

The Human Side of Economic Analysis:
Economic Environments and the Evolution of Norms and Preferences

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1 ECONOMIC THEORY AND CONTEMPORARY SOCIAL PROBLEMS

From its inception conventional economic theory was designed to deal with the production and consumption of marketable goods and services. With the growth of the welfare state and the need for demand management in the post World War II period, economic theory broadened its perspective to include public goods and a state sector, considerably improving its ability to deal with the role of government in affecting economic stability, growth, and equity. But economic theory today faces a novel set of social problems for which it remains ill-prepared. This research project addresses a key element in the underlying structure of economic theory contributing to its current weakness: its representation of the individual human actor.

Conventional economics uses a *rational actor model* that treats the individual as a self-interested utility maximizer with preferences over a narrow range of personal consumption items. Preferences in the rational actor model are moreover considered as determined outside the economic system and unaffected by the individual's economic behavior. As we document below, a considerable body of empirical evidence contradicts this view: people are motivated by duty and obligation as well as utility, they have preferences over the well-being of others (they are both altruistic and vengeful), they are concerned with issues of equity and dignity in interpersonal relations, their preferences are determined in part by the character of the economic institutions within which they operate, and their well being depends on the quality of their social relations and the extent to which they have developed their personal capacities, not only on the quantity and quality of the goods and services at their disposal.

Ignoring these aspects of human preferences doubtless has served economic theory well in dealing with the traditional problems of state and market. But the same cannot be said concerning its cogency in dealing with such contemporary social concerns as

crime, drug abuse and other forms of socially pathological behavior, environmental quality and sustainable growth, the public perception of morality and fairness in the welfare state, the tendency for markets and the welfare state to undermine communities and the family, the role of incentives in affecting population dynamics, and other problems in which economic policy is implicated either as cause or potential cure.

2 THE UNASKED QUESTION IN ECONOMICS: WHERE DO PREFERENCES COME FROM?

Economists currently make policy recommendations based on a model of the economy in which individual preferences are determined through social and biological processes that are outside the economic system. In effect, traditional economic theory recognizes that individuals produce goods and services, but does not recognize that the economy produces people, their preferences, and their values. Thus economic theory does not recognize that economic institutions and policies should be judged not only according to the goods and services they engender, but types of personal development they foster and reward. As a result, economists thus systematically undervalue policy approaches that either draw upon the explicitly normative resources of agents (e.g., altruism, reciprocal altruism, and other forms of cooperative behavior), or rely upon changing norms in directions favorable to the solution of economic problems.¹

Until recently the liberal ethic of *de gustibus non est disputandum* reigned supreme—some two decades ago Paul Samuelson, for instance, singled the notion that “some preferences are better than others” (Gintis, 1972) for criticism in his Nobel Prize address, on grounds of its illiberality. Hence until recently reasonable observers would have assessed the receptivity of mainstream economists to dealing with the impact of preferences on social welfare as meager at best.

However the notion that some preferences are superior to others in their capacity to contribute to individual well being and to promote social welfare has been compellingly argued from a variety of approaches (Elster, 1979; Sen 1982,1985; Doyal and Gough, 1991), and no longer bears the illiberal connotations once attributed to it. On the contrary, social theorists and policy makers, not to mention citizens and voters, are increasingly concerned about the preferences people have, given the ostensible breakdown of civility, decline of community and traditional morality, and rise of social pathology exhibited in the advanced economies. These concerns help explain the lively interest economists have shown in the recent work of Gary Becker and his coauthors, who attempt to reconcile addictive behavior with the rational actor model (Becker and Murphy, 1988; Becker et al., 1994).

This project intends to investigate the impact of preferences on individual and social

¹This weakness of traditional economics is analyzed in Gintis 1972, 1974; Bowles and Gintis, 1986).

welfare in two different directions. First, there is strong and compelling evidence that preferences are not formed outside the economic system, but rather are constituted through the interaction between individuals and the face-to-face communities to which they belong. Thus to the extent that economic policies weaken communities, they weaken personal development as well. This argument has been carefully developed outside of economic theory (Anderson, Chiricos, and Waldo (1977); Ellickson (1987); Tittle (1980); Putnam (1994), Taylor (forthcoming). Within economics, Bowles (1994) and Bowles and Gintis (1995) have developed evolutionary models of the place of community among the governance institutions of modern economies (other governance institutions being markets and states). In these models, communities represent distinct cultural environments characterized by information structures, systems of sanctions and rewards, and learning opportunities unavailable in other forms of governance. Communities thus provide the context for repeated, face-to-face interactions among agents that transmit and stabilize norms and reputations, while disciplining agents in a way not available to the relatively anonymous institutions of state and market. We intend to support further development and testing of these models.

A second direction of research on preference change involves assessing under what conditions and to what extent individual preferences and individual welfare coincide. Many students of modern social life believe that people in general overstate the importance of individual income in promoting personal welfare, and systematically understate the importance of other economically relevant social goods, such as personal dignity, rewarding work, happy family life, and strong ties to community (Lane, 1993). This issue is of extreme importance, because the economist's stress on income as a source of well being leads to an overarching emphasis on economic growth as a measure of social welfare, in situation where the resource-using character of economic growth is inimical to environmental balance and may lead to excessively inegalitarian economic policies (Oswald 1994,1995). Easterlin (1974, 1995) and Blanchflower, Oswald, and Warr (1993) suggest that economic growth does not correlate strongly with social welfare, both because income is a relatively weak predictor of well-being except for the poor, and because individual welfare depends on one's position in the income distribution rather than one's absolute level of material affluence.

3 PROSPECTS FOR A BROADER MODEL OF HUMAN ACTION

Three developments make us optimistic that a serious attempt at broadening the economic model of individual action can succeed. The first is that as economists have applied the rational actor model to an ever-widening range of individual behavior, its limitations have become increasingly evident. The most reasonable setting for the rational actor model is the consumer in the supermarket choosing a commodity bundle subject to a budget constraint. But if it is generally valid, the model must also apply

to such socially complex areas as the cooperation, conflict, and equity in the firm; criminal behavior; marriage, divorce, family size, and the care of children; education and skill-acquisition, long-term trade-offs between commodity consumption and environmental quality; voting behavior and the organization of the public sector; addictive behavior; as well as gender, racial, ethnic, and religious discrimination. The traditional rational actor model is simply not suited to modeling such areas of economic life.

The second development is a growing concern with what Robert Putnam (1994) calls an “erosion of social capital.” This concern, which is evident across the political spectrum, has undermined the relevance of the assumption that preferences are fixed and exogenously given. Two decades ago the liberal ethic of *de gustibus non est disputandum* reigned supreme. However the notion that some preferences are superior to others in their capacity to contribute to individual well being and to promote social welfare has been compellingly argued from a variety of approaches (Elster, 1979; Sen 1982,1985; Doyal and Gough, 1991). This notion no longer bears the illiberal connotations once attributed to it. On the contrary, social theorists and policy makers, not to mention citizens and voters, are increasingly concerned about the preferences people have, given the ostensible breakdown of civility, decline of community and traditional morality, and rise of social pathology exhibited in the advanced market economies.²

The third development boding well for a broadening of the rational actor model is the large and growing body of evidence about human behavior that is emerging from laboratory experiments. This work has its intellectual origins in experimental psychology. The contributions of psychologists such as Kahneman and Tversky are now widely, if perhaps begrudgingly, recognized by economists. Within economics, the field of experimental economics has become increasingly influential in affecting the research priorities (Smith and Williams, 1992; Davis and Holt, 1993). This research has selectively supported and contradicted many of the central models traditionally employed by economists. In particular, experimental economics has confirmed that people care about social relationships not captured in the traditional model of the consumer, and they routinely behave cooperatively in situations where the rational actor model predicts non-cooperative behavior.³ It has also demonstrated that people will consistently give up resources in order to punish others, in situations where standard economic theory suggests that it is irrational for them to do so.⁴

Prior to the development of experimental methods for investigating the nature of preferences and motivation, economists feared that any attempt at a scientific explo-

²These concerns may explain the lively interest economists have shown in the recent work of Gary Becker and his coauthors, who attempt to reconcile addictive behavior with the rational actor model (Becker and Murphy, 1988; Becker et al., 1994). For an experimental test of the rationality assumptions implicit in this model, see Fehr and Zych (1994).

³See for instance Caporeal (1987) and references therein.

⁴See for example the discussion of the ultimatum game in Davis and Holt, (1993).

ration of the human actor would degenerate into vague philosophizing and argument by introspection. Now it is possible to get solid, reproducible evidence on a wide variety of conjectures about preferences and motivation.

4 THE PREFERENCES PROJECT: GOALS OF A RESEARCH INITIATIVE

We see three goals for our proposed research initiative. The first is to establish a provisional model of human action that can be used to address the related questions of how economic activity affect the norms, preferences, values, and capacities of human agents, and how norms, values, and capacities affect the structure of economic institutions, the nature of economic interactions, and the observed preferences of economic agents.

Such a provisional model would be consistent with the fact that people often choose to limit their behavior to the normatively acceptable, they seek to develop as well as to satisfy preferences, and they recognize personal commitments and moral obligations to other agents as bases for action independent of the welfare implications of so doing (Sen, 1977; Basu, 1986a,b; Anderson, 1991). It would also be consistent with the presence of framing effects in people's choice among alternative actions, since such effects often involve adding a normative judgement to a welfare assessment of the potential benefits of alternative choices.⁵

A second goal would be to establish a stronger basis for input from other social sciences in addressing economic problems. Any model of human action that could be developed and deployed in the near term would be highly provisional. Evidence about the kinds of refinements that will be required could come from related disciplines. The role of experimental psychology has already been noted. Contemporary research in social psychology may also contribute to a theory of endogenous preferences and commitments. For instance Melvin Kohn and his collaborators (e.g., Kohn et al., 1990) shows that such central personal values as valuation of autonomy and reciprocity in social interchange depend on an agent's position in the occupational structure, and in particular to the nature of the agent's work relations and the agents hierarchical position in the organization of work. Other evidence could come from fields such as anthropology and biology.

One related line of research treats norms and preferences as elements of culture and draws upon the extensive biologically inspired models of Cavalli-Sforza and Feldman, and Boyd and Richerson. To integrate these models with economic theory, the content

⁵By a 'framing effect' we mean that the relative desirability of states of affairs may depend not only on the differential contribution of these states to individual preference satisfaction, but on the way the choice situation is presented to the individual, the economic position of the individual at the time of choice, and the range of non-chosen alternatives available in the choice situation. This definition is an extension of the usage in Kahneman and Tversky (1984) and (Kahneman, Knetch, and Thaler, 1991).

of norms and preferences, as well as their rates of diffusion, should be treated as endogenous variables that can be modifiable by economic institutions, perhaps through their impact on the structure of family, work, and community life. These models can be supplemented by historical and ethnographic evidence on the joint development of normative systems and economic institutions. An object here would be, having surveyed available historical and anthropological material, to develop a tighter analytical framework facilitating the assimilation of these insights into economics.

Karl Polanyi's sweeping claims concerning the impact of market society on cultural evolution, for example, have had little impact on economic reasoning, in part because no attempt was made to specify the mechanisms responsible for the changes in question. By contrast, Greif's work (1993, forthcoming), on differences in the normative structures of Maghribi and Genoese trading association, develops an adequately articulated model. His work identifies mechanisms by which community organization determines which among a plethora of possible norms will obtain, and thus will be followed and defended by community members. The efficiency and adaptability of the resulting community, on the other hand, determines whether these norms will reproduce and expand over time.

A third goal of the initiative is to develop the joint analysis of economic institutions and human action. Assumptions about institutions and about human action have tended to be developed independently. For some types of problems, independence may be a harmless simplifying assumption, but in other contexts the interaction between preferences and institutions must be the central focus of the analysis. Preferences determine the kinds of institutions that are viable, and institutions influence the kinds of preferences that people develop and express.⁶

It may seem that achieving these three goals will force a dramatic break from traditional economic analysis and that these strategies for broadening and endogenizing preferences would displace rather than enrich the rational actor model. But given the many explanatory successes of traditional economic theory, any new line of work that forced economists to abandon the work that has come before would have little chance of catching hold in the economics profession. However many of the insights suggested above can be captured formally by what we will call the *extended preference approach*. This approach is a relatively simple extension of the traditional rational actor model, but one that gives it much added flexibility. It is to this approach that we now turn.

⁶For research in this area, see (Bowles and Gintis 1976,1986,1993a,1995), Ostrom (1990), Weissing and Ostrom (1991), Seabright (1993), Cavalli-Sforza and Feldman (1978,1981), Chen, Cavalli-Sforza and Feldman (1982), Boyd and Richerson (1985,1988,1992,1994), Bowles (1994).

5 CONNECTING WITH TRADITIONAL ECONOMIC ANALYSIS

Economic theory has shown that under plausible conditions preferences can be represented by a utility function $U(x)$ where x is list of goods and services demanded and supplied. The conventional treatment, which we shall call the ‘narrow preference assumption,’ places two strong restrictions on this function and its arguments.

- **Utilitarian Preferences:** The arguments in the list x comprise a narrow class of “consumption activities” involving the direct possession and enjoyment of material goods and services. Examples include food (which forms the metaphorical basis for most of the discussion of utility and consumption), direct sensations of warmth and cold, and other sensory stimulations that relate to the individual independent of the individual’s social setting or interpersonal relations.
- **Fixed Preferences:** Consumption choices at one date do not affect the utility agents receive from choices at another date. In particular, preferences do not develop over time according to the particular historical experiences of individuals, their past consumption choices, and the social contexts within which their choice activity has taken place.

Consider, for example, the way conventional economic theory represents the action of agents faced with the following Ultimatum game. There are two players in the game, Proposer and Decider. Proposer is given \$100 with the following instructions. “You are to offer Decider a share of the money. The amount $\$x$ that you offer Decider is totally up to you. If Decider accepts, Decider receives $\$x$ and you receive whatever is left over. If Decider rejects your offer, neither of you receives anything.” The typical outcome of this game, which has been staged many times in experimental economics, is that Proposer offers something close to a 50-50 split and Decider accepts. Moreover, when Proposer offers Decider sufficiently less than half the total, say \$15, Decider will frequently reject the offer, apparently preferring no money to some money in an uneven split. Finally, the amount offered by Proposer and the minimum amount Decider will accept often depend on the previous experience the players have had with the game, even when the particular identities of Proposer and Defender are unknown to one another.⁷

In such a situation, the narrow preference approach predicts that Proposer will offer Decider the smallest possible amount (say one cent), and Decider will accept. For according to the Utilitarian Preference assumption, Decider prefers one cent to nothing, and Proposer knows this. But could not Decider reject the offer simply to strengthen her disposition to reject ‘unfair’ offers, and hence improve her position in future strategic situations, or to maintain a more positive self-concept as effective

⁷For an overview and references to experiments of this type, see Davis and Holt (1993), Ch. 5.4.

interpersonal actor? If so, Proposer would be prepared to offer a larger share. But according to the Fixed Preferences assumption, this contingency is not available.

The extended preferences approach, by contrast, admits the observed behavior, recognizing that, there is no *a priori* basis for limiting ourselves to the utility function arguments favored by traditional economics. Rather, decisions concerning the proper arguments must be made on the basis of evidence. The extended preference approach allows both the possibility that Defender might reject an offer because the satisfaction of avoiding falling on the short of an unfair exchange is greater than the \$15 she would gain by assenting, or that Defender would reject the unfair split to reinforce her disposition to drive hard bargains in the future when faced with the temptation to accept short-term gains that cannot be justified in long-term perspective. Formally, we can represent this extension by writing utility as $U(x, z)$, where x stands for money and z stands for a new list of possible arguments concerning interactions in ultimatum games that are neglected in the narrow preferences approach.

The claim that empirical evidence should guide the choice of arguments in the utility function should be obvious, but in fact has been generally rejected by economists. There apparently exists methodological taboo of unknown provenance forbidding any scientific investigation of this type. The usual justification of this taboo is that economics is not concerned with the origin of preferences but only their satisfaction. But this justification is clearly flawed, since to the extent that economic activity transforms preferences, and preferences include not only the outcomes of economic activity but the character of economic interactions themselves, the causes and content of preferences are directly relevant to both behavior and welfare. Of course this taboo may have been helpful to the extent that it kept economists from engaging in discussions of preferences that were grounded only in introspection. But since the maturation of experimental economics and sophisticated econometrics, the benefits of the narrow preferences approach have disappeared. As the body of evidence grows, methodological objections to the scientific investigation of preferences are fading.⁸

The second extension beyond the narrow preference model is to let consumption today influence both utility and choices tomorrow. This intertemporal interaction is mediated by *state variables* that enter as arguments of the individual's utility function. The use of such state variables expresses the notion that people derive welfare not only from their consumption activities, but from the way in which they have developed their personal capacities—cognitive, physical, aesthetic, spiritual, emotional, and other—to derive welfare from a given array of alternative consumption bundles.

In the narrow preference approach, preferences over consumption variables are invariant over time. In the extended preference approach, by the use of state variables,

⁸For research using the extended preference approach, see Gintis (1972, 1974), Becker and Murphy (1988), and Becker (1994).

the derived preferences over consumption bundles can develop over time as the relevant state variables change in response to life history. For instance, increased exposure to a good in the past may lead to increases in the appreciation of the good in the present. State variables have their most important economic effects through interaction effects with future consumption choices of this type.

For instance, by virtue of their evolutionary origins, human beings have capacities to interact with their natural environments in varied and highly welfare-relevant ways (Kellert and Wilson, 1993). The various capacities to interact with nature are thus state variables, the development of which depends on the individual's past history. These state variables then strongly affect people's evaluation of the benefits of environmental sustainability and their personal abilities to enjoy the natural world around them. Moreover, since the capacity to enjoy the natural world depends on one's past history of interaction with this world, environmental destruction has a tendency to become a self-justifying process: the paucity of fulfilling interactions with nature leads to state variables in people's preference orderings that devalue the natural environment, which in turn leads to economic policies promoting environmental destruction.

Conventional economic theory is ill-equipped to handle policy questions in this area, by virtue of its assumption that preferences are exogenously given and unchanging. For conventional theory can put a monetary value on our valuation of the natural environment, but cannot put a value on how the natural environment alters the state variables in our preference orderings so as to enhance people's capacities to interact with and derive welfare from their natural environments.⁹

An important effect of the extended preference approach is to open research linkages with the other social, behavioral, and biological sciences precluded by the narrow preference framework. In particular, state variables can capture developmental influences, and a broadened set of arguments in the utility function can capture some of the richness of interpersonal interactions studied by social psychologists and anthropologists. Approaching behavior from the perspective of the extended preference framework allows economists to conclude that some of the most important variables in a person's utility function are determined in social interactions and institutional contexts. This perspective is wholly lacking in the narrow preference approach, which considers the economic actor in isolation from his social environment.

⁹It is tempting to defend the conventional theory by considering a state variable to be a *choice variable* under the control of the individual. However as this environment example suggests, some of the most interesting applications of the extended preference model come in cases where the social conditions affecting state variables are *not* under the control of the consumer, but are products of the communities and social relations into which the consumer is ineluctably drawn in the course of economic activity. It is precisely this larger context of economic relations that must be assessed and justified by economic analysis, and this is impossible in the conventional approach.

At the risk of sounding excessively optimistic, we believe that one can look down this path and see the outlines of an integrated body of behavioral and social science. Such a movement towards the integration would bring the behavioral sciences into line with comparable movements in the natural sciences over the past several decades, which have witnessed the forging of deep linkages between physics and astronomy, physics and chemistry, as well as chemistry and biology. Economics, by contrast, has steadfastly held to the older notion that the integrity of a scientific discipline is measured by its degree of isolation from other disciplines.

As in the physical sciences, different relatively self-contained bodies of theory will continue to operate along parallel tracks, starting from different basic units of analysis and often focusing on distinct domains. Nevertheless, there will be a well established communications protocol that allows results from one domain be deployed in others. Unresolved problems in one domain can also be passed back to another that might be better able to address it. In this way, we can achieve the most efficient division of intellectual labor. Ultimately, psychology should be able to establish basic results about human nature. Sociologists, political scientists, and anthropologists should be able to use these results to guide their investigations of groups of people who interact in specific contexts. Economists should be able to use them in their study of games and markets. Puzzles identified in these domains could be passed back to psychologists. We would then be able to avoid situations, unfortunately common at present, in which psychologists run experiments that economists ignore because they cannot see how even to begin to incorporate the results into their theoretical structures, and economists run experimental investigations of basically psychological questions whose fundamental importance is unappreciated by experimental psychologists.

6 POTENTIAL APPLICATIONS TO SOCIAL POLICY

We expect broader and more accurate models of individual choice to resolve anomalies in standard economic theory and to lay a more secure foundation for economic and social policy. Some relevant applications of our research lie in the following areas:

- **The Public Perception of Economic Policy:** Economists cannot understand why seemingly irrational criteria are regularly deployed in public discussions of economic policy. For instance, politicians and voters do not generally assess tax and transfer policies according to the equity of the *ex post* distribution of income, as would be suggested in the conventional model individual choice, but rather as deviations from the pre-given market-determined distribution of income. Similarly, ‘hidden’ sources of government revenue, such as inflationary finance, debt finance, and value-added taxes, are more palatable to the public than the more ‘visible’ income and sales taxes. Moreover, users fees and ‘sin taxes’ are more

widely tolerated than taxes on income, property, and profits. The conventional model of individual choice of course suggests that people should care only about the ultimate incidence of taxation, and not about the particular means used to arrive there.

Equally mystifying in traditional economics is the fact that the public is more sensitive to the *loss* of jobs that occurs through firms' relocation decisions than they are the corresponding *gains* of jobs at the new location.

The policy choices of voters may be explicable in terms of a model of individual choice in which norms act as constraints on behavior rather than as arguments of utility functions. Moreover, there is a large and growing literature in experimental psychology and economics from which these and related anomalies in the public assessment of economic policy may be understood: the 'endowment,' 'status quo,' 'loss aversion,' and other framing effects identified by Kahneman and his collaborators.¹⁰ If this is correct, the theory of economic policy should be revamped to take into account these apparently ubiquitous dimensions of human preferences and values. The methodological barriers to carrying out this project disappear if we move from a 'narrow' to an 'extended' conception of preferences, as outlined in the body of our proposal.

- **Undervaluation of Environmental Protection in Traditional Economics**

Economic theory has developed sophisticated measures of the benefits and costs of social policy based on the notion that individual welfare is a function of marketable commodities. While this theory has a catchall residual category—social goods—for influences on welfare that are not captured in marketable commodities, there is no systematic development of the content of non-marketable contributions to welfare. One clear example of non-marketed contributions to welfare is the natural environment, which has become increasingly threatened in recent decades. The destruction of the natural environment often flows from unrestrained market forces, but the lack of proper restraint is justified by traditional economic theory, which ignores issues of environmental degradation and places no value on ecological preservation or biological diversity.

A broader model of individual welfare may be a key element in reorienting the economic theory of environmental policy. First, an extended preference approach recommends including arguments in individual utility functions not according to their marketability, but rather according to their contribution to individual welfare and their capacity to influence state variables that affect future individual behavior. According to a considerable body of research (see, for instance Kellert

¹⁰See for instance Kahneman and Tversky (1984), Kahneman, Knetsch, and Thaler (1986, 1991), and references therein.

and Wilson (1993) and references therein), environmental variables in fact affect individual welfare to a degree and in ways not captured in traditional economic models.

Second, one of the standard economic practices most detrimental to strong environmental protection policies is that of discounting future costs at a rate equal to that which individuals use for discounting future monetary costs and benefits in market transactions. Yet there is compelling evidence that individuals may be 'irrationally myopic' in discounting future monetary costs and returns (Fehr and Zych, 1994). If so, a considerably lower discount rate should be used, and the proper way of revealing the correct rate may be a social processes (for instance, a democratic political process) rather than a market process.

Third, a broader conception of welfare of the type developed in this project recognizes that individual *preferences* and individual *welfare* may systematically diverge, both because of genetic aspects of the way human beings express their preferences, and because of informational asymmetries and biases preventing individuals from appreciating their real interests. If this is true, economists should include in dealing with environmental policy recommendations that individuals reassess their environmental priorities, or that social forces leading to the systematic misestimation of the impact of environmental conditions on individual welfare be corrected.

- **Taxation vs. Prohibition in Environmental Protection:** Modern welfare economics argues that market transactions that negatively affect the environment (producing undesirable 'bads' along with the desirable 'goods') should be taxed rather than prohibited, on the grounds that the proper level of taxation will appropriately limit the aggregate level of the 'bad,' while allocating the production of a 'bad' efficiently among agents in the economy. The public, by contrast, often prefers outright prohibition of a 'bad.' This seemingly irrational preference can be explained in a model in which prohibitions lead agents to change their preferences and norms in a manner that disfavors the production of the 'bad,' thus reducing the regulatory burden on the state, while taxing the 'bad' reduces the issue in the mind of the decision-maker to a simple economic calculation without moral dimensions. Hirschman (1985) argues just this position:

Economists often propose to deal with unethical or antisocial behavior by raising the cost of that behavior rather than by proclaiming standards and imposing prohibitions and sanctions... A principal purpose of publicly proclaimed laws and regulations is to stigmatize antisocial behavior and thereby to influence citizens' values and behavior codes. This educational, value-molding function of the law is as

important as its deterrent and repressive functions.

While the conventional model of individual choice precludes this explanation, adding preference endogeneity and normative motives as bases for individual behavior may allow us to distinguish those cases in which the efficiency gains from optimal taxation outweigh the transformations of preferences and commitments that flow from prohibitions and sanctions.

- **Punishment and Social Capital in the Regulation of Socially Undesirable Behavior:** Economists have generally proposed changes in rewards and punishments to deal with such socially pathological behavior as crime, drug abuse, irresponsible parenting, graft and corruption. Indeed, such measures are the sole available policy instruments in the repertoire of conventional economic theory. Yet steep increases in the sanctions against some forms of antisocial behavior, such as crime and drug abuse in the United States, have not reversed the behavior, and increasing sanctions in other areas, such as irresponsible and ineffective parenting has undesirable side-effects, including harming children and disrupting family units.

Moreover, when we look across countries or over time, we observe wide variation in rates of criminal activity that do not seem to be accompanied by comparable variation in the levels of punishment imposed by the criminal justice system. The broader notion of preferences outlined here provides a framework that can be used to investigate the elements that are missing from the conventional, fixed-preference analysis of crime. Just as an individual's consumption of food or drugs in the past can influence his preferences for these goods today, aspects of an individual's life history can explain the attitudes (or values, or preferences) he or she expresses toward various types of criminal or antisocial behavior. Such an approach forces us to think about the factors that influence these aspects of preferences.

The role of community may be central in this process. Indeed, Putnam (1994) has observed that the incidence of antisocial behavior can be predicted by such concrete measures of the strength of community ties as the average number of neighbors an individual can identify by name. This suggests that an alternative to using governmental sanctions on individual behavior is the strengthening of those community institutions that directly affect the level of social morality exhibited by its members.

The concept of 'community,' however, does not appear in conventional economic theory, which has no consistent place for social institutions between the individual and the state (Ostrom, 1990; Bowles and Gintis, 1995). This absence goes beyond the conventional conception of the individual, but is intimately related to this

conception, since individual norms and values are likely generated, stabilized, and transformed, through the various ‘communities’ in which the individual economic agent participates (Bowles and Gintis, 1986, 1995).

- **Fairness, Wage Setting, and Unemployment:** As Akerlof (1980, 1982) and others have stressed, the wage setting process, and by implication equilibrium levels of unemployment, may be affected by the normative dispositions of employers and employees concerning fairness and reciprocity. Models of the employer-employee relationship (Bowles and Gintis, 1993b) hold that worker effort, and hence productivity and wages, depend on worker commitments and standards of fairness. Bowles and Gintis (1976) uses such agency-theoretic reasoning to explain an important anomaly in human capital theory: the fact that the return to schooling cannot not be explained in terms of the traditional skill and cognition measures relevant to a technological conception of worker productivity, but rather depend on worker attitudes and values as well.

The conventional model of the individual does not allow that motivational characteristics and interpersonal skills may be important sources of worker productivity. As a result the importance of such factors is systematically undervalued in empirical research and policy analysis. Similarly, economists may recognize informally that differences in norms and values may account for differences in average levels of unemployment among countries, but have no way to include this in their research models.

- **Public Choice Theory and the Anomaly of Electoral Participation:** Standard public choice theory explains that people vote according to their preferences for different public policy outcomes. This explanation, clearly based on the rational actor model, has one serious problem: *it cannot explain why people vote at all*. Since rarely does a single vote make a difference in an electoral outcome, each ‘rational’ voter would maximize welfare by simply not voting (this is the famous ‘free-rider’ problem). We may be tempted to defend the rationality of voting by saying that if everyone thought that way, no one would vote and the democratic process would be impossible. But this is an application of Kantian morality (the categorical imperative) rather than economic rationality, which observes no such moral laws. Moreover the defense is not correct, since if no one else voted, then it would be ‘rational’ to vote, since one vote would determine the outcome of the election. Following this train of thought, we would expect a small number of people to vote, but not the large numbers that actually do.

When pushed to explain this failure of the conventional choice model to explain participation in voting, economists, speaking ‘off the record,’ refer to the fact that people care about more than just the goods and services they consume.

They speak of the satisfaction from voting, the importance of a sense of duty to the polity, the feelings of personal power and dignity that flow from political participation, and the like. But this style of analysis has rarely been brought into ‘for the record’ analysis. Ironically, those researchers who do accept such ‘off the record’ explanations tend to reject completely the economists’ model of individual choice (maximization of utility subject to constraints), thus precluding a fruitful extension of economic theory to issues in public choice theory. Our research aims to develop a model of individual choice that extends rather than replaces the conventional economic model.

- **Norms and Incentives in Population Dynamics:** The conventional model of individual choice suggests that to promote smaller family size in developing countries, birth control techniques should be made available to families, and families should be penalized for having an excessive number of children. Yet evidence suggests that reductions in desired family size may follow more surely from increasing levels of female education and enhancing the influence of women within the family system, since these measures promote changes in values favorable to lower fertility, including receptivity to the use of birth control technologies.¹¹

This alternative policy option is not available in conventional economics, which does not allow for changes in preferences or values. A defender of conventional theory might reply that states have often attempted unsuccessfully to solve problems by influencing the values of its citizens, so it is reasonable to be suspicious of solutions depending on preference change for their effectiveness. Our point, however, is not to offer preference change as a panacea, but as one among a variety of policy options, the efficacy of which depends on the social context of its application and its linkage to complementary policies. Certainly, however, normative and educational considerations should not be excluded *a priori* when modeling policy options.

7 THE PREFERENCES PROJECT: ORGANIZATION OF THE RESEARCH INITIATIVE

We plan to organize the Preferences Project as an interdisciplinary research network rather than as a collection of unrelated individual research projects. Our reasoning is

¹¹See for instance Sen (1993) on the success of Kerala in lowering fertility in a relative poor region of India, and the fairly uniform fertility decline in East Asia, despite extremely diverse systems of incentives and birth control availability (Feeney, 1994). Additional support for the assertion that fertility transitions are facilitated by a cultural transition process, see Zei and Cavalli-Sforza (1977) and Pollak and Watkins (1993).

that research concerning human behavior has advanced in all the behavioral sciences—economics, sociology, anthropology, psychology, political science, and biology—in a parallel over the past two decades, with considerable overlap and with the emergence of common themes and analytical models. Now is the time to bring together researchers who can unite and synchronize these efforts.

We expect a number of different forms of interdisciplinary cooperation to emerge. All are predicated on the expectations that successful efforts in modeling norms and preferences are likely to take the form of joint research involving contributions both to economics and its sister disciplines, by economists and other behavioral scientists working together.

One form of cooperation will involve the direct collaboration of economists and noneconomists in developing theories, testing hypotheses, and preparing joint research papers for publication in standard economics journals. We have already identified several possible collaborations of this form, involving psychologists, anthropologists, and political scientists on the one hand, and economists on the other. Such direct collaboration has been rare in the modern economic literature, but the extremely well-received collaboration of the psychologist Daniel Kahneman (a member of our proposed core group) and various economists is indicative, we believe, of the current receptivity of economists to such research, which we expect to undergo vigorous growth in coming years.

A second form of cooperation will involve economists and noneconomists generating a common framework for addressing a particular problem (for instance crime, cultural diffusion, environmental preferences, experimental evidence on cooperation, or the role of communities in fostering cooperative behavior), but developing their results in publishable forms pertinent to their separate fields of expertise.

Finally, we expect to pursue a limited amount of research in which economists use the expertise of the noneconomists purely as consultants in formulating and testing theories concerning norms and extended preferences.

The Preferences Project will have two phases: a fifteen month development phase and a four year implementation phase. During the implementation phase, we expect to support four types of activities: 1) communication among core group members 2) a Summer Institute that attracts about twenty young researchers 3) individual and small group research projects 4) an external grants program that supports young researchers. In this development grant, which will run through Fall 1996, we are asking for funds to begin work on activities 1, 2, and 3. The communication function will take place in a series of group meetings. We will organize the first Summer Institute during Summer 1996. We plan to offer support for pilot research projects that will be undertaken by individuals and small working groups during Spring and Summer 1996. In Spring 1996 we will report on accomplishments to date and submit a proposal to the MacArthur Foundation with a fully elaborated research agenda for the four-year implementation

phase of the project.

During this development phase of the project, we plan to meet four times: at core group meetings in September, 1995, January, 1996, and April, 1996, and at the Summer Institute in June or July, 1996. Each of the core meetings will last two or three days. We plan to ask core members and prospective core members to present material from their own and related research relevant to our future collaborative effort. In this way, group members will become becoming fluent in the relevant parts of each other's disciplines.

Second, using this interdisciplinary base, we will ask core members, or small sub-groups of core members, to present potential research topics for the implementation phase of the project. In the process of discussing these topics and identifying areas of overlapping interests, we will establish the broad outlines of a research agenda.

At the 1996 Summer Institute, core members of the Preferences Project and related researchers will be invited to present on-going research related to the Preferences Project, and interested behavioral scientists, including doctoral students, post-doctoral students, and young assistant professors, will be invited to attend lectures and participate in discussions. The Summer Institute will both reach out to behavioral scientists interested but not knowledgeable in the field, and allow broader interaction among project researchers than is possible in a two-or three-day core group meeting.

During the implementation phase of the Preferences Project, grants will be made to research groups consisting both of core group members and non-members. We believe that the optimal time frame for most research groups will be one or two years, and we will encourage the rotation of core group membership in the course of the implementation phase of the project, as some research goals are completed and new research objectives materialize. We expect to run from four to eight research groups concurrently when operating at full force, some of which may consist of a single researcher and others as many as four or five. The areas of research are likely to include experimental studies of altruism and cooperation, historical studies using normative models to explain the development of economic institutions, developing and testing models of cultural development and diffusion as a function of the structure of economic institutions, the interaction of community structure and individual choice, and the application of extended preference models to public policy, among others.

Experience has shown that it is not wise to have the entire group participate in resource allocation decisions. We thus plan to leave resource allocation decisions in the hands of the co-chairs. To avoid real or perceived conflict of interest, we propose that the co-chairs not be eligible for any of the research funds that they allocate among group members. Their research support is budgeted as a separate line item and is subject to the oversight of the program officer from the Foundation. This support is intended to encourage the co-chairs work on the topics outlined below. It will also provide compensation for the time involved in the administration of the Preferences Project.

During 1995-96, the research funds provided to Paul Romer will be used to support his work on political participation and criminal activity, and Herbert Gintis will extend his current research, involving the interaction of market, state, and community in affecting economic welfare, to deal with the role of community in establishing and enforcing norms of reciprocity, cooperation, and fairness.

Meetings of the entire group will be central to the activities during the first year. We propose that each core member be given what we refer to as “base support” at the level of \$6000 in the first year for contributing to the initial planning and development activities. In subsequent years, we may choose to use other arrangements to support group interaction. These could include small group meetings, or participation in a Summer Institute organized around the topic of a small research group. We expect to maintain an internal Working Materials series to facilitate the communication of research results among core members. This may develop into an externally circulated series of working papers. Ultimately, the co-chairs of the Preferences Project will prepare one or more manuscripts or edited volumes of research work generated by the project. In the past, similar groups have found that having four to six members spend a year together on sabbatical at an institution such as the Center for Advanced Studies in the Behavioral Sciences is very useful in the final “writing up” stage of an extended period of collaboration. We may therefore want to set aside some research funds to support this activity in the final year.

8 PROSPECTIVE MEMBERS OF THE NORMS AND PREFERENCES PROJECT

Our list of core members is not yet complete, and this description of the current state of affairs in constituting the group’s membership is strictly provisional.

Among the economists we intend to ask to join the group are George Akerlof (University of California, Berkeley), Kaushik Basu (Cornell University), Samuel Bowles (University of Massachusetts, Amherst), Ernst Fehr (University of Berlin), and Avner Greif (Stanford University). Professor Akerlof’s work, including Akerlof (1980,1982), has been pathbreaking in drawing on psychological and sociological theory in developing economic models—including of cognitive dissonance, norms of reciprocity, reference groups, and myopia. Professor Basu’s work, including Basu(1986a,b), has dealt with the inability of game theoretic notions of rationality to explain individual behavior and strategic interaction, and develops concepts of normative constraint to deal with anomalies in traditional theory. Samuel Bowles’ work on the interaction of individual behavior and economic institutions has been extensive and internationally recognized (Bowles 1985,1994; Bowles and Gintis 1975,1986,1993a,b,1995). Ernst Fehr, including Fehr (1991,1994), is an experimental economist who has done pathbreaking research in investigated how varying social rules affects the norms and commitments exhibited by interacting individuals, including the fact that wage and price setting is affected

by norms of fairness and reciprocity, and individuals spontaneously cooperate under conditions where the rational actor model predicts strictly non-cooperative behavior. Avner Greif is an economic historian whose research (1993, forthcoming) on differences in the normative structures of Maghribi and Genoese trading association identifies mechanisms by which community organization determines which among a plethora of possible norms will obtain, and thus will be followed and defended by community members. The efficiency and adaptability of the resulting community, he shows, determines whether these norms will reproduce and expand over time.

The core group also includes the following members from various fields: (a) the anthropologist Robert Boyd (University of California, Los Angeles) who, with his coauthor P. J. Richerson, has pioneered in developing game-theoretic, biologically-inspired models of cultural development and transmission that provide powerful tools for analyzing the links between culture and institutions (1985,1988,1992,1994); (b) the biologist Marcus Feldman (Stanford University), who with his coauthor Luigi L. Cavalli-Sforza has been a pioneer in developing gene-culture diffusion models of cultural evolution (Cavalli-Sforza and Feldman 1978,1981); (c) the psychologist Daniel Kahneman (Princeton University), who with various coauthors has revolutionized the study of how individuals actually evaluate and choose among alternative situations (Kahneman and Tversky 1984; Kahneman, Knetsch, and Thaler 1986,1991); (d) the sociologist Jane J. Mansbridge (Northwestern University), whose work (1980,1990) centers on alternatives to the notion that individuals are motivated by self-interest alone; (e) the political scientist Robert D. Putnam (Harvard University), whose influential work on the growth and decline of community organization (1994) has the potential to contribute strongly to our research objectives, since norms and preferences appear to develop within and are stabilized by the communities within which individuals operate.

9 NOTES ON BUDGET ITEMS

The budget for this grant is listed in tabular form at the back of the proposal. These notes describe the main budget items.

1. Research support.

The most important item in the budget are the funds that support the research activities of group members. Support will be provided in three ways.

As described above, each member of the network (other than the co-chairs) will receive base support of \$6000 per year. We are planning for a group with 10 members in addition to the two co-chairs. In subsequent years, we may rely less on this lump sum support of this type and reallocate these funds to support for specific research projects.

Second, we have budgeted \$120,000 for specific research projects. These funds will be spent to support investigator research time, research assistance, dissertation work, and special expenses such as equipment or the costs of running experiments. The level requested here is a transitional amount intended to carry us over until the full implementation grant is awarded. In future years, we expect that the bulk of the project funds will be used for this purpose. The decision procedure for allocating these funds will be for the entire group to set the intellectual agenda. The co-chairs will then make decisions concerning the specific allocations of funds. We expect that most of these funds will be subcontracted to other universities. Some of this research will be carried out both by group members and researchers from outside the group who have particular expertise in the high priority areas.

The final category of research support is that provided to the two co-chairs. These are the only funds that the co-chairs will receive. They will not receive the base support of \$6000, nor will they be eligible for research support from the funds they allocate for specific projects. In this way, the co-chairs will be free to make decisions concerning the appropriate level of base support in future years and the allocation of the research support in a way that is free of both the appearance and the reality of a conflict of interest. This support for the two co-chairs, which is set by the program officer at the Foundation, supports their research on network topics and will help free additional time for them to compensate for the time spent leading and coordinating network activities.

2. Meeting expenses

We are planning four meetings in 1995-6. The meetings that have been held to date have cost about \$15,000 per meeting, and we expect similar costs for future meetings.

3. Summer Institute

The summer institute in 1996 will attract about twenty participants from outside the core group and should last about two weeks. We have budgeted \$80,000 for this activity. The Russell Sage Behavioral Economics group has organized a summer institute of about this size at about this cost. The Center for Advanced Studies in the Behavioral Sciences runs summer institutes that cost about \$130,000 to about \$150,000, but their program runs longer (six weeks).

4. Administrative Assistant

Following the model that has been used in other networks, this person will keep the purely administrative demands on the co-chairs to a minimum. He or she will be responsible for budgets, including the supervision of research budgets for

individuals working at other institutions. This person will also handle meeting arrangements and reporting requirements. He or she will work at Stanford, where Paul Romer has an affiliation. The estimated salary is \$36,000. The staff benefits rate there is currently 28.2% and will decrease to 26.2% in the fall.

5. Office Expense

We have allowed for office expenses that will be incurred by Paul Romer, Herbert Gintis, and the administrative assistant. In the beginning, we expect to purchase items such as fax machines and answering machines at both Stanford and the University of Massachusetts and a personal computer and printer for the administrative assistant. In future years, the equipment expense should be lower. Postage and photocopying will probably be higher as the number of number of working papers and the number of recipients of the working papers, grows.

6. Direct Costs

Following the guidelines specified by the foundation, the budget does not allow for any unallocated overhead expense. The direct costs of the Hoover Institution were estimated from their experience with similar projects. For some items the costs can be calculated directly. The cost of the office space that they will provide for the administrative assistant is unambiguous because they have rented additional space in the private market in recent years (The cost of office space is included in the Facilities and Supplies line item.) Their experience is that it costs about \$100 per month for the network services staff—the people who keep the local network working and maintain the links to the internet. For other items, we used an estimate of the level of activity that this grant will generate and use this to scale the expense accordingly. For human resources, this meant using the ratio of the human resources budget to total salary expense at Hoover (1.6%) and applying this ratio to the cost of the administrative assistant. For the parts of the facilities and supplies budget line and central administrative cost, we used comparable ratios and applied them to the projected expenditures at Hoover.

10 BIBLIOGRAPHY

George Akerlof, "A Theory of Social Custom, of Which Unemployment May Be One Consequence," *Quarterly Journal of Economics* 94 (June 1980):749–775.

George Akerlof, "Labor Contracts as Partial Gift Exchange," *Quarterly Journal of Economics* 97,4 (November 1982):543–569.

Elizabeth Anderson, "Some Problems with the Theory of Rational Choice," Department of Philosophy, University of Michigan, 1991.

L. S. Anderson, T. G. Chiricos, and G. P. Waldo, "Formal and Informal Sanctions," *Social Problems* 25 (1977):103-114.

Kaushik Basu, "One Kind of Power," *Oxford Economic Papers* 38 (1986a):259-282.

Kaushik Basu, "Markets, Power, and Social Norms" *Political Weekly* 21,43 (October 25, 1986b).

Gary Becker and Kevin Murphy, "A Theory of Rational Addiction," *Journal of Political Economy* 96 (August 1988).

Gary Becker et al. "An Empirical Analysis of Cigarette Addiction" *American Economic Review* 84 (June 1994).

Daved G. Blanchflower, Andrew J. Oswald, and Peter B. Warr, "Well-Being over Time in Britain and the USA," preprint, (November 1993)

Samuel Bowles, "The Production Process in a Competitive Economy: Walrasian, Neo-Hobbesian, and Marxian Models," *American Economic Review* 75,1 (March 1985):16–36.

Samuel Bowles, "The Market as a Cultural Institution," Department of Economics, University of Massachusetts (October 1994).

Samuel Bowles and Herbert Gintis, "The Problem with Human Capital Theory," *American Economic Review* 65,2 (May 1975):74–82.

Samuel Bowles and Herbert Gintis, *Democracy and Capitalism: Property, Community, and the Contradictions of Modern Social Thought* (New York: Basic Books, 1986).

Samuel Bowles and Herbert Gintis, "The Revenge of *Homo Economicus*: Contested Exchange and the Revival of Political Economy," *Journal of Economic Perspectives*

7,1 (Winter 1993a):83–102.

Samuel Bowles and Herbert Gintis, “The Democratic Firm: An Agency-Theoretic Evaluation,” in Samuel Bowles, Herbert Gintis, and Bo Gustafsson (eds.) *Democracy and Markets: Participation, Accountability, and Efficiency* (Cambridge: Cambridge University Press, 1993b).

Samuel Bowles and Herbert Gintis, “Efficient Redistribution: New Rules for Market, State and Economy,” University of Massachusetts Working Paper (January 1995).

Robert Boyd and P. J. Richerson, *Culture and the Evolutionary Process* (Chicago: University of Chicago Press, 1985).

Robert Boyd and P. J. Richerson, “The Evolution of Reciprocity in Sizeable Groups,” *Journal of Theoretical Biology* 132 (1988):337–356.

Robert Boyd and P. J. Richerson, “Punishment Allows the Evolution of Cooperation (or Anything Else) in Sizeable Groups,” *Ethology and Sociobiology* 113 (1992):171–195.

Robert Boyd and P. J. Richerson, “The Evolution of Norms: An Anthropological View,” *Journal of Institutional and Theoretical Economics* 150,1 (1994):72–87.

L. R. Caporeal, “Homo Sapiens, Homo Faber, Homo Socians: Technology and the Social Animal,” in W. Callebaut and R. Pinxten (eds.), *Evolutionary Epistemology: A Multiparadigm Program* (Reidel, 1987).

Luigi L. Cavalli-Sforza and Marcus W. Feldman, “Towards a Theory of Cultural Evolution,” *Interdisciplinary Science Reviews* 3,2 (1978):99–107.

Luigi L. Cavalli-Sforza and M. W. Feldman, *and Evolution* (Princeton: Princeton University Press, 1981).

Kuang-Ho Chen, Luigi L. Cavalli-Sforza and Marcus W. Feldman, “A Study of Cultural Transmission in Taiwan,” *Human Ecology* 10,3 (1982):365–382.

Andrew E. Clark and Andrew J. Oswald, “Satisfaction, Education, and Comparative Income,” London School of Economics (March 1995).

Douglas D. Davis and Charles A. Holt, *Experimental Economics* (Princeton: Princeton University Press, 1993)

Len Doyal and Ian Gough, *A Theory of Human Need* (New York: Guilford, 1991).

Richard A. Easterlin, "Does Economic Growth Improve the Human Lot? Some Empirical Evidence," *Nations and Households in Economics Growth: Essays in Honor of Moses Abramovitz* (New York: Academic Press, 1974).

Richard A. Easterlin, "Will Raising the Incomes of All Increase the Happiness of All?" *Journal of Economic Behavior and Organization* (June 1995).

Robert C. Ellickson, "A Critique of Economic and Sociological Theories of Social Control," *Journal of Legal Studies* 67 (1987):67-100.

Jon Elster, *Ulysses and the Sirens: Studies in Rationality and Irrationality*, (Cambridge: Cambridge University Press, 1979).

Griffith Feeney, "Fertility Decline in East Asia," *Science* 266 (2 December, 1994):1518–1523.

Ernst Fehr, "Fair Wages and Unemployment," (April 1991).

Ernst Fehr and Peter Zych "The Power of Temptation: Irrationally Myopic Excess Consumption in an Addiction Experiment," (September 1994).

Herbert Gintis, "A Radical Analysis of Welfare Economics and Individual Development," *Quarterly Journal of Economics* 86,4 (November 1972):572–599.

Herbert Gintis, "Welfare Criteria with Endogenous Preferences," *International Economic Review* 15,2 (June, 1974):415–429.

Avner Greif, "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition," *American Economic Review* 83,3 (June 1993): 525–548.

Avner Greif, "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individual Societies," *Journal of Political Economy* (forthcoming)

Albert Hirschman, "Against Parsimony: Three Easy Ways of Complicating Some Categories of Economic Discourse," *Economics and Philosophy* 1 (1985):7–21.

Daniel Kahneman and Amos Tversky, "Choices, Values and Frames," *American Psychologist* 39 (April 1984):341–350

Daniel Kahneman, Jack L. Knetsch, and Richard H. Thaler, "Fairness and the Assumptions of Economics," *Journal of Business* 59,4,2 (1986):S285–S300.

Daniel Kahneman, Jack L. Knetsch, and Richard H. Thaler, "The Endowment Effect,

Loss Aversion, and Status Quo Bias,” *Journal of Economic Perspectives* 5,1 (Winter 1991):193–206.

Stephen R. Kellert and Edward O. Wilson (eds.), *The Biophilia Hypothesis* (Washington, DC: Island Press, 1993).

Melvin Kohn et al., “Position in the Class Structure and Psychological Functioning in the U.S., Japan, and Poland,” *American Journal of Sociology* 95,4 (January 1990):964–1008.

Robert E. Lane, “Does Money Buy Happiness?” *The Public Interest* 113 (Fall 1993):56–65.

Jane Mansbridge, *Beyond Adversarial Democracy* (Chicago: University of Chicago Press, 1980).

Jane Mansbridge (ed.), *Beyond Self-Interest* (Chicago: University of Chicago Press, 1990).

Elinor Ostrom, *Governing the Commons*, (Cambridge: Cambridge University Press, 1990)

Andrew J. Oswald, “Happiness and Economic Performance,” London School of Economics (May 1994).

Robert D. Putnam, “Bowling Alone: Democracy in America at the End of the Twentieth Century,” Harvard University (August 1994).

Paul Seabright, “Is Cooperation Habit-Forming?”, Churchill College, Cambridge, 1993.

Amartya Sen “Rational Fools: A Critique of the Behavioral Foundations of Economic Theory,” *Philosophy and Public Affairs* 6,4 (Summer 1977): 317–344.

Amartya Sen, *Choice, Welfare and Measurement* (Cambridge, MIT Press, 1982).

Amartya Sen, *Commodities and Capabilities* (Amsterdam, North-Holland Press, 1985).

Amartya Sen, “The Economics of Life and Death,” *Scientific American*, (May 1993):40–47.

Vernon Smith and Arlington W. Williams, “Experimental Market Economics,” *Scientific American* (December 1992):116–121.

Michael Taylor, “Good Government: On Hierarchy, Social Capital, and the Limitations

of Rational Choice Theory," *Journal of Political Philosophy* (forthcoming).

Charles R. Tittle, *Sanctions and Social Deviance: The Question of Deterrence* (New York: Praeger, 1980).

Franz Weissing and Elinor Ostrom, "Irrigation Institutions and the Games Irrigators Play: Rule Enforcement without Guards," in Reinhard Selten (ed.) *Game Equilibrium Models II: Methods, Morals, and Markets* (Springer-Verlag, Berlin, 1991):188–262.