, the human capacity for culture can only have evolved if it showed evolutionary fitness from the standpoint of the usual genetic criteria. While this suggests that humans will not have developed social propensities or psychological traits that were counterproductive to their fitness, in the environment in which they evolved, it is worth noting that

cultural variability remains possible, so that behavior may not be uniquely linked to genes.

Biologists distinguish between the characteristics of the developed organism, including realized behavioral propensities, denoted the phenotype, and the underlying genetic makeup, or genotype (see, for example, the discussion of Tooby and Cosmides, 1990). An organism's phenotype is determined by both its genotype and its environment. For instance, the mouse gene which was mentioned earlier is apparently necessary for the evolution of nurturing behavior, but it is not the only factor contributing to such behavior. Brown et al. (1996), like others before them, found that mice possessing the "nurturing gene" learn how to nurture from observing other mice engaging in such behavior. More generally, psychological traits may well come in bundles of expressed behavior that are not decomposable. If this is so, then while a particular bundle may have fitness value, not all its components will necessarily have this property, and certainly not under all conditions that may arise in different places and times. For example, Burkert (1996) argues for the existence of a biological basis for humans' religious beliefs, while at the same time pointing out some of the unavoidable correlates of religions (such as warfare) which may not have fitness value. In the past million years or so, cultural and genetic change may also have interacted; for instance, changes in brain structures that enhanced linguistic capacity may have had greater fitness value after primitive language use had begun to evolve, so the appearance of language may have accelerated the evolution of language-capable brain structure (Lumsden and Wilson, 1983). Dual theories of inheritance, which give weight to both genetic and cultural factors, treat culture as an aspect of human phenotypes, and as a system for the transmission and selection of traits in its own right (Cavalli-Sforza and Feldman, 1981; Boyd and Richerson, 1985; and Durham, 1991). The theories vary with regard to the autonomy of culture. Dawkins (1989) suggested that the "meme," a proposed analogue to genes operating in cultural transmission, is propagated from brain to brain by forces having little to do with genetic survival; Lumsden and Wilson (1983) use the image of genes holding culture on a leash; Durham (1991) proposes a positive correlation between genetic and cultural evolutionary fitness; and Cavalli-Sforza and Feldman (1981) lean toward a tight fit between the two. One example of interaction between the genetic and cultural evolutionary processes may be that pertaining to the aforementioned problem of cooperation among non-relatives, where the logic of parent-child and sibling-sibling altruism no longer appears to hold. The evolution of cultural constructs conforming to the basic ethos of first cooperating with a member of one's group, then punishing him if deceived, may not only have been favored by a genetic process of the sort referred to above, but also may also have reinforced and accelerated that process in the later stages of its development. Cultural constructs include institutions, values and norms, and their evolution over time and in different places was determined in part by local and temporal circumstance and happenstance.⁵¹ The role played by emotions that are little if at all consciously controlled by those subject to them is also of great importance, and might help to explain, the peculiar tendency to seek revenge against someone who has wronged us even when the further cost to us cannot be rationally justified. But again, notions of justice, reciprocity, and the like, may have evolved in culture in a fashion complementary to, and possibly more refined than, these genetic predispositions. Thus, there could be the physiological basis of an "ethics module" in our nervous system, but its detailed contents and the extent of its development could be determined by our general culture and by our individual socialization experiences.⁵² An interesting example of the effect of socialization on ethical attitudes, and perhaps on an ethics module, is the effect on personality of the order of an individual's birth in the family. Sulloway (1996) regards the family not simply as a shared environment, but as a set of niches that provide

different siblings with different outlooks. He argues that competition over family resources, especially parental attention and affection, creates rivalries among siblings, and the order of birth confers distinct advantages and disadvantages that come to shape personalities. For instance, eldest children tend to identify with parents and authority and support the status quo, whereas laterborns rebel against it. These differences appear to manifest themselves in different preferences, such as greater sympathy for others exhibited by laterborns. Thus children are born without a specific gene for firstborn or laterborn, yet develop preferences based on the order of birth on the basis of broad genetic propensities, illustrating the phenotype-genotype dynamic. Competition over resources exists outside the family, too, and its effect on the evolution of the preferences of individuals in the course of their personal lives and in response to their personal experiences, within the confines of the inherited genetic makeup, should also be considered.

The respective roles of culture and of genes in determining the characteristics of individual persons, bears some similarity to the roles of prices and tastes in the theory of Stigler and Becker (1977). There, people are endowed with a common set of basic tastes, but what particular goods they eventually favor as means of satisfying those tastes is determined by a taste-acquisition process, in which relative prices and incomes play key roles. However, it is not necessarily only the details of taste (whether one prefers pizza or apple pie) in a narrow sense that are affected by environment and prices, as in the Stigler-Becker theory, but also perhaps such fundamentals as the relative weights placed on self-, other-, and process-regarding preferences.⁵³ Thus, our environments, including institutions created by people themselves, may affect our preferences in ways that then have important impacts on social behavior and outcomes, both by affecting the relative costs and benefits of different forms of behavior, and by offering different role models and messages of acculturation. In sum, evolutionary theory provides a scientific framework for predicting what type of preferences we are likely to be endowed with.⁵⁴ If we pose to it the question of whether we human beings are red in tooth and claw, or kindhearted and harmless, what it tells us is that our genes have been tested and tested again for reproductive success and that while this demands of the individual organism a degree of what is commonly seen as selfishness, we evolved human beings are also inclined to help our fellow gene-bearers and to cooperate with less-closely related conspecifics where collectively higher pay-offs are likely to result. At the same time, our phenotypic behaviors are not determined by our genes alone. While receptivity to environmental influences is broadly circumscribed by genetic propensities, our environments, including culture, also importantly influence our moral propensities. The longer "leash" humans enjoy as compared to all other animal species stems from the disproportionately large brain with which they ended up in the evolution process.

Reference to the length of the leash on which our genetic propensities hold us brings us to a brief but, from a normative standpoint, rather important remark, with which we will conclude this portion of the discussion. Although our essay is not primarily concerned with the strictly normative question of what our values ought to be (our interest lies in the question of what our values are, how they evolve, and how they are and might be affected by the arrangement of our social and economic life), we want to emphasize that our insistence upon the importance of evolutionary explanations for human traits should not be understood as an endorsement of the view that "the good" is that which is good for the genes. On the contrary, we would seek a thorough knowledge of the implications of evolution the better to rebel against what is frequently the amoral tyranny of the genes, unthinking machines that happened to have a knack for replicating. Of course, a belief in a freedom to so rebel implies a belief in a degree of autonomy between culture and/or individual, and

genes, of just the type that we have advanced here. And a belief that moral choice is a meaningful possibility may require openness to a domain of genuine moral reasoning (Hausman and McPherson, 1996), which our discussion by no means rules out. Human nature is neither strictly selfish nor strictly innate, but rather includes dispositions towards altruism and openness to moral sensibilities which are shaped over time by environmental stimuli. The plasticity of preferences provides some scope for actions aimed at shaping them, if only within the constraints imposed by our natures.^{55d} Institutions, Organizations, and Changes in Preferences We will use the term institutions to refer to rules, laws, norms and customs, and the term organizations to refer to the social settings within which activities such as production, learning, and consumption take place. Institutions include the legal or accepted ways of carrying out various activities, such as the rules and laws governing market exchange, jurisprudence, and politics, and also widely held normative notions such as those regarding fairness and reciprocity. Organizations include firms, families, schools, the media, government agencies, and courts. There is interplay between the categories: for instance, norms of family interaction shape behavior in actual families; legal norms and procedures govern activity in specific courts.

Institutions and organizations come into being for a variety of reasons and in a variety of ways. Our sketch of human evolution implies that some institutions and associated organizations may rest importantly on innate impulses, and that all must to some degree be consonant with innate predispositions, cognitive mechanisms, etc. But the concept of culture implies human invention, a degree of freedom from direct genetic determination. Institutions may arise simply from the cumulative effect of the uncoordinated actions of individuals. Satisfactory conventions may be hit upon accidentally, and then may be replicated over time and space by intergenerational transmission, by horizontal copying within and among groups, and by imposition by one group upon another. The time it takes to reach an equilibrium (e.g., to attain a convention) may be shortened if people or organizations with authority impose a solution that belongs to the set of potential equilibria, or if "moral entrepreneurs" intervene in suggesting an institution, or help create the conditions that facilitate reaching an equilibrium, for instance by suggesting coordination around a pre-existing focal point or similar transaction-cost reducing moves.

There is indeed a (probably quite large) set of institutions and organizations that have come into existence due to imposition, the results of which sometimes benefited primarily those who labored to impose their solutions, and at other times benefited much larger groups, or at least were accepted by broader groups.⁵⁶ Moreover, an institution may turn out to be universally harmful, but be adopted anyway, if the costs become clear only long after it entrenches itself.⁵⁷ And once interests are formed around the existence of a particular institution and its legitimacy has been established through various means, its survivability increases, other considerations notwithstanding. Moral entrepreneurs are individuals -- in early societies, shamans, elders, and chiefs, in later ones, philosophers, social theorists and activists, preachers, and others -- who both participate in shaping and articulating moral codes (and other conventions), and help to establish vehicles including beliefs, ceremonies, and pedagogical practices, that serve to insert those codes into the cultures of their society. Their actions constitute a common event⁵⁸ which affects the expectations of individuals aware of it, thus opening the road to the emergence of new institutions and organizations. Whether an institution or organization actually will come into existence, and how long it will survive, depends on the actions of individuals. Individuals decide whether to participate or not, whether to abide by a norm or not, depending upon their perception of the costs and benefits, including strictly selfish but in many

cases also other- and process-regarding considerations. Since the strength of an institution depends upon the proportion of persons who adhere to it, the outcomes of such calculations will -- sometimes glacially, sometimes precipitously -- affect the perpetuation of that institution. Likewise, the fate of an individual organization, and of the genre of organization to which it belongs, depends on these sort of calculations. Many institutions rise and fall in part on the strength of individuals' empathy for one another, on their mutual respect or fear, on their willingness to abide by rules, their readiness, on the contrary, to free-ride, and so on -- that is, on the full sets of self-, other- and process-regarding preferences that were shaped by prior forces of inclusive genetic fitness, cultural evolution, and individual experience.⁵⁹ Organizations and social arrangements must thus function at any given moment with the raw material of preferences that happen to be at hand. Accordingly, the matching of preferences to institutions is a determinant of institutional outcomes and viability. For instance, if the butcher, baker and brewer are hardworking and care about their households but not about yours, you may find that you eat better in a market system than in a commune, and if most people place great store in eating, communes may become few and economies consisting of private firms serving customers in markets may flourish.

The papers in this volume suggest numerous examples of how values affect institutions. Certain forms of trust may be prerequisites for doing business (North) or for reaching high payoff outcomes in organizations (Schotter). Inclinations to reciprocate and punish may raise payoffs to employer and employee (Fehr and Gaechter). The presence of an appropriate norm may smooth the flow of traffic over a bridge (Sugden). The waning of female acquiescence to patriarchal values with respect to who cares for the young or elderly may push "caring" activities into the market, altering their quality and emotional benefits (Folbre and Weisskopf). The strength or weakness of norms of honesty may help to determine the effectiveness of a government bureaucracy or judiciary (Rose-Ackerman), with important impacts on countries' abilities to achieve economic growth. Overly stringent morals may impede the development of competitive markets (Montias) or reduce the ability to focus on productive activities (Kuran).

With such examples in mind, we can also go on to look at the relationship between institutions and values as a two-way street. Individuals' preferences help to determine which organizations and institutions are perpetuated, but organizations and institutions in turn affect preferences. For instance, exposure of the young to certain ideas or practices may lead to their favorable disposition towards them, to a preference for following them, and to behavior intended to satisfy those preferences. Attempts to affect family structures, school curricula, and television programming or their viewing indicate the common belief in such exposure-value links, since their aims are to affect the values of today's youth and their behavior today and tomorrow. An institution may thus provide for its replication by instilling the preference that it be maintained. The remainder of this section explores some of the principal methods of shaping preferences, and the institutions and organizations that play key roles in that process. (We return to the issue of the mutuality of effects of institutions upon values and of values upon institutions in the next section).

The view that institutions affect values is of course not new; Aristotle and Plato articulated such ideas, and were followed by a long string of philosophers, politicians, and others. Those who could, sought to shape various institutions to protect and advance the preferences they preferred others to hold.⁶⁰ Owners of slaves, feudal privileges, or wealth, for instance, promoted belief in the sanctity of the property from which they benefited where doing so saved on the costs of guards and private armies. Other-regarding preferences have also inspired value promotion, in some instances by those with a genius for

identifying a widely shared common interest -- the "moral entrepreneurs" mentioned earlier. Selfish and collectivist motives may also have mixed, as when Abraham adopted a moral code with the understanding that his "seed would be as numerous as the stars." God, it would seem, understands incentives (and inclusive fitness).

There are several methods of shaping the preferences of individuals, and there exist diverse institutions and organizations through which these methods can be applied. The combined effectiveness of methods with institutions and organizations depends, of course, on the target individuals' impressionability, the degree to which their true preferences are known to others, the observability of their actions, and so on. Here, we suggest a few general ideas about the effects of institutions and organizations on preferences, discussing briefly several methods of shaping preferences, from inculcation by preaching to practice of desirable behavior and role-modeling, and several institutions and organizations, from schools and families to social networks and the media. In this discussion, we focus mainly on a modern, western context.

One common method for shaping preferences is to inculcate them directly, generally during the so-called "impressionable years" of childhood. Teachers tell children over and over again what is right and wrong, as do parents and other adults, and signs proclaiming virtues and denouncing vices hung in classrooms and other institutions are just one, visible example of the multi-channel barrage of moral messages.⁶¹ Teaching values is also done through the retelling of fables, myths, and religious stories in which the virtuous are rewarded and the sinful suffer -- note well the appeal to self-regarding preferences of the message receivers (more on this below). While recourse to inculcation resembles simple brain-washing -- what is repeated often enough becomes directly fixed in the brain -- its efficacy seems also to depend upon emotional associations with the messenger, such as a trusted parent or role model; on acceptance of his or her authority (as with a parent or elder); and perhaps even the content of the message (viz. the perhaps innate receptivity to urgings to help siblings or to notions of fairness and due punishment).

Trusting parents and authority figures is probably a human genetic predisposition, which is further shaped by the operative social environment. Preferences can also be shaped through appeals to reason, by seeking to teach that society cannot function without respect and caring for others and without voluntary submission to certain rules of behavior or civility. Schools, media, political persuasion, and other institutions and organizations that address more mature individuals, or organizations in which such individuals participate, are the common executors of this method. In comparison with inculcation, this method relies on a lesser degree of paternalism by preference shapers towards the learners and requires a greater measure of their rationality; but both methods share in common the belief that individuals' preferences can be affected through discourse.⁶² Exposure of individuals to behaviors reflecting certain preferences is yet another way of transmitting such preferences. Observation teaches "how things are done here," which is the essence of socialization.⁶³ Children observe how adults behave, and the tendency to learn through emulation causes them to internalize some of the values that guide adults' behavior. Observation also allows the observer, child and adult, to infer what kinds of behavior, and therefore preferences, are rewarded and sanctioned, and therefore what it is in one's self-interest to learn. This method is largely grounded in the human proclivity to reciprocate behavior with like behavior, and therefore it can be carried out most effectively in the framework of organizations that foster repeated interactions, where reciprocity can be practiced.⁶⁴ Incentives that appeal directly to self-regarding preferences are often employed to shape other- and process-regarding ones. Prizes are offered for being a virtuous person (a monetary prize for returning a lost item), praise (which is almost universally craved -- see again

Fershtman and Weiss, this volume) goes to those who seem to behave in desirable other- or process-regarding ways (a plaque naming the donor of university or hospital building), and punishment may result from seeming to act on wrong preferences. By changing the costs and benefits of holding particular preferences, as judged by the preferences one already holds (for praise and rewards, and for avoiding punishment), such prizes and punishments help to shape "pro-social" preferences, building a specific behavioral phenotype from genetic stuff shapable in a multitude of possible directions. Repeated or transparent appeals to self-interest, especially by those unable to signal virtue on their own parts, may by contrast foster the kind of calculativeness that allows only the opportunistic feigning of other- and process-regarding preferences.⁶⁵The effectiveness of institutions and organizations at shaping preferences depends on a number of properties, including the frequency and continuity of interactions among individuals, the types and transparency of actions in which individuals may engage, and the ability to store and produce information about individual and group behaviors and outcomes. Particularly relevant to our discussion, for instance, is the fact that institutions may provide more or fewer opportunities for practicing virtuous behavior. Thus, interactions within families and small groups may permit desirable other- and process-regarding preferences to be rewarded more reliably than they can be in large-group and anonymous interactions. If within-group attitudes are not built on negative feelings towards outsiders, then habituation to other-regarding or virtuous behavior in the small group setting may help build "moral muscle" and predispose individuals to behave similarly in situations involving outsiders, due to processes of cognitive carry-over or dissonance-avoidance.⁶⁶Organizations such as firms -- in part, perhaps, due to our innate cognitive biases -- take on some of the attributes of persons in their interactions with us. A typical individual has many fewer interactions with other individuals in social or business relations than does a typical organization, such as a firm of moderate size, which may interact daily with hundreds or thousands of employees and customers. As with individuals, those controlling an organization may choose to have it behave in a manner that reflects more narrowly selfish interests, or in one that seems to also put weight on certain virtues and on the wellbeing of others. Because organizations are much fewer than individuals and perhaps for that reason more easily accessed by promoters of social change, because their objectives and behavior are designed, and because they have frequent and sustained interactions with many individuals, the effects of moral attitudes and behavior on organizations' parts may be relatively influential in engendering similar and reciprocal attitudes and behavior on the part of the individuals with whom they come in regular contact. Institutions that help screen individuals according to their preferences, or that help individuals to signal their preferences, may also induce changes in preferences. If it is relatively easy to identify individuals' preferences, then individuals possessing desirable preferences can be rewarded, promoting the processes of learning and habituation described earlier. By contrast, if individuals are entirely anonymous and their preferences are totally unknown, it is only their behavior or its consequences that can be judged and rewarded.⁶⁷ This is done primarily by permitting reputations to be built through repeated interactions. Institutions that use long-term relationships to foster familiarity, affection, and consistency in the interpretation of signals, can assist in the screening and signalling of individuals' types or characters. Stable social networks, such as firms and voluntary organizations, thus become stores of information about the individuals that populate them. Institutions and economic arrangements can also affect preferences as an unintended by-product of their primary function. Television programming, intended by the supplier as a means of earning advertising revenue and by the viewer as a means of entertainment, may have unintended effects on values.

Firms are operated to produce some products, but through their incentive schemes they may induce certain preferences in their employees. And schools are run primarily in order to impart skills and knowledge, but at the same time they can be used as a vehicle for "molding values." More abstract institutional arrangements, such as market coordination of economic life, or conventions with respect to property rights, may also affect preferences. Typically seen as being embraced by a society for their benefits to material prosperity and their consistency with individual freedoms, markets may at the same time help mold values like competitiveness and individualism, may strengthen work ethics or concerns with reputation, or by reducing both the demand for and the feasibility of reciprocity, they may lower the preference for engaging in it. Although the feedback of such effects upon institutional viability and individual welfare can be expected to affect an institution's persistence at least in the long run, if key decisions governing the evolution of institutions and economic arrangements are guided mostly by other considerations, then their effects on the evolution of preferences may have the character of unrecognized externalities.

An important question concerning the influences that organizations and institutions have on preferences is whether their effect is permanent or temporary. The answer may depend in part upon the timing and consistency of these influences: cultural norms communicated consistently through many channels in childhood may be extremely durable, especially if congruent with innate predisposition; the impact of values communicated by some but not other agents at later points in life may be comparatively fragile. In most intermediate cases, there may be a degree of inertia in preferences and behavior that ensures some continuity even when the operation of particular methods of shaping preferences is discontinued. However, the strengths of induced preferences may tend to weaken with time when the stimuli which encourage or sustain them are no longer present.⁶⁸ e. The Two-Way Interaction Between Institutions and Preferences A full understanding of the effects of preferences upon institutions, and of institutions on preferences, requires a view of their relationship as operating in two directions at once. But researching such a two-way relationship rigorously presents serious methodological challenges. If both institutions and values are endogenous, what can be the starting point for one's analysis?

As usual, what can be treated as exogenous and what as endogenous depends upon the problem at hand. If we are studying the evolution of multicelled organisms from earlier forms of life, such basics as the origins of sexual reproduction need to be explained, perhaps by reference to success in thwarting fatal predation by parasites (Tooby and Cosmides, 1990). If we are studying family formation in human beings, sexual reproduction and physiological specialization among the sexes, basic facts of brain structure and chemistry, and nutritional requirements can be taken as givens, but details of the social relations between the sexes and within family or corresponding social units may not be. If we are studying the rise of divorce and of out-of-wedlock childbirth in the late 20th century, both basic biological drives and a backlog of social norms concerning gender roles and sexual behavior can be taken as given, and other factors, such as changing economic opportunities and demands, the structure of public assistance programs, and broad cultural trends, may be the relevant exogenous variables (Akerlof, Yellen and Katz, 1996).

In some instances, it may be possible to conduct full-blown general equilibrium analyses, in which both institutions and values are determined simultaneously by such exogenous factors as initial genetic and cultural endowments, resources, and technologies. In general, tractability will require that such studies focus on only a few variables at a time, so researchers need to be alert to the sensitivity of their conclusions to their choice of modeling and empirical research strategy. At other times, it may be worth trading the simultaneity and self-contained character of general equilibrium analysis for

the greater modeling richness that might be obtained by having recourse to more partial equilibrium and recursive-type structures, in which one set of variables (values, or institutions) is taken as an initial given, and its effects on the other set (institutions, or values) is then analyzed. The impact of this round of effects on the first set of variables may then be looked at, and so on. Illustrating system properties by way of simulation will be a useful technique in both general equilibrium and partial equilibrium or recursive models, if closed-form solutions are unattainable without excessive sacrifice of complexity. Insights into directions of change may be invaluable even when they come without identification of an overall equilibrium, for in situations in which change is slow and unpredictable exogenous disruptions are likely, both the existence and the nature of equilibrium may be irrelevant for practical purposes.

The approach advocated in this essay is one that would generally take genetic receptivities towards preference patterns as a given. For the classes of problems touched upon in this essay and book, these genotypic patterns will differ from those of homo economicus insofar as the typical person pursues objectives other than maximization of wealth, pleasure, or longevity of the individual -- as it is widely suggested will be the case due to the nature of the inclusive fitness criterion and the incremental character of the evolutionary process. Behavioral phenotype is then determined, at a second level of analysis, both by genetic inheritance, and by environment, which includes both general cultural elements, and details like birth order, family size and economic situation, parental experience, etc. Whereas genetic propensities vary perhaps modestly and more or less uniformly across all of humanity, general culture is shared within groups of varying sizes, some very large, while the final set of factors, the details of the individual's environment, vary widely within populations.

At the level of analysis which is likely to characterize most applied research, one takes as given a particular moment in cultural evolution and a certain set of demographic structures and organizational forms. One then looks at the effects of particular changes or sets of changes -- intensified competition in international markets, increasing participation of women in labor markets, the waning of certain sexual taboos -- upon the shaping of preferences and the further evolution of economic and social arrangements. We provide brief and informal illustrations of this last type of analysis in Part 3 of this essay, but first we close this section with some remarks taking a longer evolutionary view, and attempting to reconnect with some of the broader issues of our essay.

Institutions and values have evolved in tandem over the ages. At the time when primate societies were gradually shading into human, culture as such may have been minimal, but social norms, feelings of concern, jealousy, etc., toward others, and senses of right and fairness already may have manifested recognizably human qualities.⁶⁹ Our early ancestors would have developed vocabularies to describe and guide such feelings and moral senses, with details differing with the terrain, and with some culling of more versus less successful adaptations through the effects of differential survival. As societies shifted from the hunting and gathering that characterized human life for all but the most recent millennia on to pastoral and agricultural systems and then to still more complex orders marked by social stratification, writing, taxation, formal religion, and cities, it is increasing technical mastery of environments, permitting greater population densities and the support of first small and then larger portions of the population at above-subsistence levels, that appears to be the key factor explaining social and economic evolution. Yet scientific and technical knowledge are themselves aspects of culture, and change was brought about not by new tools alone, but by the combination of new tools and know-how with new and increasingly complex social divisions of labor, organized in

accordance with normative, legal, and belief systems that at most times meshed with current techniques, and at some times also permitted the groundwork to be laid for further technical and social changes.

The technological and organizational developments characteristic of capitalism, for example, may at least initially have been associated with evolving notions of private property, of personal liberties, of a domain for states, of correct settings for reproductive and child-rearing activities, and so forth. The evolution of institutions such as labor and capital markets involved not only organizational and technical innovations, but also changes in moral notions such as the construction of norms governing employment relationships out of elements of earlier master-servant and master-apprentice precedents, and the relaxation of prohibitions on so-called "usury."

A hallmark of cultural, just like biological, evolution, is that because adaptations can build upon accumulations of prior know-how using the principle of modularity, change tends to accelerate with time. Estimates suggest that it took two billion years for the first life-forms to evolve to the eukaryotic stage (in which cells contain membrane-bound nuclei), 0.7 billion years for eukaryotes to become multi-cellular, and ever shorter spans to the appearances of complex land animals, and so forth on to the first human beings. In much the same way, humans spent upwards of a million years in their prehistoric "twilight," but it took no more than a few thousand years from the birth of irrigated agriculture to the apogee of literature and philosophy in ancient China, India, and Greece, less than two more millennia to Copernicus, Newton, and the early merchant states of Europe. From there, it was but a few generations more to Darwin, Einstein, and the beginnings of modern industry and medicine, and mere decades thence to modern quantum physics and genetic engineering, the global marketplace, the birth-control pill, and the Internet. Numerous scholars have taken note of the changes in norms and values that have accompanied social transitions such as the birth and demise of feudalism, or the rise of modern capitalism. Yet, while there is undoubtedly some validity in the notion that the moral "superstructure" of a society (to use Marx's phrase) is adapted to its socio-technical or economic "substructure," there are also reasons for doubting that the accelerating pace of technical and organizational change has been matched by equally rapid and appropriate adaptations in accompanying normative and acculturation systems. We continue to teach the ethics of the Bible and other ancient texts centuries after the societies that gave birth to them have changed beyond recognition. There may be good reasons for doing so in a world without contemporary moral compass, but the differential speeds of organizational and technical versus moral change may also give cause for concern. "Moral evolution" may move slowly because the foundations of our moral systems, which seem partly inherited through our genes and partly handed down from millennia of culture, are only in smaller part supported by our powers of reason, and have thus far remained under-studied by science. Campbell, who argues that market mechanisms and legal systems may have worked well in the past due to a "residue of awed indoctrination," suggests that "[i]f indeed the process Weber described as die Entzauberung der Welt (loss of the enchanted worldview) still proceeds apace, we must look to alternative means to protect collective goods" (Campbell 1986:177).

Today's industrialized societies have seen a transition over but a few generations from a state in which most individuals spent their lives in a single locality, produced many of their own necessities, and interacted with small numbers of known others within a fairly rigid socioeconomic structure, to one in which people depend for their livelihoods on selling commodities or labor for cash, work for a series of employers and live in a number of localities during their life-times, and are able to purchase an extraordinary variety of goods from large numbers of sellers, with many employers and sellers being large, bureaucratic entities the local personnel of which are short-term hires. Not

only are people interacting less personally, and with less opportunity to benefit from reciprocity through repeat interaction, in their production and trading activities; but they are also interacting less with one another because of the increasing cost of time, the availability of economic alternatives to investing in relationships with others, and the attractiveness and accessibility of amusements (e.g., television) not requiring social interaction. With less interplay and less clear interdependence, people may develop fewer loyalties and affections, and may thus feel less regard for others (Putnam, 1995).

An interesting example that my illustrate the points made in the previous two paragraphs might be found in a comparison of the contemporary worlds of the Western countries and East Asia. It has often been remarked that the vigorous performance of Japanese industry in the post World War II period may be attributable in part to patterns of loyalty between employee and the firm, to trust between trading partners, and to a work ethic, that are products of a culture emphasizing family ties, hard work, honesty, thrift, and rule obedience. Two related and complementary explanations may be offered for the origins of that culture. First, in its recent past as a firmly ordered feudal agrarian society, Japan consisted of tight-knit social and economic networks that fostered loyalty, obligation, and mutual "monitoring" in a wide array of activities due to the transparency of individual actions in these networks, and the adherence to a corresponding set of widely-shared values which made this possible. These factors tend to engender stronger other-regarding and process-regarding preferences than a more loosely-knit society.

Second, this social structure has allowed for deliberate, top-down institutional design through borrowing, adaptation, and innovation by moral entrepreneurs. One aspect of the Japanese institutional landscape (often neglected in Western discourse about things Japanese) is that firms are said, including by their top executives, to be run primarily in the interests of their core employees, secondarily for the benefit of customers, and only lastly for the benefit of shareholders (Aoki, 1990, and Miyazaki, 1993). If this is indeed so, the implication is that those Japanese who are covered by this system have most of their encounters outside the family with institutions that act as if they had beneficent other- and process-regarding preferences. As we argued earlier, this would tend to engender similar preferences in individuals.

As the greater recency of Japan's transformation into an industrial market society as compared with Western industrial counterparts wanes, and as the pressure for freer international and domestic trade (as well as for institutional change within Japan) mounts, the possibility rises that Japan's differences with Western counterparts in the late 20th century will dwindle, and that many of the same social complaints heard in Europe and North America today will become mainstays in Japan as it moves into the next century. This suggests that business dealings based on trust will become more difficult in Japan, as they are now in the West; that engendering loyalty within family-styled employment relations will be less and less easy; and that hard work will need, more and more, to be purchased with complex incentive and supervision systems.⁷⁰ An interpretation of the "crisis of values" viewpoint, in light of the foregoing, is that contemporary individuals possess a stock of civility, fairness, and other preferences which have been partly handed down from past societies. Although Bowles and Gintis (this volume) are probably right to suggest that institutions are unlikely to survive even as vestiges unlike they serve some useful role in the current context, the principal institutions and organizations transmitting the values in question -- families, communities, churches, etc. -- may today be weakening, even as the institutional settings in which the values are reinforced -- small towns, repeated relationship-specific trade -- are replaced by less reinforcing forms of organization. Families and other primary value transmitters may be weakening under the influences of still-expanding personal choice and mobility, and of the skeptical or nihilistic

cultural order spawned by a variety of factors, including the shocks that Copernicus, Darwin and others caused to earlier world views. Calls for moral regeneration, family values, and religious revival are quite understandable in this context, even if a literal return to the past is neither possible nor desirable. The premise of our research agenda is that understanding our problems -- in this case, those of the moral basis of a society we would want to live in -- is the first step to effectively addressing them.

III. Applications

We have argued that human behavior is governed by preferences, of both inherited and experiential origin, that include preferences with respect to one's self but also ones with respect to process and to the well-being of others. And we have argued that preferences both are influenced by the institutions and organizations of societies, and help to determine the selection and the performance of those institutions and organizations. In this Part, we illustrate these propositions in a manner suggestive of their relevance to those who design and run organizations, to policy makers, and to social scientists who would advise them. The present discussion concerns three examples -- the family, the workplace, and national social insurance -- although limits of space and expertise mean that even for these examples we can offer only broad hints of the promise of our framework. The applications are organized around the key questions that the framework of the previous Part helps us to address: What are the determinants of individuals' behavior (a question we address with an emphasis on the role of preferences)? What environmental factors mold these preferences? How are these factors embedded in institutions and organizations? And how can the decisions of managers, policy makers, and others, affect institutions, values, and behavior in socially desired ways?

a. Values in Three Institutional Examples

The institution of the family, already much remarked on in our essay, offers an attractive subject for illustrative analysis. Families are arguably the foremost of the social settings in which preferences, including values, are shaped. Certain moral inclinations are either instilled or fail to be instilled at a young age, and if the presence of these inclinations is critical to the smooth functioning of society in civic, commercial, and other respects, then the socialization with which families provide their children as a means of equipping them for success in the wider world creates a positive (or negative) externality to society as a whole. Families are also important economically, playing prominent roles as direct providers of labor, and as consumers. Family structures are influenced by economic forces, such as changes in the costs of raising children. Understanding how families affect values and how values affect families could contribute to addressing these concerns.

In modern societies, most families are formed and either maintained or discontinued as the result of choices by adult male and female partners. The main motivators of family formation include the desire for sexual relations and the desire to procreate. Core features of these drives are almost certainly hard-wired into us as in other species. For the individual, sustained intimacy and emotional security may be another benefit sought in marriage. Family formation is also desired as an assurance of financial support from one's offspring, and of care in the event of sickness. Both the drive to leave offspring beyond a single generation, and the desire for care in one's own time of need, may motivate investment not only in the immediate physical welfare of children, but also in their "moral upbringing." Success in that enterprise can increase children's future fitness if others select for signs of such morality in those with whom they interact, and it can increase, too, the likelihood of

their providing the required care to their parents when the time comes (solving what would otherwise be from an economic viewpoint a time inconsistency problem in inter-generational reciprocity).

A second institution which intrigues us is the workplace, or more specifically, the relationship between employer and employee, about which we have also commented earlier in this essay. Whereas family and school are central institutions where values are shaped in one's youth, the workplace reaffirms and strengthens or invalidates and weakens values held by employees. Since employment relationships are critical to productivity, to households' economic security, and to living standards, the interactions between values and the structure of employment relationships are potentially of great significance. The biblical observation that man must eat "by the sweat of his brow" rightly implies that it is necessity that is the first motivator of productive effort, and in standard economic models, its instrumental role in augmenting wealth or consumable resources is the only motivator of work. It is unreasonable, however, to suppose that workers check their extended preferences at the door of the factory or office, and more sensible to suppose that they come in as human beings, and that as Akerlof (1982) suggests, they relate as such towards both employer and fellow employees. For example, jealousy, resentment, gratitude, concern for coworkers, and loyalty may complement the desire for personal gain as sources of their behavior, and cooperation may be selected as the outcome of an effort-choice game when propensities towards reciprocity are appropriately reinforced. Here, too, society may inherit a stock of moral capital, including such things as a work ethic, pride in craftsmanship, professionalism, loyalty and solidarity. These may be sustained or depleted by an employer's practice of incentive schemes that may either build on such moral capital, or instead strengthen employees' self-regarding preferences and erode their concern for fairness and for the well-being, or the favorable regard, of others.

For the third illustration, consider an institution that operates at the societal level: national social insurance schemes. Such schemes, highly developed and fiscally significant in today's industrialized nations, have potentially important implications from the standpoint of social justice, efficiency, and order. To be sure, the shaping of preferences has little or nothing to do with what social insurance schemes were designed to do, and how their operation depends upon and affects preferences might easily be overlooked. Yet even the relatively nonaltruistic explanation of these systems as mechanisms of societal insurance which each individual would favor from behind a "veil of ignorance" (before knowing her actual economic status), is consistent with the idea that ex post support for them depends in part upon a certain "moral attitude. For those who believe that the provision of certain basic guarantees is a requirement of a civilized society, the question is: how can such guarantees be put in place in such a manner as to impose the least feasible burden upon, and to maintain the most support from, those who must pay for them. Preference and value questions arise on both sides of the issue, because they can affect the levels of abuse of social insurance programs by beneficiaries and providers, which can in turn affect program costs and the support of contributors (taxpayers). To the extent that program design can itself influence value-related behaviors and preferences, these effects may therefore be critical to program viability.

Both the desire for personal insurance and certain shared moral principles may explain support for social insurance programs in developed economies. Consider, first, the motivation of recipients. Their own positions make them candidates for morally hazardous behaviors such as the fabrication of claims for benefits and failure to make good faith efforts to find employment. Thus, the less are these potential recipients constrained by "moral" preferences, the more abuse of such programs we can expect to see, and the more

costly will the programs be to operate. Abuse by beneficiaries may directly reduce the level of benefits available to the genuinely needy, and it may lead also to further reductions through its impact upon the preferences of the taxpayers, who may take a less charitable view of such programs the more that they believe they are being abused. The honesty and efficiency of the personnel of government agencies and nonprofit organizations that act as agents of the public in providing social services may also be affected by moral factors and may in turn affect public willingness to pay.

b. Policy Interventions and the Values-Institutions Nexus

Suppose now that we ourselves are moral onlookers who wish to help society to strengthen families in which emotionally and morally healthy children can be raised, to improve the design of workplaces so that both productivity and satisfaction are enhanced, and to provide humane levels of social insurance at the lowest feasible cost. We would approach these tasks very differently depending upon the model that we believe best describes human behavioral propensities. For example, let us first, as a thought experiment, erase our earlier priors and assume that self-interest is after all the only effective motivator, and universally so. On this assumption, families may well be a lost cause; for the motivation to form and to remain in families would appear to be waning rapidly as the stigma of divorce and of sex outside of marriage have declined, as the availability of alternative forms of insurance has increased, and as the likelihood of support from family members shrinks with their increased mobility and individualism. Employment relations may have some hope of being effectively engineered for economic men, using piece rates where hard-to-monitor quality and equipment care issues are unimportant, setting up competitive tournaments for promotion which ease monitoring demands by requiring relative ranking only, and relying on reputational mechanisms to dissuade employers from renegeing on their end of employment contracts. But with severe asymmetric information in the workplace, and with external markets for reputation working only imperfectly, one would expect to see a very different world of organizations, assuming a population of economic persons-- one in which productivity would fall below already observed potentials, and where the imperatives of motivation would preclude making work anything other than an unmitigated (if necessary) evil

Under the same assumptions, social insurance programs might have to be limited to the benefits that are in the private ex post interests of the majority of the taxpayers, to employ tough rules of eligibility, to build in abuse-detering costs such as the requirement of working for one's benefits, and to enforce draconian penalties for beneficiaries and providers found to be abusing them. Indeed, the market economy as a whole could be expected to function rather restrictedly, in a world of economic persons, on the behavioral assumption of pursuit of self-interest unmitigated by concern for others or for process, as each agent would always be certain of being cheated by every other agent whenever it were in their interest to do so, and the deterrence value of prospective penalties could only exist to the extent that it could be made to be in someone's self-interest to monitor misdeeds (including self-serving accusations). Under such conditions, much potentially beneficial trade would be foregone so as to maintain long-term dyadic relationships, or for the security of outright self-sufficiency.

However, if behavioral propensities are of the more complex variety that we have argued them to be, far more fruitful approaches might be available, the best of which would take into account the receptivity of human beings to the influence of their experiences, the mixes of preferences that may be sustainable, and the ways in which institutions can influence the preferences on which behaviors are based. The recent intensification of discourse about "family values" is suggestive of forces set in motion in reaction to the past

generation's swing of the social pendulum. While that pendulum never returns to the same status quo ante, these reactions may promote the evolution of families and similar support networks in directions more consistent not only with the contemporary environment, but also with the more durable moral fundamentals of civilized society and with contemporary extensions of those fundamentals such as equality of the sexes (Folbre and Weisskopf, this volume). Although some of these changes may, as it were, "well up" from below, the modification of tax and transfer systems to encourage parental responsibility is among other changes, in the nature of policy responses, that may use economic inducements to strengthen, or at least avoid weakening, an institution having such beneficial moral, emotional, and insurance effects -- in the last instance also helping to alleviate pressures on the social insurance schemes we have also discussed here. Policy thinking should be directed, as well, at strengthening other institutions which may buttress, supplement, or provide alternatives to the family's role in the socialization of children, for instance the improvement of pre-school programs and of the value-related components of schooling.

In the workplace, complex, extended preferences do not unseat pecuniary quid pro quo from its center stage position (although a recognition of self-regarding intrinsic motivation may sometimes be of first-order importance). Reciprocity and loyalty are now possibilities, but opportunism and attempts to free ride on or take advantage of the naivete of others are no less so. Outcomes depend on the experiences with which workers enter the employment relationship, the mix of workers and their individual proclivities, the nature and history of their relationship with the specific employer, and the possibilities inherent in the relevant production processes and technologies. It may be profitable for an employer to commit to a long-term relationship with employees, structuring an environment rewarding reciprocity and nourishing inclinations towards loyalty on both sides. Narrowing pay differentials even when good indicators of individual productivity are available could induce good will and corresponding effort from a workgroup whose members are inclined to view one another with sympathy, as in Akerlof's (1982) example; or this may fail to happen, for instance if potential workgroup members are steeped in an ethos of individualism of the sort that may have strengthened since the observations about which Akerlof theorized were recorded. Self-employment and the foregoing of some scale economies will prove superior for incentive reasons, in some instances; in others, group production with profit sharing. While the potential impact of effort elicitation problems on macroeconomic outcomes is already well known from the efficiency-wage literature, it may also be worth considering the external effects of the strategies of individual firms by way of their influence on the receptivity of workers who change positions to the incentive environments of their new firms (see Schotter in this volume).⁷¹ As in the efficiency-wage case, this could be the basis of certain policy prescriptions perhaps resembling, for instance, the U.S. Department of Labor's recent proposals to award favorable tax treatment to firms that engage in certain relationship-enhancing labor practices.

Perhaps one of the most important points to be made with regard to social insurance is that "virtuous behavior" on the part of potential beneficiaries -- not applying for or accepting assistance where it is unneeded or where the relevant qualifications are not in truth met -- is unlikely to be an "all or nothing" proposition. Part of the motivation for avoiding such acts may be the desire to avoid feelings of shame. When individuals have not completely internalized the norm in question, the level of shame felt by them with respect to these acts may be an increasing function of the likelihood which they attach to their being discovered, and of the importance to them of the individuals likely to learn of them. It is, on the other hand, likely to be decreasing with the proportion of others who are believed to engage in the disapproved act. The first linkage suggests that insurance may be more difficult to provide at the

level of the society than at that of the family, where discovery by others who matter to one is more likely. The second suggests a reason why societies may find their ability to provide such insurance declining over time: values of self-reliance, which may have been firmly implanted in most individuals when families were their principal support systems, begin to erode as the option of using the more impersonal insurance of the state is exercised by both some deserving and some undeserving recipients. By reducing the shame of others, the perception that some are cheating can lead to a spiraling epidemic of fraud -- which, again, will reduce both the capacity to help the truly needy, and the amount of funding that taxpayers are willing to provide.⁷² Such observations may point in the direction of putting greater effort into the discouragement and detection of abuses, to considering methods to reduce the anonymity of applicants or at least abusers, and to avoiding too complete a shift away from reliance upon the resources of the family and other small groups. However, too blatantly treating each potential recipient as a suspected cheater could further deplete the remaining reservoir of civic virtue for reasons of the sort discussed by Frey (this volume); and eliminating or cutting back social insurance too severely could impact negatively on overall acceptance of the social order by certain groups of individuals, with ultimately higher cost to society. Thus, our remarks here, as with our other examples, are only meant to illustrate the potential value of taking into account the effects of program design on values and the effects of values on program viability, and not to lay out any specific set of policy recommendations.

Conclusions

Economists take pride in the rigorous manner with which their models of constrained maximization of self-interested objective functions permit them to analyze problems of exchange under given institutions, and in some cases also the choice of institutions themselves. At the beginning of this essay we offered three reasons why it may be necessary to go beyond such models. First, the institutions of a market economy could become prohibitively costly to operate were all norms of fair dealing and reciprocity to be displaced by selfish calculation. Second, it is difficult to reconcile some game-theoretic predictions with observed behaviors unless models of preferences are extended to include elements conventionally excluded from them. Third, some of the most pressing social problems of the day may reflect stresses on society's normative fabric, and such stresses both affect and are affected by the functioning of institutions including families, firms, and states. Putting the strengths of economic science to work on the task of addressing these problems, we have argued, may be impossible, in many instances, without explicit recognition of value-institution linkages.

Exactly how best to do this is a matter that can hardly be prescribed to the satisfaction of all researchers; which approaches prove the most promising will be known only as the types of analysis illustrated in this volume are further criticized, tested, and developed. Our own general comments have boiled down to suggesting that models of individuals solving constrained maximization problems, often in complex interaction with one another, should remain at the center of economic methodology (with due allowance for limits to rationality) but that the objectives individuals are assumed to pursue should be permitted to include what we have called other- and process-regarding concerns. Those concerns are not to be called upon ad hoc to explain what is otherwise inexplicable. Rather, they would be modelled as outcomes of the environments in which individuals develop and live, within boundaries set by genetic predispositions. Both the parameters of those predispositions and the selection

of institutions and norms are in principle amenable to analysis using deductively-generated evolutionary models that, if based on properly specified fitness criteria and tested for empirical corroboration, can provide guidance for making the paradigmatic transition from homo economicus to real existing man and woman in a nonarbitrary fashion.

A society's economic arrangements arise to meet a variety of needs. In prehistoric environments means of survival, social norms, and even the cognitive and emotional equipment supporting behavior and social interaction would have evolved in congruent ways given the workings of processes of selection. By contrast, modern technical and institutional change occur on time scales in which certainly genetic predispositions, and to some degree also a heritage of normative orientations, are essentially givens. And institutional change is often driven by factors that make congruence with the needs of norm-reinforcement at most a secondary consideration. While patterns of small-group socialization and repeated economic interaction may be more favorable for inculcating values and for providing the ongoing rewards and benefits that support their long-term maintenance, the productivity advantages of large organizations, complex divisions of labor, individual mobility, and anonymous exchanges, may become driving forces behind change in economic arrangements, weakening the reproduction of socially beneficial norms. But a decline in the stock of desirable values may eat into the benefits of economic complexity. While recognition of such tendencies could lead to checks on excessive economic atomization, socially appropriate responses may not be forthcoming if individuals react to these trends according to private, rather than social, rationality. Unless some individuals -- be they religious figures, political leaders, philanthropists, or social scientists -- consider the interest of society as a whole and identify ways of making productively and allocatively superior arrangements consistent with a virtuous moral equilibrium, the system as a whole may be unsustainable, or may demand unacceptable trade-offs between life quality and material gain.

In truth, we are skeptical of claims that the temple of moral civilization is collapsing on our, and only our, generation. Alarm over moral decline may be as old as civilization itself. The metaphor of collapse may be a bit too dramatic. Yet our times are marked by levels of change in technology, attitudes, and life-style that are unusual for their sweep and speed, and that give such alarm a definite cogency. At the very least, we think that social scientists would not be earning their keep were they to treat such problems as simple fantasy, or as the responsibility of other disciplines and professions. Some economists, in particular, may feel tempted to see these problems as best left to psychologists, sociologists, or moral philosophers, supposing that it is the social, rather than the economic institutions, that require attention. We would argue that there can be no true understanding of social organization without a clear understanding of economic arrangements; that there is no clean separability of institutions into economic and noneconomic; and that institutions, including firms and markets, both affect and are affected by values. This, and the manifest potential of economic analysis, lead us to believe that the study of problems having both economic and moral dimensions can benefit not only from the economic approach in general, but also from uses of that approach which explicitly incorporate value endogeneity and the mutual influences of values upon institutions and of institutions upon values.

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1We thank Ken Binmore, Timur Kuran, Margo Wilson, and participants at the Conference on Economics, Values, and Organization, for helpful comments.

2See, for example, Putterman (1990), and Ben-Ner, Montias, and Neuberger (1993). 3Our definition of values is different, and perhaps narrower, than other definitions offered for the term. Hechter (1993, p. 3), for example, noting that there is no consensual definition of the term, defines values as relatively general and durable internal criteria for evaluation, distinguishing them from preferences which he views as more labile. Like Hechter and others, we will reserve the term "norm" for something "external to actors" or resulting from the interaction of a number of actors -- a usage that still permits us to say that the desire to adhere to a norm may be one of the individual's values or process-regarding preferences. Another definition takes values to be "principles, or criteria, for selecting what is good (or better, or best) among objects, actions, ways of life, and social and political institutions and structures" (Schwartz, 1993a). Rabin (1995) models values as constraints rather than arguments in the utility function. We return to this issue in Part II.

4That Adam Smith himself appreciated this point (especially in his 1759 book) has been emphasized by Sen (1987, 1993), among others. That cooperative behavior might be fostered by institutions other than or supplemental to markets is argued by Bowles and Gintis (this volume); a parallel point is made by Greif (1994).

5For a few examples, see Abreu and Rubinstein (1988), and Vega-Redondo (1994); for a general discussion, see Kreps (1990, ch. 6). 6The relationship between background variables and behavior remains to be investigated. In particular, it is not clear whether culture or education operate through individuals' values or their degree and nature of bounded rationality. 7Kreps (1990) discusses this issue, which he terms retrospection, as a variant of bounded rationality. At some level, the disagreement is only about terminology, whether we should characterize behavior as generated by self-interest, moderated by bounded rationality and retrospection, or by self-interest along with other- and process-regarding preferences. But the carry-over effect can be reduced to behavior consistent with the simple homo economicus assumption only at the risk of emptying that assumption of the content ascribed to it by most users.

8The question of what is being maximized -- payoffs or fitness -- remains unsettled and the two concepts are often conflated. 9See, for example, articles in the special issue on evolutionary game theory of *Journal of Economic Theory* (1992) and Weibull (1996). Guth and Yaari (1992) and Guth (1995) model the endogenous evolution of preferences; see also Fershtman and Weiss (this volume). 10Knight (1957, p. 270); also cited by Williamson (1985, p. 3).

11We adduce below some, mostly indirect, evidence about changes in values, behavior, and institutions. Evidence is lacking, in part, because of measurement problems of values (Hechter, 1993, and Fischhoff, 1993). An equally difficult problem stems from an identification problem: the behavior and institutions we observe in reality tend to reflect equilibrium outcomes, so that moral or immoral behaviors are not determined only by individuals' preferences, including values, and the economic constraints they face, but also by the

measures taken to limit their undesirable effects or enhance their desirable effects. For example, actual theft in department stores cannot be taken as a measure of the values held by the populace regarding the treatment of others' property, both because extensive anti-theft measures are available in stores, and because the extent of "moral" behavior is also determined by factors working through self-interest, so that the frequency of theft may also be affected by economic cycles that produces more or fewer needy people.

12Data from Vital Statistics of the U.S. which show that the proportion of children born out of wedlock rose from 3 to 18% among white and from 24 to 64% among black mothers, between 1965 and 1990 (cited by Akerlof, Yellen, and Katz, 1996).

13Census Bureau data show that in 1991, married couples with children accounted for only 26% of U.S. households, and that of households including children, 25% did not include a married couple. The proportion of households in the "married with children" category was over 40% as recently as 1979.

14See Akerlof et al. (1994), Palermo and Simpson (1994), Anderson (1990), Kotlowitz (1991), Lemann (1991), Massey and Denton (1993), Wacquant (1993), and Wilson (1987). Of course, changes in the family institution need not all be for the worse. Shifts toward gender equality are still applauded by most, those toward more choice in sexual matters by many, and the ability to leave a bad marriage must also not go unappreciated. Also, strong families may emphasize self-interest, or a narrow concept of altruism, thus failing to impart values of mutual responsibility and actually contributing to the further tilting of value systems toward unalloyed self-interest or narrow group-oriented interest.

15See Goodman (1995). Essentially the same points were made about this case in remarks by U.S. Labor Secretary Robert Reich on February 13, 1996.

16The director of psychological services at Swarthmore College, for example, recently argued that "increases in violent crime, weapon carrying, drug dependency, eating disorders, and youth suicide rates in recent decades are both reflected by and promoted by commercial interests. Addiction cultivation, whether to cigarettes, alcohol or other drugs, diets, or violence per se is extremely profitable for its purveyors" (Whitaker, 1993).

17See Easterlin and Crimmins (1991, p. 499); see also Conger (1988).

18An instance of the short term, economic variety is provided by Easterlin and Crimmins's (1991) argument that the increasing importance of private materialism during the 1970s and 1980s found in their study, as just cited, was "caused by a growing feeling of economic deprivation in the post-1973 period as real wages declined ..." A similar observation is made by Yankelovitch (1994).

19For instance, Bovasso et al. (1991) show that tolerance of "vices" was nearly as high in the 1920s as in the 1980s, and swings between "materialism" and other concerns may likewise show an alternating pattern over long periods. Similar swings and cycles in the family institution and behavior have been observed (Coontz, 1992).

20Concern about values has strengthened in other social sciences as well. See, for example, Aaron, Mann, and Taylor (1994), Hechter (1993), Bellah et al. (1991), and Etzioni (1992).

21Not all economists have dealt with human motivation and behavior in accordance with homo economicus assumptions. In particular, see Akerlof (1980, 1982), Basu, Jones, and Schlicht (1987), Frank (1988), Rotemberg (1994), Kandel and Lazear (1992), Hirschmann (1985), Rabin (1993), and even Adam Smith (1759), as noted earlier, along with others, have contributed much to alternative views of motivation and behavior.

22See McKenzie (1977), who draws heavily on Buchanan (1965), and on Olson (1971). See also Guttman et al. (1992). Evolutionary psychologist Donald Campbell uses similar reasoning, arguing that "for larger social units the precarious establishment of cooperative social units has been accompanied by fantastic transcendental belief systems, with rewarding and punishing reincarnations and afterlives promising individuals a net hedonic gain optimized

over a longer period than their immediate lives." He goes on to posit a naturally-selected proclivity towards "awed indoctrination" (Campbell, 1986:177); see also Burkert (1996).

23The difference between the characterization of preferences advocated here, and that of the neoclassical tradition, should not be exaggerated. We do think self-regarding preferences to be so important that the standard economic model which assumes a strict homo economicus will give a good account of behavior in a wide variety of situations. The salience of self-interest is also underscored by our observation, in section 2.d, that the inculcation and elicitation of other-regarding and process-regarding preferences often relies on appeals to self-regarding preferences. It might also be noted that the evolutionary perspective on preferences which we propose beginning in section 2.c, below, suggests that the grouping of preferences under separate categories of the sort we use here is artificial, however useful it may be for taking our first steps beyond the conventional approach.

24As noted by Ariel Rubinstein at the Conference on Economics, Values and Organization, there is a potential difficulty in applying maximization approaches when the method of maximization is said to be of concern but is not among the outcomes over which the maximand is defined. Clearly, what we have in mind is that some aspects of method may be included formally in the function to be maximized, or as constraints to maximization. In the former case, it may be better to think of the process as being among the outcomes that concern the actor.

25Campbell (1983, 1986) argues that ethics correspond to the way we would like others to behave, and that we accept the same strictures for ourselves at most as a necessary cost of getting them to do so. One reason we might accept this cost is that, insofar as we care how others regard us, we prefer to think of ourselves as moral individuals. Indeed, we may be inclined to suppress from consciousness any indications to the contrary (Wright, 1994). Our interest for the moment, however, is with the primitive fact of moral concerns, with theoretical explanations of their origins to be discussed later, in section 2.e.

26Mansbridge (this volume) notes Sen's emphasis on the importance of "counterpreferential choice," and goes on to argue that "both love and duty contrast with self-interest, and cannot be reduced to it." Our own suggestion of viewing human behavioral predispositions as inclusive of all three of these categories, somewhat more broadly construed as other-regarding, process-regarding and self-regarding preferences, may differ methodologically, but is in not substantively in conflict with her position.

27Additional illustrations of the impact of process-regarding preferences on behavior include the example wherein several dozen passengers on a vehicle caught in a flood in India in 1973 are reported to have drowned rather than escape by means of a rescue rope that had been used by passengers of a different caste (McKean, 1974, cited by McKenzie, 1977, p. 213). Other examples are the facts that orthodox Muslims and Jews would incur great costs to avoid eating pork, or eating at all on particular days. (Related examples from different cultures are provided by Darwin, 1871, pp. 99-100). "Progressive-minded" individuals will avoid voicing opinions that they deem politically unconscionable. And so forth.

28He may respond to the possibility of punishment if caught behaving dishonestly, or may seek, given the prospect of repeated interactions over time with the same group of economic actors, to build a profitable reputation for being honest (which may outweigh in his case the occasional benefits of dishonest behavior), etc. The following quote from a work of fiction illustrates the point well. Says Mr. Lander, the shipowner: "This business may not look very good on the front side. But on the back it is full of what they call ethics. And the two most important rules are: You don't cheat a customer. And you never cheat a fellow shipowner... You screw the state and the

authorities if an opportunity presents itself ... But you don't cheat a customer. Because you need customers to come back. And above all, you never cheat a broker. We shipping folks stick together. The way it works is, I have a customer who has a ship and you have a customer who has a cargo, and we bring them together. Next time it's the other way around. A ship broker lives off other ship brokers, who live off other ship brokers..." (Peter Hoeg, Smilla's Sense of Snow, Farrar, Strauss and Giroux, 1993, pp.200-201).

29This does not suggest that A must be a universal altruist to act in the way suggested in the text. The participation in the game puts A in a partnership of sorts with B, since A's fate is linked to B's fate via B's ability to block any rewards to A. Hence A may well believe that B, as her partner, should receive a reward according to the principle cited in the text; yet in the absence of a partner, she may decide to keep the entire amount x to herself. This may account for the finding that proposers act more selfishly in the "dictator game," where A decides how much to give to B, who is entirely passive (Hoffman et al., 1996).

30Kreps (1990:116-120) examined the consequences of another process-- regarding preference -- of not wanting to be taken advantage of (being a "dupe") -- for possible outcomes of the ultimatum game. His discussion suggests that it is not easy to deduce from one's behavior whether she is an ethical person, or just one who wants to make the point that she is not a dupe.

31Generally, anonymity of both A and B tends to generate outcomes that come closest to the situation in which A and B are self-interested rational actors. Face-to-face interactions among players familiar with each other represent the other extreme, where outcomes result most often in a near 50-50 division. Variations in these conditions are likely to be associated with differences in the relative intensities of the three categories of preferences discussed here.

32For an early statement of this point, see Becker, 1976. 33This prospect has not been missed by theorists of orthodox inclination; an even more neoclassical strategy is seen in models which generate seemingly unselfish behaviors by simply introducing a small doubt about whether some other agents may be of an unselfish or irrational type. See, e.g., Aumann (1990), and Kreps, Milgrom, Roberts, and Wilson (1982).

34To be sure, the number of "moral" actors may remain small after the endogenous inculcation of values has been modelled. For instance, Guttman (1996) provides a theoretical model in which it pays for parents to invest in a moral taste in their children, even when the probability of success is low. The existence of some genuinely or unalterably moral individuals make feigning such tastes profitable for the rest of the population. While this outcome has a ring of authenticity, we believe that a more realistic model would also allow for intermediate outcomes, with some children becoming somewhat moral, and with adults thus varying widely in their degrees of internalized versus opportunistic "virtue".

35We borrow the term "extended preference" from Paul Romer (personal communication). 36See, for example, Frank (1988), Rotemberg (1994), Bernheim and Stark (1988), and Weisbrod (1977). Models such as that of Guttman (1996) and of Fershtman and Weiss (this volume), in which a parent selects a desirable utility function for the offspring based on narrower utility grounds, are similar in this respect.

37Darwin was probably the most articulate proponent of the naturalist view of human tendencies, and as willing as anyone else to ground these tendencies in as few "primitives" as possible. However, even he found the description of all behavior as selfishly motivated to be unsatisfactory. After discussing self-sacrifice, he concludes that we cannot explain "the most noble part of our nature" by recourse to "the base principle of selfishness ... unless indeed the satisfaction which every animal feels when it follows its proper instincts, and

the dissatisfaction felt when prevented, be called selfish" (Darwin, 1871, pp. 98-99). The claim, often made today, that reducing every voluntary action to selfishness is tantamount to a tautology, seems to have resonated well with Darwin. This is not to say that consideration of self-interest alone is always an inferior point of departure for certain analytic purposes, or that it is always necessary to work with a full-fledged model of evolved human beings. But it is necessary to acknowledge what simplifications are made, why, and how they may affect the outcomes of a particular analysis.

38While arguing for the theory of evolution is probably unnecessary and beyond the scope of this paper, we may briefly paraphrase Buss (1995) who, in a review of the literature of evolutionary psychology, suggests that only three causal processes are thought capable of producing complex physiological and psychological mechanisms: evolution by natural selection, creation by a supernatural being, and seeding by extra-terrestrial organisms. Buss argues that while creationism is unfalsifiable and seeding theory pushes the required explanation to a different level, "[e]volution by natural selection, in contrast, is a powerful and well-articulated theory that has successfully organized and explained thousands of diverse facts in a principled way" (1995, P. 20). The evolutionary approach to behavior is thus "unlikely to be supplanted by another unless some radically new causal process ... is discovered to account for the complex adaptations that characterize humans and other species" (1995, P. 26).

39This is because the number of generations since the industrial, and probably even the agricultural, revolution, is simply too short to have permitted much natural selection to occur (see also the comparison of post-agricultural and overall human history in Douglass North's paper in this volume).

40It is only figuratively, of course, that one should think of genes as optimizing or even thinking. As Maynard Smith (1982:5) put it (in seeking to provide an analogy that allows using the terminology of intentionality in explaining evolution), "When calculating the path of a ray of light between two points, A and B, after reflection or refraction, it is sometimes convenient to make use of the fact that the light follows the path which minimises the time taken to reach B. It is a simple consequence of the laws of physics that this should be so; no-one supposes that the ray of light setting out from A calculates the quickest route to B."

41While the main contours of evolutionary theory are uncontroversial, many details are contested by theorists of various persuasions. However, differences among different versions of evolutionary theory have only a limited effect on our story of the evolution of preferences. 42Utilitarian theory was developed mostly before evolutionary theory (Bentham wrote in 1789, much before Darwin). Although J.S. Mill published his *Utilitarianism* in 1861 (in *Fraser's Magazine*), two years after Darwin's *On the Origins of Species by Means of Natural Selection*, Mill showed no awareness of Darwin's work. However, Darwin, writing *The Descent of Man, and Selection in Relation to Sex*, in 1871, discussed Mill's ideas favorably, although he thought that they are not sufficiently informed by evolutionary theory. Darwin thought that there is no evolutionary basis for the "Greatest Happiness Principle" (see Darwin, 1871, ch. III), yet he argued that "the social instincts ... no doubt were acquired by man, as by the lower animals, for the good of the [narrow] community" (Darwin, 1871, p. 103). This weak version of the "group selection" theory is now viewed as erroneous by many evolutionary theorists. Darwin held mostly an organism-centered theory (the concept of genes being unknown to him), and had difficulty going beyond a warrior-like characterization of humans, yet he believed that there are traits like altruism that persist and their existence baffled him scientifically. It has been conjectured that it was Darwin's difficulty (as that of many other scientists, until Hamilton, 1964) in explaining acts of sacrifice by an organism

whose survival depends on its own, not others', success, that led to his occasional recourse to the idea of group selection. See Cronin (1992) for a detailed discussion.

43It might be supposed that the parent makes present sacrifices for the offspring mainly due to the anticipation of a future personal return. Bergstrom (1996) reviews the evidence on this and concludes that both theory and empirical research suggest that it is not generally true -- calculated rates of return to parents being extremely low or negative.

44Let r be the degree of relatedness among two organisms, and assume $r = 1/2$ among parent and child, sibling and sibling, $r = 1/4$ among half-siblings, nieces, nephews, aunts, and uncles, $r = 1/8$ among first cousins. Then the logic of natural selection under inclusive fitness would favor propensities to sacrifice oneself for two or more siblings, for eight or more cousins, and so on, with appropriate adjustments for the remaining procreative and nurturing potential of those involved.

45See Hamilton (1964) and Bergstrom (1995); see also discussions in Dawkins (1989), Cronin (1992), and Wright (1994). In Hanson and Stuart (1990), natural selection of preferences over offspring's consumption is modeled as the solution to a problem of maximizing steady-state per-capita consumption, which is there equivalent to genetic fitness.

46Hirshleifer and Martinez Coll (1988) rightly caution against drawing overly strong inferences from the Axelrod's (1984) much celebrated work on the evolution of cooperation, pointing out that varying payoff structures and assumptions about the selection process among strategies can generate different strategy choices, or populations of mixed player types. Yet the indeterminacy of theoretical models and computer simulations needs to be viewed alongside accumulating evidence from psychological experiments and neuroscience, which seem broadly supportive of reciprocity theory. Although the exact mechanism remains unknown, for instance, an important element of cooperation appears to be the ability to recognize partners to past interactions, thus a memory for faces and actions associated with those faces. The human brain apparently has a capacity for such specific memory lodged in specific places, "the underside of both occipital lobes, extending forward to the inner surface of the temporal lobes. This localization of cause, and specificity of effect, indicates that the recognition of individual faces has been an important enough task for a significant portion of the brain's resources to be devoted to it" (Axelrod and Hamilton, 1981:1395). Hence it is likely that an inclination to cooperate with known others has been hard-wired in us, as has a suspicion towards strangers. Note the suggestion, however, that it is a desire to be perceived as a cooperator that will have been selected for, since a tendency to cheat and thereby conserve one's resources for oneself and one's kin when one is sure to get away with it, would in principle have been a favored trait. Cosmides (1989) argues that perhaps natural selection endowed us with an ability to search for cheaters through a procedure that detects violations of social rules, and finds experimental support for her hypothesis. For a readable discussion of the issue of reciprocal altruism, see Wright (1994, Chapter 9); see also Guth and Yaari (1992), which analyzes a game-theoretic model of the evolution of reciprocal altruism. We note, finally, that the importance of resentment as a marker of normative assessment, stressed by Daniel Kahnemann and Allan Gibbard in their separate remarks at the Conference on Economics, Values, and Organization, fits well with the basic argument about genetic selection of such propensities towards behavior among nonkin.

47In other words, the large-numbers problems identified by Buchanan (1965) and Olson (1971) might partly be avoided by the "hard-wiring" of traits acquired in a small-numbers environment. Compare also Bowles (1990) and Guttman (1991). Like other economists, we note that the term "reciprocal altruism," favored by some biologists, is something of a misnomer, for the logic behind it favors no

sacrifice except in the anticipation of at least equal future gains for oneself, in this respect contrasting with kin altruism which may dictate genuine "self"-sacrifice."

48There is incomplete agreement about the deviousness of homo economicus; for instance, Hirshleifer (1994), claims that her 'dark side' had not been adequately explored. This reading of received economics is consistent with Williamson's inclination (1975, 1985) to add "opportunism" to the usual assumptions about human behavior, as well as with Bowles and Gintis's (1993) argument that a more thoroughly self-seeking homo economicus will have its revenge on promoters of its more genteel textbook cousin by changing problems once assumed solved by markets into ongoing "contested exchange" relationships.

49On the other hand, we differ with Schwartz's (1993b) view that sociobiology, and by extension evolutionary psychology, simply provides a further instance of the primacy of the view that human beings are selfish. The "selfishness" of the gene and the selfishness of the person are quite different matters. 50Great caution is surely called for before proclaiming traits maladaptive, for a hidden source of fitness may await discovery. In our present ignorance it seems noteworthy, though, that genetic evolution has left us with imperfectly adapted backs, unneeded but frequently dangerous tonsils and appendixes, and such seemingly anomalous and presumably non-adaptive propensities as those towards homosexuality, schizophrenia, as well as suicidal impulses. A problem with some of the argumentation in evolutionary theory (the extreme "adaptationist" or "reductionist" position), it seems to us, is that it leaps from arguing that a certain mutation would have been beneficial, to concluding that the mutation must have occurred. This reminds us of the joke about the economist who discounts a friend's report that there is a \$20 bill lying before him on the sidewalk, insisting that had there been one there, it would have already been picked up by somebody. There is at best some probability that a hypothetically beneficial mutation (\$20 bill) will have occurred (been picked up) given a certain frequency of mutations (passers-by) and a certain period of time.

51See the discussion by Durham (1991), who argues that cultural selection operates primarily through the mediation of what he calls "secondary values," which are standards or criteria that were in their own turn selected for by the biological evolutionary process acting on the usual criterion of inclusive fitness. It is the biological-evolutionary selectedness of the secondary values which, according to Durham, causes most of our choices among cultural alternatives to be made in a fitness-enhancing manner. On the role of culture in the evolution of cooperation, see Boyd and Richerson (1985, ch. 7).

52On the ethics module, see Dennett (1994) ch. 16, and McGinn (1993). The propensity to anger at being 'wronged' by others, while itself 'irrational,' may also be seized upon by the rational self, which may calculate which threats to issue based on largely rational criteria, although the credibility of the threats depends upon an 'irrational' inclination to carry them out when they are ex post 'irrational' (see Frank, 1988).

53For example, the proportion of "collectivists" versus "individualists" seems to vary significantly across countries (Hofstede, 1980). As the cross-national experiment by Roth et al. (1991) shows, "generous" offers in ultimatum games are proposed and accepted in different proportions in different countries. Evolutionary models with multiple equilibria, and of course with different equilibria when the environmental parameters (e.g., the payoff functions) differ have also been derived. See, for instance, the hawks-doves model (e.g., Maynard Smith, 1982, and Mailath, 1992).

54As Campbell (1986:172) puts it: "Rationality in economic theory is primarily a rationality of the means whereby individuals ... maximize utilities. Especially where the behavior of persons is at issue, the content of the utilities is left open, unspecified by theory... [E]volutionary biology offers

the promise of theoretical grounds for predicting such contents, that is, predicting what sort of interests the products of biological evolution would be apt to have."

55Campbell (1989:177) writes: "We probably have an innate ambivalence (facultative polymorphism)...: an available repertoire of cooperative group solidarity and another one of individual optimization at the expense of the group."

56Durham (1991:430) lists imposition of cultural choices on some actors by others as one of the fundamental forces of cultural evolution.

Slavery and serfdom, and rules governing which side of the road to drive on, are a few out of numerous examples of institutions that were imposed by a few upon many to benefit few and many, respectively.

57Durham (1991) terms "opposition" the survival of a cultural trend despite its negative contribution to genetic fitness, and asserts that such exceptions to the general rule of cultural evolution are in fact observed in certain instances.

58Young (1996b) suggests the following examples of common events: a news item (Rosa Parks refuses to sit in the back of a bus), a speech ("I Have a Dream"), or a new theory (Das Kapital).

59For various perspectives on the evolution of institutions, see Schotter (1981), Ullmann-Margalit (1977), North (1990), Schlicht (1995), Sugden (this volume), and Young (1996a and 1996b). On organizations, see Alchian (1950), DiMaggio and Powell (1983), and Nelson and Winter (1982). For analysis of organizations that emphasize the dependence of organizational survival on individual calculations, which in turn are determined by individual values, see Ben-Ner (1987 and 1988), and Hansmann (1996).

60Campbell (1983), as noted earlier, suggests viewing morality as the set of rules to which one wants others to subscribe, and which one will accept for oneself also if their doing so requires it. Marx depicted morality as the rules that the ruling class prescribed for the ruled, to be followed at its own convenience only.

61In a recent decision, the Tennessee legislature recommended that the "ten commandments" be posted in schools and state agencies; and in communist countries, moral exhortations were displayed in various media.

62The effects of institutions and organizations on the preferences of adults are seldom discussed, reflecting the assumption that past their (early) youth, individuals are too old to learn or unlearn anything in the realm of values. More often, the implicit assumption is that adults hold the desirable values, and the only problem is to get them to belong to traditional families to transmit these values to their offspring. It is unclear that either assumption is correct.

63The effectiveness of observation as a source of change in preferences is suggested by the findings of Bunn et al. (1992). They found that "those students who saw others cheat had an increase in the probability of having cheated in college of .41 ... [and] ... a 10 percentage point increase in one's expectation about what proportion of other students are cheating was associated with an increase in the probability of having cheated in college of .10." Unfortunately, self-reported cheating, and self-reported observations and expectations about others cheating, are not externally verified in this study, so correlations due to desires for moral self-justification cannot be ruled out.

64Fehr and Gaechter (this volume) illustrate the importance of behavior grounded in individuals' reciprocal instincts. Fehr and Tyran (1996) also demonstrate the presence of interactions between institutional setups and the scope for fairness-infused (reciprocal altruist) behavior, by showing that reciprocity can play a big role when contractual incompleteness is built into experiments. And Axelrod (1986:1105) writes: "The actions of others provide information about what is proper for us, even if we do not know the reasons."

65The currencies of self-interest and of altruism or virtue may not be smoothly interchangeable, as when reliance on incentives that appeal to self-regarding preferences seems to crowd out behavior based on other- and process-

regarding preferences (Hirschman, 1985, Frey 1993 and this volume). However, this crowding-out phenomenon with stable preferences does not conflict with the possibility of inducing preference change towards desirable other- and process-regarding preferences by appealing to self-interest.

66Bowles and Gintis, and Montias, both in this volume, consider cases, involving communities of larger size, in which much the opposite occurs. Campbell (1983:35) considers "a double standard of preaching, an altruistic morality for exhortation to others, a self-serving one for own offspring" but he conjectures that "in the long run such a system would not work to produce complex social coordination, even though it would end up with the altruistic preachings heard by the offspring generation being many times more numerous than the selfish ones."

67Guth (1995) finds that when there is a lot of uncertainty about the types of individuals with which one interacts, the evolutionarily stable strategy is not necessarily desirable (in the sense that beneficial reciprocal behavior will not arise).

68The Hutterite colonies in Canada succeeded in the transmission of preferences through cultural channels for more than four hundred years through organizational design, chiefly isolation and de facto emulation of genetic reproduction. After attaining a certain size, a Hutterite colony splits into two halves consisting of identical populations in terms of detailed demographic and personality characteristics, in a fashion that has been characterized by evolutionary theorists David Sloan Wilson and Elliot Sober (1994:604) as follows: "The similarity to the genetic rules of meiosis could hardly be more complete." The inculcation of other-regarding preferences (selflessness, solidarity) is emphasized in various Hutterite practices, presumably because in the absence of such practices Hutterite children would be more selfish than what is regarded as necessary to ensure the continuity of the colonies in the desired form.

69For example, Trivers (1983) and de Waal (1996) discuss cooperative tendencies in baboons, chimpanzees, dolphins, and whales.

70At least some of the hard work of employees in large Japanese firms might be explained by the fact that a large part of their compensation takes the form of bonuses (Freeman and Weitzman 1987, Aoki, 1990). But since repeated-game models of self-interested behavior show that the high-effort outcome of profit sharing is only one of a multiplicity of possible equilibria. Since an equilibrium represents a set of endogenously developed norms (as Axelrod, 1986, argued), cultural and normative factors can still be assigned a role in selecting just how efficacious such profit sharing really is (Weitzman and Kruse, 1990, and Weitzman ad Xu, 1994).

71Another negative externality of (perhaps privately optimizing) employers who deplete, rather than invest in, employees' moral capital, is that society at large may be harmed by the negative attitudes that employees develop towards other people and towards civic behavior in general (see the comments made by interviewees in The New York Times's series of front-page articles on "The Downsizing of America" that appeared daily between March 2 and March 9, 1996).

72See Lindbeck (1995). Similar points can be made with respect to nonpayment of taxes and other socially disapproved acts.

